Appendix G. Mitigation and Monitoring

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G.1 Mitigation and Monitoring

The Final Environmental Impact Statement (EIS) assesses the potential biological, socioeconomic, physical, and cultural impacts that could result from the construction, operations and maintenance (O&M), and conceptual decommissioning of the Maryland Offshore Wind Project (Project) proposed by US Wind LLC (US Wind), in its Construction and Operations Plan (COP) (US Wind 2024[1]). The proposed Project described in the COP and this Final EIS would be up to 2,000 megawatts (MW) in scale and sited 11.5 statute miles (mi) (18.5 kilometers [km]) off the coast of Maryland, within the area of Renewable Energy Lease Number OCS-A 0490 (Lease Area). The Project is designed to serve demand for renewable energy in the Delmarva Peninsula, including Maryland.

As part of the Project, US Wind has committed to implementing lessee-proposed measures (LPMs) to avoid, reduce, mitigate, or monitor impacts on the resources discussed in Chapter 3, *Affected Environment and Environmental Consequences*, of the Final EIS. These LPMs are described in Table G-1 of this appendix. The U.S. Department of the Interior, Bureau of Ocean Energy Management (BOEM) considers as part of the Proposed Action only those measures that US Wind has committed to in Volume II, Section 1.5 of the COP (US Wind 2024).

BOEM may select alternatives and require additional mitigation or monitoring measures to further protect and monitor these resources. Additional mitigation and monitoring measures may result from reviews under several environmental statutes (e.g., Clean Air Act, Endangered Species Act, Magnuson-Stevens Fishery Conservation and Management Act, Marine Mammal Protection Act, and National Historic Preservation Act) that are described in Appendix A of the Final EIS. Additional mitigation measures identified by BOEM, as well as those that may result from reviews under these statutes, are provided in Table G-2. Please note that some of these mitigation measures are outside of BOEM's statutory and regulatory authority but could be adopted and imposed by other governmental entities. Table G-2 provides descriptions of these mitigation or monitoring measures, as well as those that BOEM has identified for analysis in the Final EIS. Other measures identified during development of this EIS are listed in Table G-3, and Table G-4 identifies measures that may be required by authorizations and permits issued to the lessee.

If BOEM decides to approve the COP, the Record of Decision (ROD) would state which of the mitigation and monitoring measures identified by BOEM in Table G-2 have been adopted, and if not, why they were not. As such, the ROD would inform terms and conditions of COP approval and would compel compliance with or execution of identified mitigation and monitoring measures (40 Code of Federal Regulations [CFR] 1505.3). US Wind would be required to certify compliance with terms and conditions, as required under 30 CFR 285.633. On January 31, 2023, a Final Rule published in the Federal Register (FR) reassigning existing regulations governing safety and environmental oversight and enforcement of OCS renewable energy activities from BOEM to BSEE (88 FR 6376). JOINT NTL No. 2023-N01 provides

[1] US Wind. 2024. Construction and Operations Plan: Maryland Offshore Wind Project. July 2024 TRC Companies. Waltham (MA). 2 vols + appendices. Maryland Offshore Wind Construction and Operations Plan for Commercial Lease OCS-A 0490.

information and guidance regarding the reassignment of oversight and enforcement to BSEE. Thus, BSEE will be responsible for providing oversight of enforcement and compliance and review of the activities conducted under the approved COP. The frequency and extent of the review would be based on the significance of any changes in available information and on onshore or offshore conditions affecting, or affected by, the activities conducted under the COP.

Monitoring measures may be required to evaluate the effectiveness of a mitigation measure or to identify if resources are responding as predicted to impacts from the Proposed Action. Monitoring programs would be developed in coordination among BOEM and agencies with jurisdiction over the resource to be monitored. The information generated by monitoring may be used to (1) adapt how a mitigation measure identified in the COP or ROD is being implemented, (2) revise or develop new mitigation or monitoring measures required under the COP in accordance with 30 CFR 585.634(b) or develop measures for future projects, or (3) contribute to regional efforts for better understanding of the impacts and benefits resulting from offshore wind energy projects in the Atlantic (e.g., potential cumulative impact assessment tool). Unless specified, the proposed mitigation measures described below would not change the impact ratings on the affected resource, as described in Chapter 3, *Affected Environment and Environmental Consequences*, of the Final EIS, but would further reduce expected impacts or inform the development of additional mitigation measures if required.

USACE is serving as a co-action agency and will adopt the Final EIS to meet their NEPA compliance requirements. BOEM, in coordination with cooperating agencies, considered potential mitigation measures to avoid, minimize, or mitigate impacts on the resources assessed in this document. Mitigation measures incorporated into the ROD for the EIS are enforceable. Enforcement of specific mitigation measures will fall to the relevant permitting agency.

Table G-1. Lessee-proposed mitigation and monitoring measures

Resource Area Mitigated	Project Stage*	Mitigation and Monitoring Measures	Source	Anticipated Enforcing Agency
Air Quality	C	Diesel fuel for use in the diesel engines will meet the per gallon fuel standards of 40 CFR 80.510(b) as applicable.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USEPA
Air Quality	O&M	Diesel fuel for use in the diesel engines will meet the per gallon fuel standards of 40 CFR 80.510(b) as applicable.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USEPA
Air Quality	C	Engines will be operated and maintained in accordance with the manufacturer's recommendations and industry practices.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USEPA
Air Quality	O&M	Engines will be operated and maintained in accordance with the manufacturer's recommendations and industry practices.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USEPA
Air Quality	C	Land based engines that meet the EPA non-road engine standards will be used, as applicable.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USEPA
Air Quality	O&M	Land based engines that meet the EPA non-road engine standards will be used, as applicable.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USEPA
Air Quality	C	Unnecessary idling of engines will be limited, where practicable.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USEPA
Air Quality	O&M	Unnecessary idling of engines will be limited, where practicable.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USEPA
Air Quality	C	US Wind will obtain any necessary Clean Air Act permits under the state of Maryland's delegated program and comply with applicable permit conditions.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USEPA
Air Quality	O&M	US Wind will obtain any necessary Clean Air Act permits under the state of Maryland's delegated program and comply with applicable permit conditions.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USEPA
Air Quality	C	Vessel engines will meet the applicable EPA and International Maritime Organization (IMO) marine engine emission standards.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USEPA
Air Quality	O&M	Vessel engines will meet the applicable EPA and International Maritime Organization (IMO) marine engine emission standards.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USEPA
Air Quality	C	Where practicable, engines with add-on emission controls will be used.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USEPA
Air Quality	O&M	Where practicable, engines with add-on emission controls will be used.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USEPA
Bats	C	Following consultation with DNREC and USFWS, US Wind would conduct tree clearing activities between October 1 and March 31. No tree clearing at the substation landfall would occur from April 1 through July 31 to avoid or minimize impacts to northern long-eared bat during the summer maternity period.	COP, Volume II, Section 1.5 (US Wind 2024)	USACE, USFWS
Bats	C	US Wind will compile a comprehensive wildlife survey and observation information database to include surveys, PSO data, and other wildlife monitoring records. Data will be made available to government, research, and environmental groups, among others. Information is provided on the following website: Remote Marine and Onshore Technology.	COP, Volume II, Section 1.5 (US Wind 2024)	USACE, USFWS
Bats	C	US Wind will conduct a bat habitat assessment and bat survey at the US Wind substation locations.	COP, Volume II, Section 1.5 (US Wind 2024)	USACE, USFWS
Bats	C	Acoustic recorders to collect incidental bat calls offshore have been deployed on survey vessels throughout the Lease area and along the Offshore Export Cable Corridors.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USFWS
Bats	C	The Metocean Buoy has been equipped with a bat acoustic recorder to monitor for the nocturnal calls of bats within the Lease area for up to two years.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USFWS
Benthic Resources	C	Potential impacts from anchoring will be minimized by avoiding locations with sensitive habitats and utilizing mid-line anchor buoys.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE
Benthic Resources	C	Based on feedback from DNREC, US Wind will implement the following time of year restrictions to minimize impacts of sediment disturbance, including: • No in-water work (e.g., cable installation, HDDs, dredging) within Indian River Bay between March 1 and September 30, and • No HDD activities in the Atlantic to the beach landfall from April 15 through September 15 (inclusive of recreational period avoidance May 15 through September 15) to avoid impacts to spawning horseshoe crabs.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, DNREC
Benthic Resources	C	Minimize sediment disturbance by utilizing the best available technologies to achieve deep burial of submarine cable into a stable sediment layer (i.e., jet plow technology, HDD, gravity cells, etc.).	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE

Resource Area Mitigated	Project Stage*	Mitigation and Monitoring Measures	Source	Anticipated Enforcing Agency
Benthic Resources	C	To the greatest extent practicable, select areas with suitable seabed conditions for cable installation during cable route planning.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE
Benthic Resources	O&M	To the greatest extent practicable, select areas with suitable seabed conditions for cable installation during cable route planning.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE
Benthic Resources	C	Use submarine cables that have proper electrical shielding and bury the cables in the seafloor, when practicable.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE
Benthic Resources	O&M	Conduct a site-specific study of potential EMF impacts on electrosensitive marine organisms.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, NMFS
Benthic Resources	C	Minimize the amount of scour protection required.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE
Benthic Resources	O&M	Minimize the amount of scour protection required.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE
Benthic Resources	C	Select suitable geological locations for the installation of the WTG, OSS and Met Tower foundations and design foundations appropriate to geological conditions.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE
Benthic Resources	O&M	Select suitable geological locations for the installation of the WTG, OSS and Met Tower foundations and design foundations appropriate to geological conditions.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE
Birds	C	US Wind plans to install cables outside of breeding season, April 1 to July 31, which would minimize impacts to marsh nesting birds.	COP, Volume II, Section 1.5 (US Wind 2024)	USFWS
Birds	O&M	US Wind plans to conduct associated maintenance and monitoring outside of breeding season, April 1 to July 31, which would minimize impacts to marsh nesting birds.	COP, Volume II, Section 1.5 (US Wind 2024)	USFWS
Birds	C	US Wind will compile a comprehensive wildlife survey and observation information database to include surveys, PSO data, and other wildlife monitoring records. Data will be made available to government, research, and environmental groups, among others. Information is provided on the following website: Remote Marine and Onshore Technology.	COP, Volume II, Section 1.5 (US Wind 2024)	USFWS
Birds	C	Avoid colonial waterbird nesting sites and avoid construction at beach landfall and in-water work within Indian River Bay within the nesting season.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USFWS
Birds	C	DNREC recommends minimizing disturbance to bird colonies by implementing 492-foot (150-meter) buffer for small colonies (less than 30 nests), 984-foot (300-meter) buffer for large colonies (more than 30 nests) and to avoid staging equipment on sensitive wetland habitat. US Wind has avoided known colonial bird nesting sites and would construct outside nesting season.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, DNREC
Birds	C	Measures that minimize lighting impacts on avian species will be implemented where feasible, as approved by FAA, BOEM, USCG and other regulatory agencies.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USFWS
Birds	O&M	Measures that minimize lighting impacts on avian species will be implemented where feasible, as approved by FAA, BOEM, USCG and other regulatory agencies.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USFWS
Birds	O&M	Anti-perching measures may be installed on the deck/access platform of the WTGs to discourage birds from resting on and congregating around the structures.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USFWS
Birds	C	Avian monitoring equipment, including nanotag antennas and acoustic sensors, have been installed on the Metocean Buoy.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USFWS
Birds	C	US Wind proposes preconstruction and post-construction aerial, digital surveys to monitor for avoidance and displacement of avian species (See COP, Appendix II-N2; US Wind 2024).	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USFWS
Birds	C	Although work is not planned in the immediate vicinity (within 660 feet) of a known bald eagle nest, US Wind will complete the Northeast Bald Eagle Screening Form prior to the start of construction	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USFWS
Birds	C	At least 180 days prior to the start of commissioning of the first WTG, US Wind would distribute a Compensatory Mitigation Plan for piping plovers, rufa red knot, and roseate tern to BOEM, BSEE, and USFWS for review and comment. BOEM, BSEE, and USFWS would review the Compensatory Mitigation Plan and provide any comments on the plan to US Wind within 60 days of its submittal. US Wind would resolve all comments on the Compensatory Mitigation Plan to BOEM, BSEE, and USFWS's satisfaction before implementing the Plan and before commissioning of the first WTG. The Compensatory Mitigation Plan would provide compensatory mitigation actions to fully offset the impact of the incidental take of piping plover, rufa red knot, and roseate tern. The Compensatory Mitigation Plan would require that the compensatory mitigation be implemented by the fifth year of WTG operation.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USFWS
Coastal Habitat and Fauna	C	Project-specific Spill Prevention, Control, and Countermeasure (SPCC) Plan will be prepared prior to construction and for operations activities.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE

Resource Area Mitigated	Project Stage*	Mitigation and Monitoring Measures	Source	Anticipated Enforcing Agency
Coastal Habitat and Fauna	O&M	Project-specific Spill Prevention, Control, and Countermeasure (SPCC) Plan will be prepared prior to construction and for operations activities.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE
Coastal Habitat and Fauna	C	US Wind will develop a Stormwater Pollution Prevention Plan (SWPPP) for onshore construction activities, as appropriate.	COP, Volume II, Section 1.5 (US Wind 2024)	USEPA, DNREC
Coastal Habitat and Fauna	O&M	US Wind will develop a Stormwater Pollution Prevention Plan (SWPPP) for onshore construction activities, as appropriate.	COP, Volume II, Section 1.5 (US Wind 2024)	USEPA, DNREC
Coastal Habitat and Fauna	C	Methods to reduce engine emissions will be implemented during construction and operation of the proposed Project where practicable, including restricting engine idling.	COP, Volume II, Section 1.5 (US Wind 2024)	USEPA, MDE
Coastal Habitat and Fauna	O&M	Methods to reduce engine emissions will be implemented during construction and operation of the proposed Project where practicable, including restricting engine idling.	COP, Volume II, Section 1.5 (US Wind 2024)	USEPA, MDE
Coastal Habitat and Fauna	C	Cables will be installed using a jet plow to the greatest extent possible. Any dredging needed at HDD locations is expected to be limited to the gravity cells.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE
Coastal Habitat and Fauna	C	Horizontal Directional Drilling (HDD) will be used at landfall locations.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE
Coastal Habitat and Fauna	C	Shellfish relocation/restoration along Inshore Export Cable Corridor 1 (“Inshore Export Cable Route") will be evaluated pre- and post- installation if warranted.	COP, Volume II, Section 1.5 (US Wind 2024)	USACE, DNREC
Coastal Habitat and Fauna	C	The Project has been sited to avoid sensitive or rare habitats (such as high-density clam beds) where feasible, and habitat disturbance will be minimized to the extent practicable.	COP, Volume II, Section 1.5 (US Wind 2024)	USACE, DNREC
Coastal Habitat and Fauna	C	US Wind will install cables using HDD to avoid impacts to coastal dunes and interdunal wetlands and to minimize bottom disturbance.	COP, Volume II, Section 1.5 (US Wind 2024)	USACE, DNREC
Coastal Habitat and Fauna	C	US Wind will locate cable landfalls and onshore facilities so as to avoid impacts to known nesting beaches, where feasible. The use of HDD for cable installation under the Barrier Beach Landfalls will avoid impacts on beaches.	COP, Volume II, Section 1.5 (US Wind 2024)	USACE, DNREC
Coastal Habitat and Fauna	C	US Wind will minimize ground disturbance by confining cable infrastructure, such as transition vaults and HDD operations, to previously disturbed lands as much as practicable.	COP, Volume II, Section 1.5 (US Wind 2024)	USACE, DNREC
Coastal Habitat and Fauna	C	US Wind will minimize impacts on submerged aquatic vegetation where practicable. No submerged aquatic vegetation has been identified in areas proposed for permanent or temporary disturbance.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USACE, DNREC
Coastal Habitat and Fauna	C	US Wind would prioritize beneficial reuse of dredge material (i.e., wetland restoration, beach renourishment), based on the material characteristics and opportunities as they present themselves, over placement in offshore or onshore disposal areas.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USACE, DNREC
Coastal Habitat and Fauna	C	US Wind will compile a comprehensive wildlife survey and observation information database to include surveys, PSO data, and other wildlife monitoring records. Data will be made available to government, research, and environmental groups, among others. Information is provided on the following website: Remote Marine and Onshore Technology.	COP, Volume II, Section 1.5 (US Wind 2024)	USACE, DNREC
Coastal Habitat and Fauna	C	In order to minimize impact to seabeach amaranth, per DNREC’s recommendation, US Wind will not conducting work or staging activities on undeveloped beach sites from July 1 to September 30. Additionally, to conduct surveys during August to document any presence of this species. US Wind would contain construction activities within the disturbed footprint of the Barrier Beach Landfall parking lot and therefore would not disturb seabeach amaranth.	COP, Volume II, Section 1.5 (US Wind 2024)	USACE, DNREC
Coastal Habitat and Fauna	C	Due to the proximity of interdunal swales in the proximity of the Barrier Beach Landfall, per DNREC’s recommendation, US Wind will implement a time of year restriction for all artificial lighting at night from June 1 to September 1 to minimize impacts to Bethany Beach Firefly. Additionally, no alternations to dune topography or woody vegetation during this time period within 100 feet of interdunal swales to minimize light pollution to these sensitive species.	COP, Volume II, Section 1.5 (US Wind 2024)	USACE, DNREC
Coastal Habitat and Fauna	O&M	Conduct a site-specific study of potential EMF impacts on electrosensitive marine organisms.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE
Coastal Habitat and Fauna	O&M	Use submarine cables that have proper electrical shielding and bury the cables in the seafloor, when practicable.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE
Coastal Habitat and Fauna	C	Agency consultation and monitoring regarding coastal habitats and species will be conducted as needed to mitigate disturbances, as practicable.	COP, Volume II, Section 1.5 (US Wind 2024)	USFWS, DNREC
Coastal Habitat and Fauna	C	Between May 1 and August 1, construction activities will not occur within 100 m (328 ft) of hummocks in Indian River Bay in order to avoid impacts to nesting terns.	COP, Volume II, Section 1.5 (US Wind 2024)	USFWS, DNREC
Coastal Habitat and Fauna	C	Construction is anticipated to occur outside of turtle nesting season. Agency consultation and monitoring will be conducted as needed to mitigate disturbances.	COP, Volume II, Section 1.5 (US Wind 2024)	USFWS, DNREC
Coastal Habitat and Fauna	C	Onshore construction activities will be scheduled to avoid impacting sensitive coastal habitats, where practicable.	COP, Volume II, Section 1.5 (US Wind 2024)	USFWS, DNREC

Resource Area Mitigated	Project Stage*	Mitigation and Monitoring Measures	Source	Anticipated Enforcing Agency
Coastal Habitat and Fauna	C	Previously disturbed areas will be used for the construction laydown area and access roads where feasible.	COP, Volume II, Section 1.5 (US Wind 2024)	USFWS, DNREC
Coastal Habitat and Fauna	C	Following consultation with DNREC and USFWS, US Wind would conduct tree clearing activities between October 1 and March 31. No tree clearing at the substation landfall would occur from April 1 through July 31 to avoid or minimize impacts to northern long-eared bat during the summer maternity period.	COP, Volume II, Section 1.5 (US Wind 2024)	USFWS, DNREC
Coastal Habitat and Fauna	C	US Wind will develop a Stormwater Pollution Prevention Plan (SWPPP) for onshore construction activities, as appropriate.	COP, Volume II, Section 1.5 (US Wind 2024)	USACE, DNREC
Coastal Habitat and Fauna	C	US Wind will establish and maintain buffers around wetlands, implement best management practices (BMPs) to minimize erosion and control sediments and maintain natural surface drainage patterns, as practicable.	COP, Volume II, Section 1.5 (US Wind 2024)	USACE, DNREC
Coastal Habitat and Fauna	O&M	Lighting-related impacts will be minimized by using BMPs where feasible. Examples of BMPs to minimize the adverse impacts of artificial lighting will include not lighting the onshore facility at night except in the case of an emergency that requires an immediate response, and the use of down-shielded light fixtures to reduce the visibility of light by birds, bats, and insects flying above the facility.	COP, Volume II, Section 1.5 (US Wind 2024)	USACE, DNREC
Commercial Fisheries and For-hire Recreational Fishing	C	US Wind will conduct pre- and post-construction monitoring for regionally important species, in a partnership with the University of Maryland Center for Environmental Science to study black sea bass, to identify commercial and recreational fishing impact.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, NMFS
Commercial Fisheries and For-hire Recreational Fishing	O&M	US Wind will conduct pre- and post-construction monitoring for regionally important species, in a partnership with the University of Maryland Center for Environmental Science to study black sea bass, to identify commercial and recreational fishing impact.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, NMFS
Commercial Fisheries and For-hire Recreational Fishing	O&M	Conduct a site-specific study of potential EMF impacts on electrosensitive marine organisms.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, NMFS
Commercial Fisheries and For-hire Recreational Fishing	C	US Wind established a process for gear loss compensation for commercial fishermen.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE
Commercial Fisheries and For-hire Recreational Fishing	O&M	US Wind established a process for gear loss compensation for commercial fishermen.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE
Commercial Fisheries and For-hire Recreational Fishing	C	US Wind developed a Fisheries Communication Plan, in conjunction with the designated Fisheries Liaison Officer and will work with fisheries stakeholders to update it as appropriate.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE
Commercial Fisheries and For-hire Recreational Fishing	O&M	US Wind developed a Fisheries Communication Plan, in conjunction with the designated Fisheries Liaison Officer and will work with fisheries stakeholders to update it as appropriate.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE
Commercial Fisheries and For-hire Recreational Fishing	C	US Wind will work cooperatively with commercial/recreational fishing entities and interests to review planned activities and ensure that the construction and operation activities will minimize potential conflicts.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE
Commercial Fisheries and For-hire Recreational Fishing	O&M	US Wind will work cooperatively with commercial/recreational fishing entities and interests to review planned activities and ensure that the construction and operation activities will minimize potential conflicts.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE
Cultural Resources	C	The results of HRG and geotechnical surveys have been used to identify potential marine cultural resources and preserved submerged landforms. US Wind will avoid impacts to potential marine cultural resources and submerged landforms by micro-siting Project elements and planning construction around established avoidance areas.	COP, Volume II, Section 1.5 (US Wind 2024)	BOEM, BSEE,
Cultural Resources	C	Planning has taken into account previously recorded cultural resources and areas of high archaeological probability, as well as the extent of prior disturbance, in order to minimize project impacts to known or potential archaeological resources. US Wind will avoid potential terrestrial cultural resources identified, to the extent possible. A draft Historic Property Treatment Plan is included in the Terrestrial Archaeology Resource Assessment (COP, Appendix II-I2) for BOEM's consultation with consulting parties. US Wind anticipates treatment of cultural resources will incorporate a phased approach to additional evaluation and treatment of an archaeological site that will be impacted by the Project. Treatment will include enhanced Phase II Evaluation of the affected portions of the site, consultation to assess effects, and mitigation if those areas are determined eligible for the NRHP. All evaluation and mitigation fieldwork shall be completed prior to construction at the US Wind Substations property.	COP, Volume II, Section 1.5 (US Wind 2024)	BOEM
Cultural Resources	C	US Wind will develop an Unanticipated Discovery Plan to be implemented during onshore and offshore construction. Draft Unanticipated Discovery Plans are included in both the Marine Archaeology Resource Assessment (COP, Appendix II-I1) and Terrestrial Archaeology Resource Assessment (COP, Appendix II-I2) for BOEM's consultation with consulting parties	COP, Volume II, Section 1.5 (US Wind 2024)	BOEM, BSEE
Cultural Resources	C	Temporary avoidance measures will be implemented during onshore construction, including the export cable corridors, which will include protective barrier fencing to avoid an archaeological historic property to the greatest extent practicable. Cultural and tribal monitoring would be implemented as necessary.	COP, Volume II, Section 1.5 (US Wind 2024)	BOEM
Cultural Resources	C	US Wind developed a Monitoring Plan to be implemented during construction and is developing a Historic Property Treatment Plan in coordination with BOEM and consulting parties.	COP, Volume II, Section 1.5 (US Wind 2024)	BOEM
Cultural Resources	C	US Wind will continue to coordinate with the appropriate SHPO and Native American tribes to refine measures to minimize and mitigate impacts to potential cultural resources generally and if particular resources are identified.	COP, Volume II, Section 1.5 (US Wind 2024)	BOEM

Resource Area Mitigated	Project Stage*	Mitigation and Monitoring Measures	Source	Anticipated Enforcing Agency
Cultural Resources	C	Mitigation measures commensurate with potential adverse effects to historic properties impacted by views to the Project are proposed in a Historic Preservation Treatment Plan, through continuing coordination with SHPOs and consulting parties.	COP, Volume II, Section 1.5 (US Wind 2024)	BOEM
Demographics, Employment, and Economics	C	US Wind has a strong interest in the welfare of workers employed by the construction managers, contractors and subcontractors on all components of the Project.	COP, Volume II, Section 1.5 (US Wind 2024)	Best practice - not an enforceable measure
Demographics, Employment, and Economics	O&M	US Wind has a strong interest in the welfare of workers employed by the construction managers, contractors and subcontractors on all components of the Project.	COP, Volume II, Section 1.5 (US Wind 2024)	Best practice - not an enforceable measure
Demographics, Employment, and Economics	C	US Wind is committed to achieving substantial involvement of Maryland-based small businesses in all phases of the Project.	COP, Volume II, Section 1.5 (US Wind 2024)	Best practice - not an enforceable measure
Demographics, Employment, and Economics	O&M	US Wind is committed to achieving substantial involvement of Maryland-based small businesses in all phases of the Project.	COP, Volume II, Section 1.5 (US Wind 2024)	Best practice - not an enforceable measure
Demographics, Employment, and Economics	C	US Wind is committed to creating opportunities for Delaware-based companies able to deliver supply chain components and/or perform on-site work in Delaware.	COP, Volume II, Section 1.5 (US Wind 2024)	Best practice - not an enforceable measure
Demographics, Employment, and Economics	O&M	US Wind is committed to creating opportunities for Delaware-based companies able to deliver supply chain components and/or perform on-site work in Delaware.	COP, Volume II, Section 1.5 (US Wind 2024)	Best practice - not an enforceable measure
Demographics, Employment, and Economics	C	US Wind is coordinating with area organized labor organizations to develop a skilled local workforce for the Project.	COP, Volume II, Section 1.5 (US Wind 2024)	Best practice - not an enforceable measure
Demographics, Employment, and Economics	O&M	US Wind is coordinating with area organized labor organizations to develop a skilled local workforce for the Project.	COP, Volume II, Section 1.5 (US Wind 2024)	Best practice - not an enforceable measure
Environmental Justice	C	US Wind has a particular focus on creating meaningful economic opportunities for environmental justice communities in the Baltimore, Maryland area.	COP, Volume II, Section 1.5 (US Wind 2024)	Best practice - not an enforceable measure
Environmental Justice	O&M	US Wind has a particular focus on creating meaningful economic opportunities for environmental justice communities in the Baltimore, Maryland area.	COP, Volume II, Section 1.5 (US Wind 2024)	Best practice - not an enforceable measure
Environmental Justice	C	US Wind has hired a team of MBE participation and compliance experts to lead the company's outreach efforts to minority businesses and community organizations.	COP, Volume II, Section 1.5 (US Wind 2024)	Best practice - not an enforceable measure
Environmental Justice	O&M	US Wind has hired a team of MBE participation and compliance experts to lead the company's outreach efforts to minority businesses and community organizations.	COP, Volume II, Section 1.5 (US Wind 2024)	Best practice - not an enforceable measure
Environmental Justice	C	US Wind is committed to creating full and equitable business opportunities for minority, women-owned, veteran-owned, and HUBZone businesses in the development of the Project.	COP, Volume II, Section 1.5 (US Wind 2024)	Best practice - not an enforceable measure
Environmental Justice	O&M	US Wind is committed to creating full and equitable business opportunities for minority, women-owned, veteran-owned, and HUBZone businesses in the development of the Project.	COP, Volume II, Section 1.5 (US Wind 2024)	Best practice - not an enforceable measure
Environmental Justice	C	US Wind will support workforce initiatives that are focused on providing support to minority and low-income populations, women, veterans, and underserved communities.	COP, Volume II, Section 1.5 (US Wind 2024)	Best practice - not an enforceable measure
Environmental Justice	O&M	US Wind will support workforce initiatives that are focused on providing support to minority and low-income populations, women, veterans, and underserved communities.	COP, Volume II, Section 1.5 (US Wind 2024)	Best practice - not an enforceable measure
Finfish, Invertebrates, and EFH	C	Project-specific Spill Prevention, Control, and Countermeasure (SPCC) Plan and Oil Spill Response Plan (OSRP) will be prepared prior to construction and for operations activities.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE
Finfish, Invertebrates, and EFH	C	Vessel operators, employees, and contractors will be briefed on marine trash and debris awareness elimination as described in BSEE NTL No. 2015-G03 ("Marine Trash and Debris Awareness and Elimination"), per BOEM guidelines for marine trash and debris prevention.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, NMFS
Finfish, Invertebrates, and EFH	C	Impacts to summer flounder HAPC will be minimized by using dynamic positioning where feasible to minimize the need for construction vessels to anchor to the seafloor and using midline buoys to reduce seafloor scarring when construction vessels need to anchor.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, NMFS
Finfish, Invertebrates, and EFH	C	Based on feedback from DNREC, US Wind will implement the following time of year restrictions to minimize impacts of sediment disturbance, including: • No in-water work (e.g.; cable installation, HDDs, dredging) within Indian River Bay between March 1 and September 30, and • No HDD activities in the Atlantic to the beach landfall from April 15 through September 15 (inclusive of recreational period avoidance May 15 through September 15) to avoid impacts to spawning horseshoe crabs.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, DNREC
Finfish, Invertebrates, and EFH	C	Conduct surveys and review existing data to identify important, sensitive, and unique marine habitats to be avoided.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, NMFS
Finfish, Invertebrates, and EFH	C	Minimize construction activities as practicable in areas containing anadromous fish during migration periods.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, NMFS

Resource Area Mitigated	Project Stage*	Mitigation and Monitoring Measures	Source	Anticipated Enforcing Agency
Finfish, Invertebrates, and EFH	C	Seafloor disturbance during construction will be minimized as practicable.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, NMFS
Finfish, Invertebrates, and EFH	C	Sediment disturbance associated with submarine cable laying will be minimized by jet plowing, HDD techniques and the use of gravity cells where feasible.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, NMFS
Finfish, Invertebrates, and EFH	C	No in-water work in Indian River Bay from March 1 to May 15 to protect the American eel and allow passage of elvers upstream.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, DNREC
Finfish, Invertebrates, and EFH	C	US Wind will compile a comprehensive wildlife survey and observation information database to include surveys, PSO data, and other wildlife monitoring records. Data will be made available to government, research, and environmental groups, among others. Information is provided on the following website: Remote Marine and Onshore Technology.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, NMFS
Finfish, Invertebrates, and EFH	C	Vessels will adhere to United States Coast Guard (USCG) guidelines; follow applicable regulations related to the discharge of bilge water, gray water, and sanitary waste; maintain discharge permits, as appropriate; follow good maintenance and housekeeping procedures to prevent releases of oil and other chemicals to the sea; maintain up-to-date Oil Spill Response Plans (OSRPs) to prevent, contain, and clean up any accidental spills.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, NMFS
Finfish, Invertebrates, and EFH	O&M	Conduct a site-specific study of potential EMF impacts on electrosensitive marine organisms.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, NMFS
Finfish, Invertebrates, and EFH	O&M	Use submarine cables that have proper electrical shielding and bury the cables in the seafloor, when practicable.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, NMFS
Finfish, Invertebrates, and EFH	C	Work lighting will be limited to the extent practicable to areas of active construction in coordination with USCG and other agencies as appropriate.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, NMFS
Finfish, Invertebrates, and EFH	C	Soft-start procedures and sound attenuation will be used during foundation pile driving.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, NMFS
Finfish, Invertebrates, and EFH	C	Fish monitoring equipment including hydrophone receivers designed to detect high frequency fish acoustic tags have been installed on the Metocean Buoy.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, NMFS
Land Use and Coastal Infrastructure	C	US Wind has sited and developed Project elements to minimize disturbance to resources, to the extent practicable, enjoyed by residents of and visitors to the region.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USACE, Local Authority
Land Use and Coastal Infrastructure	C	US Wind will work with local officials to develop a traffic management plan to reduce impacts to local traffic during construction.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, Local Authority
Marine Mammals	C	Vessel operators, employees, and contractors will be briefed on marine trash and debris awareness elimination as described in BSEE NTL No. 2015-G03 ("Marine Trash and Debris Awareness and Elimination"), per BOEM guidelines for marine trash and debris prevention.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE
Marine Mammals	C	Vessels will adhere to United States Coast Guard (USCG) guidelines; follow applicable regulations related to the discharge of bilge water, gray water, and sanitary waste; maintain discharge permits, as appropriate; follow good maintenance and housekeeping procedures to prevent releases of oil and other chemicals to the sea; maintain up-to-date Oil Spill Response Plans (OSRPs) to prevent, contain, and clean up any accidental spills.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USCG
Marine Mammals	O&M	Use submarine cables that have proper electrical shielding and bury the cables in the seafloor, when practicable.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE
Marine Mammals	C	Additional restrictions on pile-driving will include: no simultaneous pile-driving; no more than one monopile driven per day; daylight pile driving only unless health and safety issues require completion of a pile; and initiation will not begin within 1.5 hours of civil sunset or in times of low visibility when the visual clearance zone and exclusion zone cannot be visually monitored, as determined by the lead PSO on duty.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, NMFS
Marine Mammals	C	Establish a clearance zone prior to pile driving using a combination of visual and acoustic monitoring for large whales. The clearance zone is to be monitored for a minimum of 60 minutes and the zone must be clear for 30 minutes before beginning soft-start procedure.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, NMFS
Marine Mammals	C	Establish an exclusion zone using a combination of visual and acoustic monitoring for large whales. Pile-driving will be halted if species enters defined exclusion zone, with exceptions for health and safety considerations as well as technical feasibility.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, NMFS
Marine Mammals	C	Consistent with the anticipated NMFS requirements for an LOA, US Wind will implement at least two functional noise abatement systems, such as double bubble curtains and nearfield attenuation devices, to reduce noise levels to the modeled harassment isopleths, assuming 10-dB attenuation, during all impact pile driving for monopile foundations.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, NMFS
Marine Mammals	C	Once clearance zone is confirmed clear of marine mammals, pile-driving will begin with minimum hammering at low energy for no less than 30 minutes (soft-start).	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, NMFS
Marine Mammals	C	Pile-driving is planned between May 1 and November 30. Pile driving, if necessary, in November, may require additional mitigation measures such as larger clearance or exclusion zones.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, NMFS
Marine Mammals	C	Prepare a pile-driving monitoring plan, to include details about the measures listed below, prior to construction activities. Mitigation measures may be modified to reflect conditions set by NMFS following the application for IHA or LOA associated with construction activities.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, NMFS

Resource Area Mitigated	Project Stage*	Mitigation and Monitoring Measures	Source	Anticipated Enforcing Agency
Marine Mammals	C	Visual clearance and exclusion zones will be monitored by PSOs which are individuals with a current NMFS approval letter as a PSO.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, NMFS
Marine Mammals	C	US Wind will compile a comprehensive wildlife survey and observation information database to include surveys, PSO data, and other wildlife monitoring records. Data will be made available to government, research, and environmental groups, among others. Information is provided on the following website: Remote Marine and Onshore Technology.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE
Marine Mammals	C	Additional opportunities to support passive acoustic monitoring of marine mammals in and around the Lease area in conjunction with ongoing research efforts by others, such as the University of Maryland Center for Environmental Science, will continue to be explored. The UMCES TailWinds project is providing extensive spatial coverage of the wind energy area, monitoring whale and dolphin incidence through PAM with ongoing analysis on vessel traffic impacts. Further, past and planned near real-time whale buoy (RTWB) deployments can inform NOAA and developers on the presence of NARW and other whales on a near-continuous basis (see Real Time Whale Buoy).	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE
Marine Mammals	O&M	Additional opportunities to support passive acoustic monitoring of marine mammals in and around the Lease area in conjunction with ongoing research efforts by others, such as the University of Maryland Center for Environmental Science, will continue to be explored.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE
Marine Mammals	C	All vessels will maintain a minimum separation distance of 100 m (328 ft) or greater from any sighted non-delphinid cetacean other than the NARW. If a non-delphinid cetacean is sighted within this exclusion zone while underway, the vessel operator would immediately reduce speed and promptly shift the engine to neutral. The vessel operator would not engage the engines until the non-delphinid cetacean has moved beyond 100 m (328 ft). If the vessel is stationary, the operator would not engage engines until the non-delphinid cetacean has moved beyond 100 m (328 ft).	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, NMFS
Marine Mammals	C	All vessels will maintain a minimum separation distance of 50 m (164 ft) or greater from any sighted delphinid cetacean or pinniped, except if the mammal approaches the vessel. If a delphinid cetacean or pinniped approaches an underway vessel, the vessel would avoid excessive speed or abrupt changes in direction to avoid injury to these organisms. Additionally, vessels underway may not divert to approach any delphinid cetacean or pinniped.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, NMFS
Marine Mammals	C	All vessels will maintain a minimum separation distance of 500 m (1,640 ft) or greater from any sighted NARW. If a NARW is sighted within this exclusion zone while underway, the vessel would steer a course away from the whale at 10 knots (18.5 km/hr) or less until the 500 m (1,640 ft) minimum separation distance has been established. If a NARW is sighted within 100 m (328 ft) of an underway vessel, the vessel operator would immediately reduce speed and promptly shift the engine to neutral. If the vessel is stationary, the operator would not engage engines until the NARW has moved beyond 100 m (328 ft).	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, NMFS
Marine Mammals	C	PSOs or trained observers will be present on crew vessels and other project vessels.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, NMFS
Marine Mammals	C	The Metocean Buoy includes acoustic recorders that are focused on detecting odontocete cetacean calls.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE
Marine Mammals	O&M	US Wind will compile a comprehensive wildlife survey and observation information database to include surveys, PSO data, and other wildlife monitoring records. Data will be made available to government, research, and environmental groups, among others. Information is provided on the following website: Remote Marine and Onshore Technology.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, NMFS
Marine Mammals	C	US Wind will continue to evaluate technologies that may increase the ability to detect marine mammals from vessels, such as thermal detection technologies.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE
Marine Mammals	C	US Wind will ensure that from November 1 through April 30, vessel operators monitor NMFS NARW reporting systems (e.g., Early Warning System, Sighting Advisory System, and Mandatory Ship Reporting System) for the presence of NARWs.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, NMFS
Marine Mammals	C	Vessels 19.8 m (65 ft) or larger will operate at 10 knots or less in NARW Special Management Areas (SMAs). Additionally, all vessels would operate at speeds of 10 knots or less in Right Whale Slow Zones, identical to Dynamic Management Areas (DMAs), to protect visually or acoustically detected NARW. US Wind will incorporate the proposed revision to the NARW vessel speed rule for vessels 10.6-19.8 m (35-65 ft) in length upon implementation.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, NMFS
Multiple resources	C	Prepare an MEC/UXO Emergency Risk Management Plan prior to construction.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE
Multiple resources	C	Prior to construction activities, provide an MEC/UXO awareness briefing to vessel crews.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE
Multiple resources	C	Prior to construction, analyze survey data at installation locations to identify potential MEC/UXO and plan avoidance or clearance in line with industry best practices. US Wind would avoid MEC/UXO through micro-siting, and if avoidance is not possible, by lifting and shifting a MEC/UXO. US Wind is not proposing detonation or deflagration of UXO, or disposal at particular sites.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE
Navigation and Vessel Traffic	O&M	A proposed 1 nmi (1.9 km) buffer zone between Project structures and the TSS outer boundary.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USCG

Resource Area Mitigated	Project Stage*	Mitigation and Monitoring Measures	Source	Anticipated Enforcing Agency
Other Uses (Marine Minerals, Military and National Security Uses, Aviation and Air Traffiic, Radar Systems, Scientific Research, Surveys and Search and Rescue)	C	Route Offshore Export Cable Corridors to avoid marine mineral resources areas to the extent practicable.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE
Other Uses (Marine Minerals, Military and National Security Uses, Aviation and Air Traffiic, Radar Systems, Scientific Research, Surveys and Search and Rescue)	O&M	Lighting and marking will be implemented following guidelines as practicable and in consultation with FAA, BOEM, USCG and other regulatory agencies.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USCG
Other Uses (Marine Minerals, Military and National Security Uses, Aviation and Air Traffiic, Radar Systems, Scientific Research, Surveys and Search and Rescue)	O&M	US Wind commits to use ADLS if commercially feasible and approved by BOEM in consultation with FAA, USCG and other agencies. Use of ADLS would reduce nighttime obstruction lighting by 99% compared to not using ADLS. An FAA-approved vendor will be used to implement the ADLS for the Project, which is feasible per Chapter 10 of the updated Marking and Lighting Advisory Circular (70/7460-1M, November 2020).	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USCG
Other Uses (Marine Minerals, Military and National Security Uses, Aviation and Air Traffiic, Radar Systems, Scientific Research, Surveys and Search and Rescue)	O&M	Meteorological and ocean observations from the Met Tower will be made available to the public.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE
Other Uses (Marine Minerals, Military and National Security Uses, Aviation and Air Traffiic, Radar Systems, Scientific Research, Surveys and Search and Rescue)	O&M	Uniform spacing of WTGs and OSSs of 1.02 NM (1.89 km) N/S and 0.77 NM (1.43 km) E/W	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USCG
Navigation and Vessel Traffic	C	Coordinate with the appropriate regulatory agencies and other stakeholders during construction to provide timely and effective communications regarding planned vessel movements and construction activities.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USCG
Navigation and Vessel Traffic	C	Use existing transit lanes for construction and maintenance vessels to the extent practicable.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USCG
Other Uses (Marine Minerals, Military, Aviation, Scientific Research, and Surveys)	C	Develop emergency procedures for potential vessel allisions with Project structures and other maritime emergencies, such as search and rescue, in consultation (e.g., coordinated drills) with relevant agencies and stakeholders. Establish appropriate chain of command with US Coast Guard and Maryland Department of Natural Resources to respond to emergencies in a timely, efficient manner and address ongoing issues. Procedures and potential equipment packages to benefit mariners, e.g., WTG cameras or data connectivity enhancements, will be developed through stakeholder outreach.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USCG
Other Uses (Marine Minerals, Military, Aviation, Scientific Research, and Surveys)	O&M	Develop emergency procedures for potential vessel allisions with Project structures and other maritime emergencies, such as search and rescue, in consultation (e.g., coordinated drills) with relevant agencies and stakeholders. Establish appropriate chain of command with US Coast Guard and Maryland Department of Natural Resources to respond to emergencies in a timely, efficient manner and address ongoing issues. Procedures and potential equipment packages to benefit mariners, e.g., WTG cameras or data connectivity enhancements, will be developed through stakeholder outreach.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USCG

Resource Area Mitigated	Project Stage*	Mitigation and Monitoring Measures	Source	Anticipated Enforcing Agency
Other Uses (Marine Minerals, Military, Aviation, Scientific Research, and Surveys)	C	Work with USCG to establish and maintain safety zones around active construction areas, and mark areas with highly visible marking and lighting.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USCG
Other Uses (Marine Minerals, Military, Aviation, Scientific Research, and Surveys)	O&M	Monitor Project operations continuously and maintain Project emergency contact channels with the USCG and other relevant agencies and stakeholders.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USCG
Other Uses (Marine Minerals, Military, Aviation, Scientific Research, and Surveys)	C	Route Offshore Export Cable Corridors to avoid USCG proposed anchorage.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USCG
Other Uses (Marine Minerals, Military, Aviation, Scientific Research, and Surveys)	O&M	Bury submarine cables at least 6.6 feet (2 meters) below the authorized depth of any state or federal navigation channel or any waterway used for navigation. If the existing bottom is deeper than the authorized depth, then the cables shall be buried at least 6.6 feet (2 meters) below existing depth.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USCG
Other Uses (Marine Minerals, Military, Aviation, Scientific Research, and Surveys)	O&M	US Wind will work with the USCG to identify measures that may increase mariner and responder situational awareness in the vicinity of the Lease area such as cameras, distinct markings on towers, and enhanced communication connectivity.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USCG
Other Uses (Marine Minerals, Military, Aviation, Scientific Research, and Surveys)	O&M	Use existing transit lanes for construction and maintenance vessels to the extent practicable.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USCG
Recreation and Tourism	O&M	US Wind will implement practices and operating procedures to reduce the likelihood of vessel accidents and fuel spills. An Oil Spill Response Plan (OSRP) has been prepared and will be implemented for construction and for operations activities.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USEPA
Recreation and Tourism	C	US Wind will concentrate onshore construction activities outside of the summer recreation season to the greatest extent practicable and will coordinate with DNREC Parks and Recreation to minimize interference with beach activities.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE
Recreation and Tourism	C	US Wind will coordinate with local stakeholders to develop opportunities for eco-tourism related to the Project.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE
Recreation and Tourism	O&M	US Wind will coordinate with local stakeholders to develop opportunities for eco-tourism related to the Project.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE
Sea Turtles	C	Vessel operators, employees, and contractors will be briefed on marine trash and debris awareness elimination as described in BSEE NTL No. 2015-G03 (“Marine Trash and Debris Awareness and Elimination”), per BOEM guidelines for marine trash and debris prevention.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, NMFS
Sea Turtles	C	US Wind will locate cable landfalls and onshore facilities so as to avoid impacts to known nesting beaches, where feasible. The use of HDD for cable installation under the Barrier Beach Landfalls will avoid impacts on beaches.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, NMFS
Sea Turtles	C	Vessels will adhere to United States Coast Guard (USCG) guidelines; follow applicable regulations related to the discharge of bilge water, gray water, and sanitary waste; maintain discharge permits, as appropriate; follow good maintenance and housekeeping procedures to prevent releases of oil and other chemicals to the sea; maintain up-to-date Oil Spill Response Plans (OSRPs) to prevent, contain, and clean up any accidental spills.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, NMFS
Sea Turtles	O&M	Conduct a site-specific study of potential EMF impacts on electrosensitive marine organisms.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, NMFS
Sea Turtles	O&M	Submarine cables that have electrical shielding will be used and the cables will be buried in the seafloor, where practicable.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, NMFS
Sea Turtles	C	Construction is anticipated to occur outside of turtle nesting season. Agency consultation and monitoring will be conducted as needed to mitigate disturbances.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, NMFS, USFWS
Sea Turtles	C	Additional restrictions on pile-driving will include: no simultaneous pile-driving; no more than one monopile driven per day; daylight pile-driving only unless health and safety issues require completion of a pile; and initiation will not begin within 1.5 hours of civil sunset or in times of low visibility when the visual clearance zone and exclusion zone cannot be visually monitored, as determined by the lead PSO on duty.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, NMFS
Sea Turtles	C	Establish a clearance zone prior to pile driving using visual monitoring for sea turtles. Once clearance zone is confirmed clear of protected species, pile-driving will begin with minimum hammering at low energy for no less than 30 minutes (soft-start).	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, NMFS

Resource Area Mitigated	Project Stage*	Mitigation and Monitoring Measures	Source	Anticipated Enforcing Agency
Sea Turtles	C	Establish an exclusion zone using visual monitoring for sea turtles. Pile-driving will be halted if species enters defined exclusion zone, with exceptions for health and safety considerations as well as technical feasibility.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, NMFS
Sea Turtles	C	Consistent with the anticipated NMFS requirements for an LOA, US Wind will implement at least two functional noise abatement systems, such as double bubble curtains and nearfield attenuation devices, to reduce noise levels to the modeled harassment isopleths, assuming 10-dB attenuation, during all impact pile driving for monopile foundations.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, NMFS
Sea Turtles	C	Visual clearance and exclusion zones will be monitored by PSOs which are individuals with a current NMFS approval letter as a PSO.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, NMFS
Sea Turtles	C	Per DNREC's recommendation, US Wind would avoid in water work between Hickory Cove and the US Wind substation, i.e., in Indian River, between November 15 and March 1 to avoid impacts to hibernating terrapins in this area. Should work be necessary prior to March 1, DNREC suggests BMPs be implemented such as diver surveys to look for hibernating terrapins.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, DNREC
Sea Turtles	C	Trained observers will be present on crew vessels and other project vessels without PSOs.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, NMFS
Sea Turtles	C	US Wind will compile a comprehensive wildlife survey and observation information database to include surveys, PSO data, and other wildlife monitoring records. Data will be made available to government, research, and environmental groups, among others. Information is provided on the following website: Remote Marine and Onshore Technology.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, NMFS
Sea Turtles	C	Vessels will observe NMFS collision avoidance guidance, such as establishing minimum separation distances from sea turtles.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, NMFS
Visual Resources	O&M	All offshore and onshore export cables are planned to be buried, or in locations where burial may not be achievable, protected to the greatest extent practicable.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USACE
Visual Resources	O&M	Onshore cables and facilities at the Barrier Beach Landfalls will be buried.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USACE
Visual Resources	O&M	Submarine cables will be buried and regularly inspected to maintain cable burial.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USACE
Visual Resources	O&M	Lighting and marking will be implemented following guidelines as practicable and in consultation with FAA, BOEM, USCG and other regulatory agencies.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USCG
Visual Resources	O&M	The Project will minimize aviation lighting impacts, such as aiming lighting downward and using the longest permissible off cycles, in consultation with the FAA and BOEM.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE
Visual Resources	O&M	US Wind commits to use ADLS if commercially feasible and approved by BOEM in consultation with FAA, USCG and other agencies. An FAA-approved vendor will be used to implement the ADLS for the Project, which is feasible per Chapter 10 of the updated Marking and Lighting Advisory Circular (70/7460-1M, November 2020).	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USCG
Visual Resources	O&M	The design and installation of artificial night lighting at the Operations and Maintenance facility will use sustainable outdoor lighting specifications that minimize impact to natural night skies while providing a safe work environment in accordance with local, state, and federal regulations. Sustainable night lighting practices are not intended to conflict with or supersede artificial night lighting requirements to secure a safe nighttime work environment for onshore support of offshore wind energy of activities. Sources for more information on night sky sensitive lighting practices may be drawn from the National Park Service Sustainable Outdoor Lighting best practices, the BLM's Night Sky and Dark Environments: Best Management Practices for Artificial Light at Night on BLM-Managed Lands (Night Sky and Dark Environments: Best Management Practices for Artificial Light at Night on BLM-Managed Lands), among other industrial lighting and safety standards literature.	COP, Volume II, Appendix II-J1, Section 6.0 (US Wind 2024)	BSEE, USCG
Visual Resources	O&M	Use an FAA-recommended paint color that is not pure white (RAL 90) for any WTG components visible from shore. The WTG paint color will be determined in consultation with BOEM, FAA, and USCG.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE
Visual Resources	O&M	Uniform spacing of WTGs and OSSs.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USCG
Visual Resources	O&M	WTGs, OSSs, and the Met Tower will be marked per USCG guidelines in consultation with USCG, BOEM and other regulatory agencies as appropriate.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USCG
Visual Resources	O&M	US Wind will coordinate with BOEM to prepare and implement a scenic and visual resource monitoring plan that monitors and compares the visual effects of the wind farm during construction and operations/maintenance (daytime and nighttime) to the findings in this assessment and verifies the accuracy of the visual simulations (photo and video). This would include the monitoring of meteorological influences on turbine visibility and the frequency of ADLS activations.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USCG
Water Quality	C	Project-specific Spill Prevention, Control, and Countermeasure (SPCC) Plan and Oil Spill Response Plan (OSRP) will be prepared prior to construction and for operations activities.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE
Water Quality	O&M	Project-specific Spill Prevention, Control, and Countermeasure (SPCC) Plan and Oil Spill Response Plan (OSRP) will be prepared prior to construction and for operations activities.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE

Resource Area Mitigated	Project Stage*	Mitigation and Monitoring Measures	Source	Anticipated Enforcing Agency
Water Quality	C	US Wind will develop a Stormwater Pollution Prevention Plan (SWPPP) for onshore construction activities, as appropriate.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USEPA
Water Quality	O&M	US Wind will develop a Stormwater Pollution Prevention Plan (SWPPP) for onshore construction activities, as appropriate.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USEPA
Water Quality	C	US Wind will monitor for and report any environmental release or fish kill to the appropriate authorities, e.g., in Delaware state waters, reports will be made via DNREC 24-hour hotline.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USEPA, DNREC
Water Quality	O&M	US Wind will monitor for and report any environmental release or fish kill to the appropriate authorities, e.g., in Delaware state waters, reports will be made via DNREC 24-hour hotline.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USEPA, DNREC
Water Quality	C	Vessel operators, employees, and contractors will be briefed on marine trash and debris awareness elimination as described in BSEE NTL No. 2015-G03 ("Marine Trash and Debris Awareness and Elimination"), per BOEM guidelines for marine trash and debris prevention.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE
Water Quality	O&M	Vessel operators, employees, and contractors will be briefed on marine trash and debris awareness elimination as described in BSEE NTL No. 2015-G03 ("Marine Trash and Debris Awareness and Elimination"), per BOEM guidelines for marine trash and debris prevention.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE
Water Quality	C	Based on feedback from DNREC, US Wind will implement the following time of year restrictions to minimize impacts of sediment disturbance, including: • No in-water work (e.g., cable installation, HDDs, dredging) within Indian River Bay between March 1 and September 30, and • No HDD activities in the Atlantic to the beach landfall from April 1 through September 15 (inclusive of recreational period avoidance May 15 through September 15) to avoid impacts.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, DNREC
Water Quality	C	Sediment disturbance associated with submarine cable laying will be minimized by jet plowing, HDD techniques and the use of gravity cells where feasible.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USACE
Water Quality	C	Turbidity monitoring will be conducted during construction as required by the permitting authorities. Conduct TSS and water quality monitoring during cable installation activities and post installation as needed.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USACE
Water Quality	C	A drilling fluid fracture contingency plan will be in place prior to the start of HDD activities. Operations will be shut down immediately in the event a frac-out occurs.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USACE
Water Quality	C	Vessels will adhere to United States Coast Guard (USCG) guidelines; follow applicable regulations related to the discharge of bilge water, gray water, and sanitary waste; maintain discharge permits, as appropriate; follow good maintenance and housekeeping procedures to prevent releases of oil and other chemicals to the sea; maintain up-to-date Oil Spill Response Plans (OSRPs) to prevent, contain, and clean up any accidental spills.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USCG
Water Quality	O&M	Vessels will adhere to United States Coast Guard (USCG) guidelines; follow applicable regulations related to the discharge of bilge water, gray water, and sanitary waste; maintain discharge permits, as appropriate; follow good maintenance and housekeeping procedures to prevent releases of oil and other chemicals to the sea; maintain up-to-date Oil Spill Response Plans (OSRPs) to prevent, contain, and clean up any accidental spills.	COP, Volume II, Section 1.5 (US Wind 2024)	BSEE, USCG
Wetlands	C	Installation of cables underneath tidal marshes will not be conducted during nesting season between April 1 through July 31. Turbidity monitoring will be conducted during construction as required by the permitting authorities. Conduct TSS and water quality monitoring during cable installation activities and post installation as needed. Additionally, US Wind will develop a Stormwater Pollution Prevention Plan (SWPPP) for onshore construction activities, as appropriate.	COP, Volume II, Section 1.5 (US Wind 2024)	DNREC
Wetland	C	Due to the proximity of interdunal swales in the proximity of the Barrier Beach Landfall, per DNREC's recommendation, US Wind will implement a time of year restriction for all artificial lighting at night from June 1 to September 1 to minimize impacts to Bethany Beach Firefly. Additionally, no alternations to dune topography or woody vegetation during this time period within 100 feet of interdunal swales to minimize light pollution to these sensitive species. Turbidity monitoring will be conducted during construction as required by the permitting authorities. Conduct TSS and water quality monitoring during cable installation activities and post installation as needed. Additionally, US Wind will develop a Stormwater Pollution Prevention Plan (SWPPP) for onshore construction activities, as appropriate.	COP, Volume II, Section 1.5 (US Wind 2024)	USACE, DNREC

*C = Construction; O&M = Operations and Maintenance

ADLS = aircraft detection lighting system; BOEM = Bureau of Ocean Energy Management; BSEE = Bureau of Safety and Environmental Enforcement; CFR = Code of Federal Regulations; COP = Construction and Operations Plan; DNREC = Department of Natural Resources and Environmental Control; EFH= essential fish habitat; EMF= electromagnetic field; EPA = Environmental Protection Agency; FAA = Federal Aviation Administration; HAPC = habitat area of particular concern; HDD = horizontal directional drilling; HRG = high-resolution geophysical; IHA = Incidental Harassment Authorization; IMO = International Maritime Organization; IPF = impact producing factor; LOA = Letter of Authorization; MBE = Minority Business Enterprise; MEC = munitions and explosives of concern; NARW = North Atlantic right whale; NMFS = National Marine Fisheries Service; NTL = Notice to Lessees; OSS = Offshore Substation; PSO = Protected species observer; SHPO = State Historic Preservation Officer; TSS = Traffic Separation Scheme; USCG = U.S. Coast Guard; UXO = unexploded ordnance; WTG = wind turbine generator

Table G-2. Mitigation and monitoring measures resulting from consultations

Resource Area Mitigated	Project Stage*	Mitigation and Monitoring Measures	Source	Anticipated Enforcing Agency
Birds	C, O&M, D	Lessees must report all injured or dead birds and bats found on vessels and structures during construction, operations, and decommissioning to the Injury & Mortality Reporting (IMR) system (Injury and Mortality Reporting) following a standardized template and workflow protocols (including photographs of carcasses to be uploaded to IMR) by BOEM and the Service, ideally no more than 72 hours after the sighting. Any identified causes (e.g., lighting) should be rectified to the extent practicable. The Lessee must submit an annual report covering each calendar year, due by January 31 of the following year, documenting any dead (or injured) birds or bats found on vessels and structures during construction, operations, and decommissioning. The report must be submitted to BOEM (at renewable_reporting@boem.gov) USFWS, and BSEE (at protectedspecies@bsee.gov and through TIMSWeb). The report must contain the following information: the name of species, date found, location, a picture to confirm the species' identity (if possible), and any other relevant information. Carcasses with federal or research bands must be reported to the USGS Bird Band Laboratory (Bird Banding Laboratory).	BOEM proposed measure in the FWS BA	BSEE, USFWS
Birds, Bats	C, O&M, D	Any occurrence of dead or injured ESA-listed birds or bats must be reported to BOEM, BSEE, and USFWS as soon as practicable (taking into account crew and vessel safety), but no later than 24 hours after the sighting, and if practicable, carefully collect the dead specimen and preserve the material in the best possible state.	BOEM proposed measure in the USFWS BA	BSEE, USFWS
Birds	O&M	Use bird-deterrent devices during operation. To minimize attracting birds to operating WTGs, the Lessee must install bird-deterrent devices on WTGs and the OSSs. The location of bird-deterrent devices must be proposed by the Lessee based on BMPs applicable to the appropriate operation and safe installation of the devices. US Wind must confirm the locations of bird deterrent devices with a monitoring plan to track the efficacy of the deterrents as part of the documentation it must submit with its facility design report. BOEM has been requiring that Lessees provide the monitoring plan with the submission of the FDR after the COP is approved.	BOEM proposed measure in the USFWS BA	BSEE, USFWS

Resource Area Mitigated	Project Stage*	Mitigation and Monitoring Measures	Source	Anticipated Enforcing Agency
Birds, Bats	C, O&M	Prior to, or concurrent with, offshore construction activities, including seabed preparation activities, US Wind must complete, obtain written concurrence from the BOEM and USFWS, and adopt an avian and bat monitoring plan, including coordination with interested stakeholders. The BOEM and USFWS will review the avian and bat monitoring plan and provide any comments on the plan within 60 calendar days of its submittal. US Wind must resolve all comments on the avian and bat monitoring plan to DOI's satisfaction before implementing the plan. US Wind may conclude that DOI has concurred in the avian and bat monitoring plan if DOI provides no comments on the plan within 60 calendar days of its submittal date. At this time, US Wind is proposing to conduct acoustic monitoring at select WTGs and/or OSSs, implement a radio tagging and telemetry program in coordination with the Motus Wildlife Tracking System (Motus) following the recommendations and workflows in the offshore Motus protocols (Development of Monitoring Protocols and Guidance for Automated Radio Telemetry Studies at Offshore Wind Farms) during the operational lifetime of the offshore wind lease to help address the need for consistent, long-term monitoring data. In addition, deploy satellite-based tracking technologies (e.g., Global Positioning System [GPS] or Argos tags in focal species. The specific monitoring components will be dependent upon research priorities and available technologies and developed as part of consultation with BOEM and USFWS. Under this condition the Lessee must allow for: • Annual Monitoring Reports. The Lessee must submit to BOEM (at renewable_reporting@boem.gov) and BSEE (at protectedspecies@bsee.gov and TIMSWeb) a comprehensive report after each full year of monitoring (pre- and post-construction) within 6 months of completion of the last avian survey. The report must include all data, analyses, and summaries regarding ESA-listed and non- ESA-listed birds and bats. DOI will use the annual monitoring reports to assess the need for adjustments and revisions (based on subject matter expert analysis) to the Avian and Bat Monitoring Plan. DOI reserves the right to require adjustments and revisions to the Avian and Bat Monitoring Plan and may require new technologies as they become available for use in offshore environments. • Post-Construction Quarterly Progress Reports. The Lessee must submit quarterly progress reports during the implementation of the Avian and Bat Monitoring Plan to BOEM (at renewable_reporting@boem.gov), BSEE (at protectedspecies@bsee.gov and TIMSWeb), and USFWS by the 15th day of the month following the end of each quarter during the first full year that the Project is operational. The progress reports must include a summary of all work performed, an explanation of overall progress, and any technical problems encountered. • Monitoring Plan Revisions. Within 15 calendar days of submitting the annual monitoring report, the Lessee must meet with BOEM and USFWS to discuss the following: the monitoring results; the potential need for revisions to the Avian and Bat Monitoring Plan, including technical refinements or additional monitoring; and the potential need for any additional efforts to reduce impacts. If DOI determines after this discussion that revisions to the Avian and Bat Monitoring Plan are necessary, DOI may require the Lessee to modify the Avian and Bat Monitoring Plan. If the reported monitoring results deviate substantially from the impact analysis included in the Final EIS, the Lessee must transmit to DOI recommendations for new mitigation measures or monitoring methods. • Operational Reporting (Operations). The Lessee must submit to BOEM (at renewable_reporting@boem.gov) and BSEE (at protectedspecies@bsee.gov and TIMSWeb) an annual report with the following monthly operational data in tabular format: the proportion of time the turbines were operational (spinning at or above a threshold of rpm defined as part of consultation with BOEM, BSEE, and USFWS) each month, the average rotor speed (monthly revolutions per minute [rpm]) of spinning turbines plus 1 standard deviation, and the average pitch angle of blades (degrees relative to rotor plane) plus 1 standard deviation. DOI will use this information as inputs for avian collision risk models to assess whether the results deviate substantially from the impact analysis included in the Final EIS. • Raw Data. The Lessee must store the raw data from all avian and bat surveys and monitoring activities according to accepted archiving practices (including timing, storage, metadata, and format) developed in coordination with USFWS and clearly specified in the monitoring plan. Such data must remain accessible to DOI and USFWS upon request for the duration of the Lease. The Lessee must work with BOEM to ensure the data are publicly available. The USFWS may specify third-party data repositories that must be used, such as the Motus Wildlife Tracking System or MoveBank, and such parties and associated data standards may change over the duration of the monitoring plan.	BOEM proposed measure in the USFWS BA	BSEE, USFWS
Birds, Bats	C, O&M	Lessee must use an FAA-approved vendor for the ADLS, which will activate the FAA hazard lighting only when an aircraft is in the vicinity of the wind facility to reduce visual impacts at night. US Wind must confirm the use of an FAA-approved vendor for ADLS on WTGs and OSSs in US Wind's fabrication and installation report.	BOEM proposed measure in the USFWS BA	BSEE

Resource Area Mitigated	Project Stage*	Mitigation and Monitoring Measures	Source	Anticipated Enforcing Agency
Birds,	C, O&M	1. *Wind Turbine Generator Configuration and Maintenance* a. Lessee will ensure that the WTGs provide an air gap (minimum blade tip elevation to the sea surface) to minimize collision risk to birds (e.g., roseate terns) that may fly close to the ocean surface. b. To minimize the attraction of birds to operating WTGs, Lessee will install bird-perching deterrent devices on WTGs and OSSs to the maximum extent practicable. c. Lessee will submit for BOEM, BSEE, and Service review, and for BOEM and BSEE approval, a Bird Deterrent Plan to discourage perching on offshore infrastructure by birds. Prior to approval of the plan, BOEM and BSEE will address all Service comments. The Bird Deterrent Plan will include the type(s) and locations of bird perching-deterrent devices, include a maintenance plan for the life of the projects, allow for modifications and updates as new information and technology become available, and track the efficacy of the deterrents. The Bird Deterrent Plan will be based on best available science regarding the effectiveness of perching deterrent devices on minimizing collision risk. The location of bird-deterrent devices will be proposed by Lessee based on best management practices applicable to the appropriate operation and safe installation of the devices. A draft Bird Deterrent Plan will be submitted at least 90 days before the start of WTG construction, and a final plan will be approved at least 30 days before the start of construction.	Conservation measure in the BiOp issued by USFWS on May 31, 2024	BOEM, BSEE, USFWS
Birds	C, O&M	2. *Offshore Lighting* While complying with all Federal Aviation Administration (FAA), U.S. Coast Guard (USCG), and BOEM lighting, marking and signage requirements: a. Lessee will limit lighting during offshore operations to the minimum required by regulation and for safety, minimizing the potential for any light driven attraction of birds. b. b. Lessee will use red flashing FAA lights on the WTGs instead of constant white light, to reduce further bird attraction, and will use an Aircraft Detection Lighting System (ADLS) to significantly reduce the number of hours FAA lighting will be illuminated. Lessee will use an FAA-approved vendor for the ADLS, which will activate the FAA hazard lighting only when an aircraft is in the vicinity of the wind facility to reduce visual impacts at night. Lessee will confirm the use of an FAA-approved vendor for ADLS on WTGs and OSSs in the Fabrication and Installation Report. c. Lessee will use yellow flashing marine navigation lights on the WTGs, instead of constant white light, to reduce further bird attraction, and will use down lighting and down shielding to the maximum extent practicable. Lessee will light each WTG and OSS in a manner that is visible by mariners in a 360-degree arc around the structure. To minimize the potential of attracting migratory birds, the top of each light will have existing shielding to minimize upward illumination.	Conservation measure in the BiOp issued by USFWS on May 31, 2024	BOEM, BSEE, USFWS
Birds	C	3. *Onshore Project Siting* Lessee will locate onshore project elements, such as cable landfalls, cable infrastructure, onshore facilities, construction laydown areas and access roads, in previously disturbed areas, where feasible, to avoid impacts to nesting beaches.	Conservation measure in the BiOp issued by USFWS on May 31, 2024	USFWS
Birds	C	4. *Horizontal Direction Drilling* Lessee will utilize horizontal directional drilling (HDD) for cable installation to avoid impacts to nesting beaches.	Conservation measure in the BiOp issued by USFWS on May 31, 2024	USACE, USFWS
Bats, Birds	C, O&M	5. *Onshore Lighting* Lessee will minimize lighting-related impacts by using best management practices, where feasible. Examples of best management practices to minimize the adverse impacts of artificial onshore lighting will include not lighting the onshore facility at night except in the case of an emergency that requires an immediate response, and the use of down-shielded light fixtures to reduce the visibility of light by birds, bats, and insects flying above the facility.	Conservation measure in the BiOp issued by USFWS on May 31, 2024	USFWS
Birds, Invertebrates	C	6. *Work In Benthic Habitats* To minimize impacts to spawning horseshoe crabs, which are a food source for rufa red knots in the Delaware Bay region, Lessee will implement the following work windows: • No in-water work (e.g., cable installation, HDDs, dredging) in Indian River Bay and Atlantic beach landfall from March 1 through September 30. • No onshore, land-based HDD activities at the Atlantic beach landfall from April 15 through September 30.	Conservation measure in the BiOp issued by USFWS on May 31, 2024	USACE, USFWS

Resource Area Mitigated	Project Stage*	Mitigation and Monitoring Measures	Source	Anticipated Enforcing Agency
Birds	C, O&M	7. *Compensatory Mitigation* At least 180 days prior to the start of commissioning of the first WTG, Lessee would distribute a Compensatory Mitigation Plan for piping plovers, rufa red knot, and roseate tern to BOEM, BSEE, and the Service for review and comment. BOEM, BSEE, and the Service would review the Compensatory Mitigation Plan and provide any comments on the plan to the Lessee within 60 days of its submittal. Lessee would be required to resolve all comments on the Compensatory Mitigation Plan to BOEM, BSEE, and the Service's satisfaction before implementing the Plan and before commissioning of the first WTG. The Compensatory Mitigation Plan would provide compensatory mitigation actions to fully offset the impact of the incidental take of piping plover, rufa red knot, and roseate tern. The Compensatory Mitigation Plan would require that the compensatory mitigation be implemented by the fifth year of WTG operation. The Compensatory Mitigation Plan would include: (1) a quantification of the level of offsets to fully offset the impact of the incidental take expressed in the ITS, based on scientifically recognized techniques and methodologies for each of the impacted species; piping plover, rufa red knot, and the roseate tern. (2) detailed description of the mitigation actions for each species (e.g., nest protection, predator control, habitat enhancement or restoration, etc.). • Piping plover examples: Habitat enhancement, predator control, reduction of disturbance at wintering sites, etc. • Rufa red knot examples: habitat restoration, reduce displacement from peregrine falcons, red tide rehabilitation, etc. • Roseate tern examples: habitat maintenance or restoration at nesting colonies, establishment of buffer zones around staging areas, etc. (3) the specific location for each mitigation action. (4) a timeline for completion of the mitigation measures. (5) details of the mitigation mechanisms (e.g., conservation bank, in-lieu fee, applicant-proposed mitigation). (6) best available science linking the compensatory mitigation action(s) to the projected level of collision mortality; and (7) monitoring and reporting to ensure the effectiveness of the mitigation actions in offsetting take. Every 5 years for the life of the project, and as detailed below, BOEM would coordinate with BSEE, the Service, and Lessee to assess the effectiveness of compensatory mitigation for collisions of piping plover, rufa red knot, and roseate tern with the Maryland Offshore Wind WTGs. • BOEM would take the lead in coordinating this effort with the appropriate state and federal agencies. • Mitigation assessments would include, at a minimum: implementation status; monitoring plan and data, status, and results; and adaptive management plans for the following 5 years. • Additional mitigation assessments (addressing minimization and/or compensatory mitigation) may be carried out at any time upon request by BOEM, BSEE, the Service, or Lessee, based on new information or changed circumstances. These periodic mitigation assessments for Maryland Offshore Wind may eventually be integrated into a regional or coastwide adaptive monitoring and impact minimization framework.	Conservation measure in the BiOp issued by USFWS on May 31, 2024	BOEM, BSEE, USFWS
Birds	O&M	8. *Collision Risk Model Support* BOEM has funded the development of a Stochastic Collision Risk Assessment for Movement (SCRAM, Adams et al. 2022), which builds on and improves earlier collision risk modeling frameworks. The Service fully supports SCRAM as a scientifically sound method for integrating best available information to assess collision risk for the three listed bird species addressed in this Opinion. The first phase, SCRAM version 1.0.3, was released in early 2023 and the model results reflect a number of consequential data gaps and uncertainties. BOEM released SCRAM v2.0.3 (Gilbert et al. 2022) for use in May 2024. We expect that the current limitations of SCRAM will decrease substantially over time as more tracking data are incorporated into the model (e.g., from more individual birds tagged in more geographic areas, improved bird tracking capabilities, and emerging tracking technologies). Via this Conservation Measure, BOEM commits to continue funding the refinement and advancement of SCRAM, or its successor, with the goal of continually improving the accuracy and robustness of collision mortality estimates. This commitment is subject to the allocation of sufficient funds to BOEM from Congress. This commitment will remain in effect until one of the following occurs: i. The Maryland Offshore Wind Project ceases operation; ii. BOEM determines, and the Service concurs, that a robust weight of evidence has demonstrated that collision risks to all three listed birds from Maryland Offshore Wind WTG operation are discountable; or iii. iii. BOEM determines, and the Service concurs, that further development of SCRAM (or its successor) is unlikely to improve the accuracy or robustness of collision mortality estimates.	Conservation measure in the BiOp issued by USFWS on May 31, 2024	BOEM, USFWS

Resource Area Mitigated	Project Stage*	Mitigation and Monitoring Measures	Source	Anticipated Enforcing Agency
Birds	O&M	9. *Collision Risk Model Utilization* BOEM will work cooperatively with the Service to re-run the Band (2012) Annex 6 model and SCRAM model (or its successor) for the Maryland Offshore Wind project according to the following schedule: • At least annually for the first 3 years of WTG operation. • At least every other year for years 4 to 10 of WTG operation (i.e., years 4, 6, 8, and 10). • At least every 5 years between year 10 and the termination of WTG operation (i.e., years 15, 20, 25, and 30). Between these regularly scheduled model runs, BOEM will also re-run the Band (2012) model and SCRAM model (or its successor) within 90 days of each major model release or update, and at any time upon request by the Service or Lessee, and at any time as desired by BOEM. Prior to each model run, BOEM and the Service will reach agreement on model inputs based on best available science. The above schedule may be altered upon the mutual agreement of BOEM and the Service. The schedule is subject to sufficient allocation of funds to BOEM from Congress. This commitment will remain in effect until one of the following occurs: i. The Maryland Offshore Wind Project ceases operation; ii. BOEM determines, and the Service concurs, that a robust weight of evidence has demonstrated that collision risks to all three listed birds from the Maryland Offshore Wind WTG operation are discountable; or iii. iii. BOEM determines, and the Service concurs, that further model runs are unlikely to improve the accuracy or robustness of collision mortality estimates.	Conservation measure in the BiOp issued by USFWS on May 31, 2024	BOEM, USFWS

Resource Area Mitigated	Project Stage*	Mitigation and Monitoring Measures	Source	Anticipated Enforcing Agency
Bats, Birds	O&M	10. *Monitoring and Data Collection* BOEM will require that the Lessee develops and implements an Avian and Bat Post-Construction Monitoring Plan in coordination with the Service, Delaware Department of Natural Resources and Environmental Control (DNREC), Maryland Department of Natural Resources (MDNR), and other relevant regulatory agencies. Annual monitoring reports will be used to determine the need for adjustments to monitoring approaches, consideration of new monitoring technologies, and/or additional periods of monitoring. Prior to commencing offshore construction activities, Lessee must submit an Avian and Bat Post-Construction Monitoring Plan for BOEM, BSEE, and Service review. BOEM, BSEE, and the Service will review the Avian and Bat Post-Construction Monitoring Plan and provide any comments on the plan within 30 calendar days of its submittal. The Lessee will resolve all comments on the Avian and Bat Post-Construction Monitoring Plan to BOEM, BSEE, and the Service's satisfaction before implementing the plan and prior to the start of WTG operations. The objectives of the monitoring plan will include: (1) to advance understanding of how the target species utilize the offshore airspace and do (or do not) interact with the wind farm; (2) to improve the collision estimates from SCRAM (or its successor) for the three listed bird species; and (3) to inform any efforts aimed at minimizing collisions or other project effects on target species. a. Monitoring. Lessee will conduct monitoring as outlined in the Maryland Offshore Wind Bird and Bat Monitoring Framework. The Avian and Bat Post-Construction Monitoring Plan will allow for changing methods over time (see Conservation Measure 5.d, below) in order to regularly update and refine collision estimates for listed birds. The plan will include an initial monitoring phase involving deployment of Motus radio tags on listed birds in conjunction with installation and operation of Motus receiving stations on WTGs in the Lease Area following offshore Motus recommendations.6 The initial phase may also include deployment of satellite-based tracking technologies (e.g., GPS or Argos tags). b. Annual Monitoring Reports. Lessee will submit to BOEM (at renewable_reporting@boem.gov), BSEE (via TIMSWeb with a notification email sent to protectedspecies@bsee.gov), and the Service's Chesapeake Bay Field Office (at CBFOprojectreview@fws.gov) a comprehensive report after each full year of monitoring (pre- and post-construction) within 12 months of completion of the last avian survey. The report will include all data, analyses, and summaries regarding ESA-listed and non-ESA-listed birds and bats. BOEM, BSEE, and the Service will use the annual monitoring reports to assess the need for reasonable revisions (based on subject matter expert analysis) to the Avian and Bat Post-Construction Monitoring Plan. c. Post-Construction Quarterly Progress Reports. Lessee will submit quarterly progress reports during the implementation of the Avian and Bat Post-Construction Monitoring Plan to BOEM (at renewable_reporting@boem.gov), BSEE (via TIMSWeb with a notification email sent to protectedspecies@bsee.gov), and the Service's Chesapeake Bay Field Office (at CBFOprojectreview@fws.gov) by the 15th day of the month following the end of each quarter during the first full year that the Project is operational. The progress reports will include a summary of all work performed, an explanation of overall progress, and any technical problems encountered. d. Monitoring Plan Revisions. Within 30 calendar days of submitting the annual monitoring report, Lessee will meet with BOEM, BSEE, and the Service to discuss the following: the monitoring results; the potential need for revisions to the Avian and Bat Post-Construction Monitoring Plan, including technical refinements or additional monitoring; and the potential need for any additional efforts to reduce impacts. If BOEM, BSEE, or the Service determines after this discussion that revisions to the Avian and Bat Post-Construction Monitoring Plan are necessary, BOEM may require Lessee to modify the Avian and Bat Post-Construction Monitoring Plan. If the reported monitoring results deviate from the impact analysis included in this Opinion, Lessee will transmit to BOEM recommendations for new mitigation measures and/or monitoring methods. The frequency, duration, and methods for various monitoring efforts in future revisions of the Avian and Bat Post-Construction Monitoring Plan will be determined adaptively based on current technology and the evolving weight of evidence regarding the likely levels of collision mortality for each listed bird species. The effectiveness and cost of various technologies/methods will be key considerations when revising the plan. Grounds for revising the Avian and Bat Post-Construction Monitoring Plan include, but are not limited to: (i) greater than expected levels of collision of listed birds; (ii) evolving data input needs (as determined by BOEM and the Service) for SCRAM (or its successor); (iii) changing technologies for tracking or otherwise monitoring listed birds in the offshore environment that are relevant to assessing collision risk; (iv) new information or understanding of how listed birds utilize the offshore environment and/or interact with wind farms; and (v) a need (as determined by BOEM and the Service) for enhanced coordination and alignment of tracking, monitoring, and other data collection efforts for listed birds across multiple wind farms/leases on the OCS. BOEM will require Lessee to continue implementation of the Avian and Bat Post-Construction Monitoring Plan) until one of the following occurs: (i) the Maryland Offshore Wind Project ceases operation; (ii) BOEM determines, and the Service concurs, that a robust weight of evidence has demonstrated that collision risks to all three listed birds from Maryland Offshore Wind WTGs operation are negligible (i.e., the risk of take from WTG operation is found to be discountable); or (iii) BOEM determines, and the Service concurs, that further data collection is unlikely to improve the accuracy or robustness of collision mortality estimates and is unlikely to improve the ability of BOEM and Lessee to reduce or offset collision mortality (see Conservation Measure 7, below).	Conservation measure in the BiOp issued by USFWS on May 31, 2024	BOEM, BSEE, USFWS

Resource Area Mitigated	Project Stage*	Mitigation and Monitoring Measures	Source	Anticipated Enforcing Agency
Bats, Birds	O&M	e. Operational Reporting (Operations). Lessee will submit to BOEM (at renewable_reporting@boem.gov) and BSEE (via TIMSWeb with a notification email sent to protectedspecies@bsee.gov) an annual report summarizing monthly operational data calculated from 10-minute supervisory control and data acquisition (SCADA) data for all WTGs together in tabular format: the proportion of time the WTGs were operational (spinning at >x rpm) each month, the average rotor speed (monthly revolutions per minute[rpm]) of spinning WTGs plus 1 standard deviation, and the average pitch angle of blades (degrees relative to rotor plane) plus 1 standard deviation. Any operational data considered by Lessee to be privileged or confidential must be clearly marked as confidential business information and will be handled by BOEM and BSEE in a manner consistent with 30 CFR §585.114. BOEM and BSEE will use this information as inputs for avian collision risk models to assess whether the results deviate substantially from the impact analysis included in this Opinion. f. Raw Data. Lessee will store the raw data from all avian and bat surveys and monitoring activities according to accepted archiving practices. Such data must remain accessible to BOEM, BSEE, and the Service, upon request for the duration of the Lease. Lessee will work with BOEM to ensure the data are publicly available. All avian tracking data (i.e., from radio and satellite transmitters) will be stored, managed, and made available to BOEM, BSEE, and the Service following the protocols and procedures outlined in the agency document entitled, Guidance for Coordination of Data from Avian Tracking Studies, or its successor.	Conservation measure in the BiOp issued by USFWS on May 31, 2024	BOEM, BSEE, USFWS
Bats, Birds	C, O&M, D	11. *Incidental Mortality Reporting* a. Lessee must provide an annual report to BOEM, BSEE, and the Service documenting any dead (or injured) birds or bats found on vessels and structures during construction, operations, and decommissioning. The report will contain the following information: the name of species, date found, location, a picture to confirm species identity (if possible), and any other relevant information. b. Observation of a dead listed bird or bat will be reported to BOEM (at renewable_reporting@boem.gov), BSEE (via TIMSWeb with a notification email sent to protectedspecies@bsee.gov), and the Service as soon as practicable (taking into account crew and vessel safety), ideally within 24 hours and no more than 3 days after the sighting. If practicable, the dead specimen will be carefully collected and preserved in the best possible state, contingent on the acquisition of the necessary wildlife permits and compliance with the Lessee health and safety standards. Birds with Service bands will be reported to the USGS Bird Banding Lab (BBL)8. Also, see Monitoring Requirements at the end of this Opinion.	Conservation measure in the BiOp issued by USFWS on May 31, 2024	BOEM, BSEE, USFWS
Invertebrates	O&M	12. *Electromagnetic Fields (EMF) Research* Due to the importance of horseshoe crabs to the region, US Wind will conduct a study of the potential EMF effects of the Maryland Offshore Wind project on horseshoe crabs.	Conservation measure in the BiOp issued by USFWS on May 31, 2024	BOEM, BSEE, USFWS
Birds	C, O&M	1. *Periodically review current technologies and methods for minimizing collision risk of listed birds.* a) BOEM must periodically review current technologies and methods for minimizing collision risk of migratory birds with WTGs, including but not limited to: WTG coloration/marking, lighting, avian deterrents, remote sensing such as radar and thermal cameras, and limited WTG operational changes. b) Prior to the start of WTG operations at Maryland Offshore Wind, BOEM must extract from existing project documentation (e.g., the BA, other consultation documents, the final Environmental Impact Statement, the COP) a stand-alone summary of technologies and methods that were evaluated by BOEM to reduce or minimize bird collisions at the Maryland Offshore Wind WTGs. c) Within 5 years of the start of WTG operation, and then every 5 years for the life of the project, BOEM must prepare a Collision Minimization Report, reviewing best available scientific and commercial data on technologies and methods that have been implemented, or are being studied, to reduce or minimize bird collisions at WTGs. The review must be global in scope and include both offshore and onshore WTGs. d) BOEM must distribute a draft Collision Minimization Report to the Service, BSEE, Lessee, appropriate state agencies for a 60-day review period. BOEM must address all comments received during the review period and issue the final report within 60 days of the close of the review period. e) Following issuance of the final Collision Minimization Report, the Service may request a meeting. Within 60 days of receiving the request, BOEM must convene a meeting with the Service, BSEE, and Lessee to discuss the Collision Minimization Report and seek consensus on whether implementation of any technologies/methods is warranted.	Term and Condition in the BiOp issued by USFWS on May 31, 2024	BOEM, BSEE, USFWS
Birds	C, O&M, D	2. *Ensure that all individuals performing work offshore are familiar with piping plover, rufa red knot and roseate tern.* a) BOEM must provide annual training to all individuals directly or indirectly responsible for implementing and/or overseeing actions described in the BA. The training will review the protection measures outlined in the BA and Conservation Measures outlined in the Opinion and may be modified as agreed upon by BOEM and the Service.	Term and Condition in the BiOp issued by USFWS on May 31, 2024	BOEM, BSEE, USFWS
Cultural Resources	C	US Wind must comply with avoidance requirements for all marine cultural resources (i.e., archaeological resources and ancient submerged landform features) as described in the NHPA Section 106 Memorandum of Agreement.	NHPA Section 106 Memorandum of Agreement	BOEM, BSEE
Cultural Resources	C	US Wind must provide as-placed and as-laid maps with both the horizontal and vertical extents of all seafloor impacts. An Unanticipated Discovery Plan must be developed and implemented to address inadvertent discoveries in the marine Area of Potential Effects.	NHPA Section 106 Memorandum of Agreement	BOEM, BSEE

Resource Area Mitigated	Project Stage*	Mitigation and Monitoring Measures	Source	Anticipated Enforcing Agency
Cultural Resources	C	US Wind must implement and fulfill mitigation measures in accordance with the NHPA Section 106 Memorandum of Agreement Attachment 4: Historic Property Treatment Plan for Terrestrial Archaeology Resources, including archaeological testing, data recovery excavation, temporary site avoidance outside the Area of Potential Effects, and cultural and Tribal monitoring.	NHPA Section 106 Memorandum of Agreement	BOEM
Cultural Resources	C	US Wind must conduct archaeological monitoring during onshore construction in areas identified in the NHPA Section 106 Memorandum of Agreement and must prepare and implement a Monitoring Plan as well as an Unanticipated Discovery Plan to address inadvertent discoveries in the terrestrial Area of Potential Effects.	NHPA Section 106 Memorandum of Agreement	BOEM
Cultural Resources	O&M	US Wind must implement and fulfill mitigation measures in accordance with the NHPA Section 106 Memorandum of Agreement Attachment 3: Historic Property Treatment Plan for Aboveground Historic Resources to resolve adverse visual effects, including cumulative effects, to the Fort Miles Historic District in Delaware, and the U.S. Coast Guard Tower and U.S. Life Saving Station Museum in Maryland.	NHPA Section 106 Memorandum of Agreement	BOEM
ESA-listed Species	C, O&M, D	US Wind will report to BOEM, BSEE, NMFS, and/or USFWS within 24-hours of confirmation any incidental take of an endangered or threatened species.	BOEM proposed measure; NMFS ESA consultation; USFWS ESA consultation	BSEE, NMFS, USFWS
ESA-listed Species	C, O&M, D	BSEE would ensure that US Wind implements the following reporting requirements necessary to document the amount or extent of take that occurs during all phases of the Proposed Action: • All reports would be sent to: nmfs.gar.incidental-take@noaa.gov and BSEE at protectedspecies@bsee.gov and TIMSWeb. • During the construction phase and for the first year of operations, US Wind would compile and submit monthly reports that include a summary of all project activities carried out in the previous month, including vessel transits (number, type of vessel, and route), and piles installed, and all observations of ESA-listed species. Monthly reports are due on the 15th of the month for the previous month. • Beginning in year 2 of operations, US Wind would compile and submit annual reports that include a summary of all project activities carried out in the previous year, including vessel transits (number, type of vessel, and route), repair and maintenance activities, survey activities, and all observations of ESA-listed species. These reports are due by April 1 of each year (i.e., the 2026 report is due by April 1, 2027). Upon mutual agreement of NMFS, BOEM, and BSEE, the frequency of reports can be changed.	BOEM proposed measure; NMFS ESA consultation	BSEE, NMFS
Finfish, Invertebrates, and EFH	C, O&M	Develop and implement a Lionfish Monitoring and Adaptive Management Plan.	EFH Assessment	BOEM, BSEE, NMFS
Finfish, Invertebrates, and EFH	C, O&M, D	The measures required by the final Essential Fish Habitat consultation would be incorporated into COP approval, and BOEM and/or NMFS would monitor compliance with these measures.	EFH Assessment	BOEM, BSEE, NMFS
Marine Mammals	C	BOEM and BSEE would ensure that US Wind prepares a PAM Plan that describes all proposed equipment, deployment locations, detection review methodology and other procedures, and protocols related to the proposed uses of PAM for mitigation and long-term monitoring. This plan would be submitted to NMFS, BSEE, USACE, and BOEM for review and concurrence at least 180 days prior to the planned start of activities requiring PAM.	BOEM proposed measure in the NMFS BA; Proposed MMPA ITA (89 Fed. Reg. 504; January 4, 2024)	BSEE, NMFS
Marine Mammals	C	BOEM and BSEE would ensure that US Wind prepare and submit a Pile Driving Monitoring Plan to BOEM, BSEE, and NMFS for review and concurrence at least 90 days before start of pile driving. The plan would detail all plans and procedures for sound attenuation as well as for monitoring ESA-listed whales and sea turtles during all impact pile driving. The plan would also describe how BOEM, BSEE, and US Wind would determine the number of whales exposed to noise above the Level B harassment threshold during pile driving to install the cofferdam at the sea to shore transition. US Wind would obtain NMFS' concurrence with this plan prior to starting any pile driving.	BOEM proposed measure in the NMFS BA; Proposed MMPA ITA (89 Fed. Reg. 504; January 4, 2024)	BSEE, NMFS

Resource Area Mitigated	Project Stage*	Mitigation and Monitoring Measures	Source	Anticipated Enforcing Agency
Marine Mammals	C, O&M	BOEM and BSEE would require US Wind to conduct long-term Passive Acoustic Monitoring (PAM) to record ambient and operational noise and marine species vocalizations in the Lease Area. Analysis of PAM data collected within the lease area allows for comparisons with pre-construction periods, both in terms of the soniferous species that are present, as well as any changes to ambient noise due to the operation of the wind farm, which could affect species' distributions and/or behaviors. In addition, data collected within a lease area can be compared to data collected throughout the broader region, thus supporting cumulative effects analysis for highly migratory species. BOEM requires that archival, continuous recording systems be deployed at least 30 days prior to foundation pile driving, must continue through initial operations, and must be sustained for the lifetime of the lease. The number of devices in each lease area must be sufficient to ensure that vocalizing North Atlantic Right Whales could be detected, based on the assumption of a 10 km detection range for their calls. The sampling rate of the recorders should prioritize the detection of baleen whale detections, but must also have a minimum capability of detecting and storing acoustic data on vessel noise, pile-driving, and WTG operation. Throughout deployments and data analysis, the lessee will be expected to follow the best practices outlined in the RWSC best practices document. They must also process the data to document, at the very least, the presence of baleen whale vocalizations and metrics of ambient noise. They will be expected to archive the full acoustic record at National Centers for Ecological Information and to submit baleen whale detections to BOEM, BSEE, and NMFS on a regular basis. As an alternative to conducting PAM in their project area, the lessee may opt to pay into a Regional PAM fund on an annual basis to support long-term monitoring. Their contribution would cover the purchase of instruments, annual deployments and refurbishment, data processing, and long-term data archiving. Funding from BOEM and other partners will contribute to the Regional PAM fund, which will support PAM on non-lease areas and enable broader-scale analyses on cumulative effects to marine species.	BOEM proposed measure in the NMFS BA; Proposed MMPA ITA (89 Fed. Reg. 504; January 4, 2024)	BSEE, NMFS
Marine Mammals	C, O&M	The measures required by the final MMPA LOA would be incorporated into COP approval, and BOEM or BSEE will monitor compliance with these measures.	BOEM proposed measure in the NMFS BA; Proposed MMPA ITA (89 Fed. Reg. 504; January 4, 2024)	BSEE, NMFS
Marine Mammals and Sea Turtles	C, O&M, D	• As part of vessel strike avoidance, a training program will be implemented. The training program will be provided to NMFS for review and approval prior to the start of surveys. Confirmation of the training and understanding of the requirements will be documented on a training course log sheet. Signing the log sheet will certify that the crew members understand and will comply with the necessary requirements throughout the survey event. • Vessel operators and crew must maintain a vigilant watch for marine mammals and sea turtles by slowing down or stopping their vessels to avoid striking these protected species. Vessel crew members responsible for navigation duties will receive site-specific training on marine mammal sighting/reporting and vessel strike avoidance measures. Vessel strike avoidance measures will include, but are not limited to the following, except under extraordinary circumstances when complying with these measures would put the safety of the vessel or the crew at risk: ○ If underway, vessels must steer a course away from any sighted NARW at 10 knots (18.5 km/hr) or less until the 500 m (1,640 ft) minimum separation distance has been established. If a NARW is sighted in a vessel's path, or within 100 m (330 ft) of an underway vessel, the underway vessel must reduce speed and shift the engine to neutral. Engines will not be engaged until the NARW has moved outside of the vessel's path and beyond 100 m. If stationary, the vessel must not engage engines until the NARW has moved beyond 100 m; ○ All vessels will maintain a separation distance of 100 m (330 ft) or greater of any sighted whales, with the exception of NARW. If sighted, the vessel underway must reduce speed and shift the engine to neutral, and must not engage the engines until the whale has moved outside the vessel's path and beyond 100 m. If a survey vessel is stationary, the vessel will not engage engines until the whale has moved out of the vessel's path and beyond 100 m; ○ Vessel operators will use all available sources of information of NARW presence, including daily monitoring of the Right Whale Sightings Advisory System, WhaleAlert app, and monitoring of Coast Guard VHF Channel 16 to receive notifications of right whale detections, SMAs, DMAs, and Slow Zones to plan vessel routes to minimize the potential for co-occurrence with right whales.	BOEM proposed measure in the NMFS BA; Proposed MMPA ITA (89 Fed. Reg. 504; January 4, 2024)	BSEE, NMFS

Resource Area Mitigated	Project Stage*	Mitigation and Monitoring Measures	Source	Anticipated Enforcing Agency
Marine Mammals, Sea Turtles	C	BOEM, BSEE, and NMFS would ensure that PSO coverage is sufficient to reliably detect marine mammals and sea turtles at the surface in the identified clearance and shutdown zones to execute any pile driving delays or shutdown requirements. This will include a PSO/ PAM team on the construction vessel and 2 additional PSO vessels each with a visual monitoring team. The following equipment and personnel at a minimum will be on each associated vessel: ***Construction Vessel:*** • 3, visual PSOs on watch • 2, (7x) or (10x) reticle binoculars calibrated for observer height off the water. • 2 (25x or similar) mounted "big eye" binoculars if vessel is deemed appropriate to provide a platform in which use of the big eye binoculars would be effective. • 1, PAM operator on duty • 1, mounted thermal/IR camera system • 2, (25x or similar) "big eye" binoculars mounted 180 deg apart • 1, monitoring station for real-time PAM system • 2, handheld or wearable NVDs with IR spotlights • 1, Data collection software system • 2, PSO-dedicated VHF radios • 1, digital single lens reflex camera equipped with a 300-mm lens Each Additional PSO Vessels (2): • 2, visual PSOs on watch • 2, (7x) or (10x) reticle binoculars calibrated for observer height off the water. • 1, (25x or similar) mounted "big eye" binoculars if vessel is deemed appropriate to provide a platform in which use of the big eye binoculars would be effective. • 1, mounted thermal/IR camera system • 1, handheld or wearable NVD with IR spotlight • 1, Data collection software system • 2, PSO-dedicated VHF radios • 1, digital single lens reflex camera equipped with a 300-mm lens If, at any point prior to or during construction, the PSO coverage that is included as part of the Proposed Action is determined not to be sufficient to reliably detect ESA-listed whales and sea turtles within the clearance and shutdown zones, additional PSOs and/or platforms must be deployed. Determinations prior to construction will be based on review of the Pile Driving Monitoring Plan. Determinations during construction will be based on review of the weekly pile driving reports and other information, as appropriate.	BOEM proposed measure in the NMFS BA; Proposed MMPA ITA (89 Fed. Reg. 504; January 4, 2024)	BSEE, NMFS
Marine Mammals, Sea Turtles	C	BOEM and BSEE would require US Wind to develop an impact pile driving sound field verification plan to confirm noise generated by foundation installation is below modeled ensonification levels used for estimating environmental impacts. The plan will include details for measurements of thorough and abbreviated sound field verification. At a minimum, the abbreviated measurements must verify noise from each foundation at a distance of approximately 750 m from that foundation. The thorough measurements must include at least three additional acoustic recorders at increasing ranges from the foundations for the first foundation installation in each calendar year, and for any subsequent foundations that vary substantially from thoroughly monitored foundations. The plan will include measurement procedures and results reporting that meet ISO standard 18406:2017 (Underwater acoustics – Measurement of radiated underwater sound from percussive pile driving). The submission of raw acoustic data or data products associated with SFV to BOEM, BSEE, and NMFS will be required.	BOEM proposed measure in the NMFS BA; Proposed MMPA ITA (89 Fed. Reg. 504; January 4, 2024)	BSEE, NMFS
Marine Mammals, Sea Turtles	C	BOEM and BSEE would ensure that if the clearance and/or shutdown zones are expanded due to the verification of sound fields from Project activities, PSO coverage is sufficient to reliably monitor the expanded clearance and/or shutdown zones. Additional observers would be deployed on additional platforms for every 1,500 meters that a clearance or shutdown zone is expanded beyond the distances modeled prior to verification.	BOEM proposed measure in the NMFS BA; Proposed MMPA ITA (89 Fed. Reg. 504; January 4, 2024)	BSEE, NMFS
Marine Mammals, Sea Turtles	C	BOEM and BSEE may consider reductions in the shutdown zones for sei, fin or sperm whales based on thorough (at least 4 recorder locations) sound field verification of a minimum of 3 foundations with piles of the same size; however, BOEM/BSEE/USACE would ensure that the shutdown zone for sei whales, fin whales, blue whales, and sperm whales is not reduced to less than 1,000 meters, or 500 meters for sea turtles. No reductions in the clearance or shutdown zones for NARWs would be considered regardless of the results of sound field verification of a minimum of three piles.	BOEM proposed measure in the NMFS BA; Proposed MMPA ITA (89 Fed. Reg. 504; January 4, 2024)	BSEE, NMFS

Resource Area Mitigated	Project Stage*	Mitigation and Monitoring Measures	Source	Anticipated Enforcing Agency
Marine Mammals, Sea Turtles	C	In order to commence pile driving at foundations, PSOs must be able to visually monitor up to a 5,250-m radius (monopile), 1,400-m radius (skirt pile, 100- m radius (pin pile) from their observation points for at least 60 minutes immediately prior to piling commencement. Radii are derived from the modeling done by US Wind for the LOA. Acceptable visibility will be determined by the Lead PSO.	BOEM proposed measure in the NMFS BA; Proposed MMPA ITA (89 Fed. Reg. 504; January 4, 2024)	BSEE, NMFS
Marine Mammals, Sea Turtles	C	US Wind must not conduct pile driving operations at any time when lighting or weather conditions (e.g., darkness, rain, fog, sea state) prevent visual monitoring of the full extent of the clearance and shutdown zones. • US Wind must submit an AMP to BOEM, BSEE, and NMFS for review and approval at least 6 months prior to the planned start of pile-driving. This plan may include deploying additional observers, alternative monitoring technologies such as night vision, thermal, and infrared technologies, or use of PAM and must demonstrate the ability and effectiveness to maintain all clearance and shutdown zones during daytime as outlined below in Part 1 and nighttime as outlined in Part 2 to BOEM's, BSEE's, and NMFS's satisfaction. • The AMP must include two stand-alone components as described below: ○ Part 1 – Daytime when lighting or weather (e.g., fog, rain, sea state) conditions prevent visual monitoring of the full extent of the clearance and shutdown zones. Daytime being defined as 1 hour after civil sunrise to 1.5 hours before civil sunset. ○ Part 2 – Nighttime inclusive of weather conditions (e.g., fog, rain, sea state). Nighttime being defined as 1.5 hours before civil sunset to 1 hour after civil sunrise. • If a protected marine mammal or sea turtle is observed entering or found within the shutdown zones after impact pile-driving has commenced, US Wind would follow the shutdown procedures. US Wind would notify BOEM, BSEE, and NMFS of any shutdown occurrence during piling driving operations within 24 hours of the occurrence unless otherwise authorized by BOEM, BSEE, and NMFS. • The AMP should include, but is not limited to the following information: ○ Identification of night vision devices (e.g., mounted thermal/infrared camera systems, hand-held or wearable NVDs, infrared spotlights), if proposed for use to detect protected marine mammal and sea turtle species. ○ The AMP must demonstrate (through empirical evidence) the capability of the proposed monitoring methodology to detect marine mammals and sea turtles within the full extent of the established clearance and shutdown zones (i.e., species can be detected at the same distances and with similar confidence) with the same effectiveness as daytime visual monitoring (i.e., same detection probability). Only devices and methods demonstrated as being capable of detecting marine mammals and sea turtles to the maximum extent of the clearance and shutdown zones will be acceptable. ○ Evidence and discussion of the efficacy (range and accuracy) of each device proposed for low visibility monitoring must include an assessment of the results of field studies (e.g., Thayer Mahan demonstration), as well as supporting documentation regarding the efficacy of all proposed alternative monitoring methods (e.g., best scientific data available). ○ Reporting procedures, contacts and timeframes. BOEM and BSEE may request additional information, when appropriate and as needed, to assess the efficacy of the AMP.	BOEM proposed measure in the NMFS BA; Proposed MMPA ITA (89 Fed. Reg. 504; January 4, 2024)	BSEE, NMFS
Marine Mammals, Sea Turtles	C	BOEM and BSEE would require that sound fields generated during percussive pile driving may not exceed NMFS' Level A permanent threshold shift (PTS) limits for low frequency cetaceans (LFC) at distances greater than 2,900 m (9,514.5 ft) from each monopile, 1,400 m (4,593 ft) from each skirt pile, and 50 m (164 ft) from each pin pile foundation. These distances are based on the project-specific acoustic modeling for PTS thresholds for LFC species. This ensures protection from PTS for species of greater concern, such as North Atlantic right whales and other baleen whales (all considered LFC). Current NMFS PTS levels for LFCs are set at 183 weighted LF SEL (dB re 1 μPa^2s) or 202 unweighted Lpk (dB re 1 μPa^2), but lessees must adhere to any updated thresholds updated by NMFS as of the start of installation of piles. Although developed for LFCs, implementation of this requirement would afford protection to some other groups of marine mammals, such as mid-frequency cetaceans and also pinnipeds, as well as sea turtles and fishes. BOEM and BSEE intend to develop a second Received Sound Level Limit (RSLL) aimed at reducing Level B Harassment (e.g., potential to disrupt important behaviors), especially for LFCs. Although the application of the Level A LFC RSLL also reduces Level B zones to some extent, more Level B reduction may be required to meet MMPA negligible impacts determinations, especially in areas of higher presence of low population species like the NARW. BOEM and BSEE will advise lessees once a second RSLL is developed in order to consider implementation concerns, if any.	BOEM proposed measure in the NMFS BA; Proposed MMPA ITA (89 Fed. Reg. 504; January 4, 2024)	BSEE, NMFS
Marine Mammals; Sea Turtles; Finfish, Invertebrates, and EFH; Benthic Resources	C, O&M	BOEM will require US Wind comply with all the Project Design Criteria and Best Management Practices for Protected Species Associated with Offshore Wind Data Collection at: Project Design Criteria and Best Management Practices for Protected Species Associated with Offshore Wind Data Collection, that implements the integrated requirements for threatened and endangered species resulting from the June 29, 2021, programmatic consultation under the ESA, revised November 22, 2021. This requirement also applies to non-ESA-listed marine mammals that are found in that document. Consultation conditions occurring in State waters outside of BOEM jurisdiction may apply to co-action agencies issuing permits and authorizations under this consultation.	BOEM proposed measure in the NMFS BA	BSEE, NMFS

Resource Area Mitigated	Project Stage*	Mitigation and Monitoring Measures	Source	Anticipated Enforcing Agency
Marine Mammals; Sea Turtles; Finfish, Invertebrates, and EFH; Benthic Resources	C, O&M, D	US Wind would ensure that vessel operators, employees, and contractors engaged in offshore activities pursuant to the approved COP complete marine trash and debris awareness training annually. The training consists of two parts: (1) viewing a marine trash and debris training video or slide show (described below); and (2) receiving an explanation from management personnel that emphasizes their commitment to the requirements. The marine trash and debris training videos, training slide packs, and other marine debris related educational material may be obtained at https://www.bsee.gov/debris or by contacting BSEE. The training videos, slides, and related material may be downloaded directly from the website. Operators engaged in marine survey activities would continue to develop and use a marine trash and debris awareness training and certification process that reasonably assures that their employees and contractors are in fact trained. The training process would include the following elements: • Viewing of either a video or slide show by the personnel specified above; • An explanation from management personnel that emphasizes their commitment to the requirements; • Attendance measures (initial and annual); and • Record keeping and the availability of records for inspection by BSEE. By January 31 of each year, US Wind would submit to BSEE an annual report that describes its marine trash and debris awareness training process and certifies that the training process has been followed for the previous calendar year. US Wind would send the reports via email to BOEM (at renewable_reporting@boem.gov) and to BSEE (at marinedebris@bsee.gov).	BOEM proposed measure in the NMFS BA	BSEE

Resource Area Mitigated	Project Stage*	Mitigation and Monitoring Measures	Source	Anticipated Enforcing Agency
Marine Mammals, Sea Turtles	C	1. To implement the requirements of RPM 1, for ESA listed whales, US Wind must comply with the measures specified in the proposed MMPA ITA (which are incorporated into the proposed action) as modified or supplemented in the final MMPA ITA, to minimize effects of foundation installation and other activities on ESA listed whales. To facilitate implementation of this requirement: a. BOEM must require, through an enforceable condition of their approval of US Wind's Construction and Operations Plan for the Maryland Wind Project, US Wind to comply with any measures for ESA-listed species included in the proposed ITA, which already have been incorporated into the proposed action, as modified or supplemented by the final MMPA ITA. b. NMFS OPR must ensure the applicant's compliance with all mitigation measures as prescribed in the final ITA. We expect this will be carried out through NMFS OPR's review of plans and monitoring reports, including interim and final SFV reports, submitted by US Wind over the life of the MMPA ITA and taking any responsive action within its statutory and regulatory authority it deems necessary to ensure compliance with all final ITA mitigation measures based on the foregoing review. c. The USACE must require, through an enforceable conditions of their individual permit authorizations, that US Wind comply with any measures in the proposed MMPA ITA regarding ESA-listed marine mammals, which have already been incorporated into the proposed action, and as modified or supplemented by the final MMPA ITA. 2. To implement the requirements of RPM 1, the following measures related to sound field verification (SFV) for pile driving carried out for WTG, OSS, and Met Tower foundation installation must be required by BOEM, BSEE, USACE, and implemented by US Wind. The purpose of SFV and the steps outlined here are to ensure that US Wind does not exceed the distances to the auditory injury (i.e., harm) or behavioral harassment threshold (Level A and Level B harassment respectively) for ESA listed marine mammals, the harm or behavioral harassment thresholds for sea turtles, or the harm or behavioral disturbance thresholds for Atlantic sturgeon as analyzed in the Opinion. These thresholds and the distances to them, identified and described in this Opinion, underpin the effects analysis, exposure analysis, and our determination of the amount and extent of incidental take anticipated and exempted in this ITS, including any determination that no incidental take is anticipated (e.g., for Atlantic sturgeon). The measures outlined here are based on the requirement that the initial pile driving methodology and sound attenuation measures will result in noise levels that do not exceed the identified distances (as modeled assuming 10 dB attenuation; see Tables 7.1.7, 7.1.17, 7.1.24) but, if that is not the case, provide a step-wise approach for modifying operations and/or modifying or adding sound attenuation measures that can reasonably be expected to avoid exceeding those thresholds for the next pile being driven. a. BOEM, BSEE, and USACE must require, and US Wind must develop, a Sound Field Verification Plan, addressing Thorough and Abbreviated SFV, consistent with the requirements in T&C 10.d below. Thorough SFV consists of: SFV measurements made at a minimum of four distances from the pile(s) being driven, along a single transect, in the direction of lowest transmission loss (i.e., projected lowest transmission loss coefficient), including, but not limited to, 750 m and three additional ranges selected such that measurement of identified isopleths are accurate, feasible, and avoid extrapolation. At least one additional measurement at an azimuth 90 degrees from the array at approximately 750 m must be made. At each measurement location, there must be a near-bottom and mid-water column hydrophone (measurement systems); the recordings must be continuous throughout the duration of all pile driving of each foundation. Abbreviated SFV consists of: SFV measurements made at a single acoustic recorder, consisting of a near-bottom and mid-water hydrophone, at approximately 750 m from the pile, in the direction of lowest transmission loss, to record sounds throughout the duration of all pile driving of each foundation. b. BOEM, BSEE, and USACE must require, and US Wind must implement Thorough SFV, as detailed in 2c below, for at least the following foundations: Each construction year: the first 3 monopiles; the first three full jacket foundations (inclusive of all pin/skirt piles for a specific jacket foundation); and the first foundation for any foundation scenarios that were modeled for the exposure analysis (e.g., rated hammer energy, number of strikes, representative location) that does not fall into one of the previously listed categories. c. During Thorough SFV, installation of the next foundation (of the same type/foundation method) may not proceed until US Wind has reviewed the initial results from the Thorough SFV and determined that there were no exceedances of any distances to the identified thresholds based on modeling assuming 10 dB attenuation. US Wind must notify NMFS by email (nmfs.gar.incidental-take@noaa.gov) when they intend to proceed to the next pile. d. If any of the Thorough SFV measurements from any pile indicate that the distance to any isopleth of concern for any species is greater than those modeled assuming 10 dB attenuation, US Wind must notify BOEM, BSEE, USACE, NMFS OPR, and NMFS GARFO within 24 hours of reviewing the Thorough SFV measurements and must implement the following measures for the next pile of the same type/installation methodology, as applicable. These requirements are in place for monopiles and jacket foundations and repeat until the criteria in 2.d.ii.1 or 2.d.ii.2 are met.	BiOp issued by NMFS on June 18, 2024	BOEM, BSEE, NMFS, USACE

Resource Area Mitigated	Project Stage*	Mitigation and Monitoring Measures	Source	Anticipated Enforcing Agency
Marine Mammals, Sea Turtles	C	i. Clearance and Shutdown Zones. If any of the Thorough SFV measurements indicate that the distances to level A thresholds for ESA listed whales (peak or cumulative) or PTS peak or cumulative thresholds for sea turtles are greater than the modeled distances (assuming 10 dB attenuation, see Tables 7.1.7, 7.1.17, 7.1.24), the clearance and shutdown zones (see Table 11.1 [of the NMFS BiOp]) for subsequent piles of the same type (e.g., if triggered by SFV results for a monopile, for the next monopile) must be increased so that they are at least the size of the distances to those thresholds as indicated by SFV. For every 1,500 m that a marine mammal clearance or shutdown zone is expanded, additional PSOs must be deployed from additional platforms/vessels to ensure adequate and complete monitoring of the expanded shutdown and/or clearance zone; US Wind must deploy any additional PSOs consistent with the approved Pile Driving Monitoring Plan (see 10.a below) in consideration of the size of the new zones and the species that must be monitored (i.e., sea turtles and/or whales). Use of the expanded clearance and shutdown zones must continue for additional piles until US Wind requests and receives concurrence from NMFS GARFO to revert to the original clearance and shutdown zones. Attenuation Measures/Pile Driving Operations. US Wind must identify one or more additional, modified, and/or alternative noise attenuation measure(s) and/or operational change(s) to the noise attenuation system or pile driving operations (to be described in the approved SFV plan (see T&C 10.d)) that is expected to result in sound levels meeting the modeled distances for which there was an exceedance and must implement that measure/change for the next pile of the same type of pile that is installed. Attenuation measures/operational changes include but are not limited to adding a noise attenuation device, adjusting hammer operations, and adjusting or otherwise modifying the noise mitigation system. US Wind must provide written notification to BOEM, BSEE, USACE, NMFS OPR, and NMFS GARFO of the changes implemented within 24 hours of their implementation. 1. If no additional, modified, and/or alternative measures or operational changes are identified for implementation, or if Thorough SFV carried out for the third pile (of the same type and installation method; i.e., the pile installed with a second round of additional/modified noise attenuation or pile driving operations) indicates that the distance to any of the identified thresholds for ESA listed species are still greater than those modeled (assuming 10 dB attenuation), installation of that foundation type/installation methodology must be paused until there is concurrence from NMFS, BOEM, and BSEE to proceed. NMFS GARFO, NMFS OPR, BOEM, BSEE, and USACE will meet within three business days to discuss: the results of the Thorough SFV monitoring, the severity of exceedance of distances to identified isopleths of concern, the species affected, modeling assumptions, and whether any triggers for reinitiation of consultation are met (50 CFR 402.16), including consideration of whether the Thorough SFV results constitute new information revealing effects of the action that may affect listed species in a manner or to an extent not previously considered in the consultation. Implementation of additional measures to reduce noise and additional Thorough SFV may also be required as a result of this meeting. 2. Following installation of a pile with additional, alternative, or modified noise attenuation measures/operational changes required by 2.d, if Thorough SFV results indicate that all isopleths of concern are within distances to isopleths of concern modeled assuming 10 dB attenuation, implementation of those measures must continue and Thorough SFV must be carried out for a total of at least three piles of the same type/installation method with consistent noise attenuation measures. If the Thorough SFV results from all three of those piles are within the distances to isopleths of concern modeled assuming 10 dB attenuation, then BOEM, BSEE, and USACE must require, and US Wind must continue to implement the additional, alternative, or modified sound attenuation measures/operational changes. US Wind can request concurrence from NMFS GARFO and NMFS OPR to return to the original clearance and shutdown zones (Table 11.1 [of the NMFS BiOp]). e. e. BOEM, BSEE, and USACE must require, and US Wind must implement Abbreviated SFV for all piles for which the Thorough SFV monitoring outlined above is not carried out. The transition to Abbreviated SFV requires concurrence from NMFS GARFO that the requirements outlined in Term and Condition 2 b-d have been met. Abbreviated SFV consists of: SFV measurements made at a single acoustic recorder, consisting of a near-bottom and mid-water hydrophone, at approximately 750 m from the pile, in the direction of lowest transmission loss, to record sounds throughout the duration of all pile driving for each foundation. The Abbreviated SFV data collected will be used to compare to the noise levels defined as a result of Thorough SFV. i. US Wind must review Abbreviated SFV results for each pile within 24 hours of completion of the foundation installation. If measured levels at 750 m did not exceed the expected levels defined during Thorough SFV, US Wind does not need to take any additional action. Results of Abbreviated SFV must be submitted with the weekly pile driving report.	BiOp issued by NMFS on June 18, 2024	BOEM, BSEE, NMFS, USACE

Resource Area Mitigated	Project Stage*	Mitigation and Monitoring Measures	Source	Anticipated Enforcing Agency
Marine Mammals, Sea Turtles	C	ii. If measured levels from Abbreviated SFV for any pile are greater than expected levels (as defined by Thorough SFV), US Wind must evaluate the available information from the pile installation to determine if there is an identifiable cause of the greater than expected sound levels (i.e., a failure of the noise attenuation system), identify and implement corrective action, and report this information (inclusive of an explanation of the suspected or identified cause) to BOEM, BSEE, USACE, and NMFS GARFO within 48 hours of completion of the installation of the pile, during which the greater than expected sound levels occurred. iii. If US Wind can demonstrate that this greater than expected sound level was the result of a failure of the noise attenuation system (e.g., loss of a generator supporting a bubble curtain such that one bubble curtain failed during pile driving) that can be remedied in a way that returns the noise attenuation system to pre-failure conditions, or there is another satisfactory explanation for the increase in sound that is not expected to be repeated for subsequent piles, US Wind can request concurrence from BOEM, BSEE, NMFS OPR, and NMFS GARFO to proceed without Thorough SFV monitoring that would otherwise be required within 72 hours. US Wind is required to remedy any such failure of the noise attenuation system prior to carrying out any additional pile driving. iv. If results of Abbreviated SFV monitoring for any pile exceed the expected noise levels at 750 m established during the initial Thorough SFV, US Wind must resume Thorough SFV monitoring (as described in 2a above, subject to the exception in 2.e.ii above) for installation of the same foundation type and installation method within 72 hours after the completion of the pile driving with an exceedance. 1. US Wind can request concurrence from BOEM, BSEE, NMFS OPR, and NMFS GARFO to resume Abbreviated SFV monitoring following submission of an interim report from Thorough SFV that demonstrates ranges to the identified thresholds within expected values (i.e., distances to thresholds modeled assuming 10 dB attenuation). US Wind may automatically resume Abbreviated SFV monitoring if three consecutive Thorough SFV reports indicate ranges to the identified thresholds within modeled distances (assuming 10 dB attenuation). Interim Thorough SFV monitoring reports must be submitted to BOEM, BSEE, USACE, NMFS OPR, and NMFS GARFO within 48 hours of completion of the monitored pile. If results from any Thorough SFV monitoring triggered by results from Abbreviated SFV indicate that ranges to the identified thresholds (i.e., distances to thresholds modeled assuming 10 dB attenuation) are larger than expected values, the requirements for Thorough SFV outlined in 2.a, c, and d above apply (i.e., continuing Thorough SFV and implementing requirements for additional/modified attenuation measures). Additionally, BOEM, BSEE, USACE, NMFS OPR, and NMFS GARFO will meet within three business days to discuss: the results of SFV monitoring, the severity of exceedance of distances to identified isopleths of concern, the species affected, modeling assumptions, and whether any triggers for reinitiation of consultation are met (50 CFR 402.16), including consideration of whether the available SFV results constitute new information revealing effects of the action that may affect listed species in a manner or to an extent not previously considered in the consultation. Implementation of additional measures to reduce pile driving noise and/or additional Thorough SFV may also be required as a result of this meeting. 3. To implement the requirements of RPMs 1 and 2, BOEM, BSEE, and/or USACE must require that US Wind inspect and carry out appropriate maintenance on the noise attenuation system prior to every foundation installation event (i.e., for each pile driven foundation) and prepare and submit a Noise Attenuation System (NAS) inspection/performance report to NMFS GARFO and NMFS OPR. For piles for which Thorough SFV is carried out, this report must be submitted as soon as it is available, but no later than when the interim Thorough SFV report is submitted for the respective pile. Performance reports for piles with Abbreviated SFV must be submitted with the weekly pile driving reports. All reports must be submitted by email to nmfs.gar.incidental-take@noaa.gov and submitted to BSEE through TIMSWeb. a. US Wind must develop and implement a maintenance plan that identifies the frequency of hose inspection, flushing, pressure tests, and re-drilling and that is designed to minimize the potential for sediment clogging to affect bubble curtain performance. Adjustments to the frequency of these maintenance steps must be made as necessary to ensure optimal performance of the bubble curtain system. b. b. Performance reports for each bubble curtain deployed must include water depth, current speed and direction, wind speed and direction, bubble curtain deployment/retrieval date and time, bubble curtain hose length, bubble curtain radius (distance from pile), diameter of holes and hole spacing, air supply hose length, compressor type (including rated Cubic Feet per Minute (CFM) and model number), number of operational compressors, performance data from each compressor (including Revolutions Per Minute (RPM), pressure, start times, and stop times), free air delivery (m^3/min), total hose air volume (m^3/(min m)), schematic of GPS waypoints during hose laying, maintenance procedures performed (pressure tests, inspections, flushing, re-drilling, and any other hose or system maintenance) before and after installation and the time and date of each of these procedures, and the length of time the bubble curtain was on the seafloor prior to foundation installation. Additionally, the report must include any important observations regarding performance (before, during, and after pile installation), such as any observed weak areas of low pressure. The report may also include any relevant video and/or photographs of the bubble curtain(s) operating during pile driving.	BiOp issued by NMFS on June 18, 2024	BOEM, BSEE, NMFS, USACE

Resource Area Mitigated	Project Stage*	Mitigation and Monitoring Measures	Source	Anticipated Enforcing Agency
Marine Mammals, Sea Turtles	C, O&M	4. To implement the requirements of RPM 3, the following conditions must be implemented: a. BOEM, BSEE, and/or USACE must require that US Wind document and report project vessel trips to/from ports in the Chesapeake Bay and the Delaware River, including the number of vessel calls to Sparrows Point, Hampton Roads, New Jersey Wind Port, and Paulsboro Marine Terminal. This must be included in the monthly project reports submitted to NMFS GARFO over the life of the project (see T&C 7.f. below). An annual summary of project vessel calls to Paulsboro must be submitted to NMFS GARFO (nmfs.gar.incidental-take@noaa.gov) and the USACE Philadelphia District (NAPRegulatory@usace.army.mil). b. BOEM, BSEE, and/or USACE must require that US Wind implement the following reporting requirements for all project vessels transiting to/from ports in the Delaware River and the Chesapeake Bay: i. Report any sturgeon observed with injuries or mortalities along the transit route in the Chesapeake Bay, Chesapeake-Delaware Canal, Delaware Bay, Delaware River, or in the vicinity of the port that the vessel is calling on to NMFS within 24 hours by submitting the form available at: https://media.fisheries.noaa.gov/2021-07/Take%20Report%20Form%2007162021.pdf?null to nmfs.gar.incidental-take@noaa.gov. ii. Collect any dead sturgeon observed in the vicinity of the port that the vessel is calling on and hold in cold storage until proper disposal procedures are discussed with NMFS GARFO. iii. Complete procedures for genetic sampling of any collected dead Atlantic sturgeon that are over 75 cm. More information on submitting genetic samples is included in Term and Condition 6a below. These requirements and instructions are consistent with the requirements of the RPMs and Terms and Conditions of the 2023 Paulsboro Opinion and 2022 New Jersey Wind Port Opinion.	BiOp issued by NMFS on June 18, 2024	BOEM, BSEE, NMFS, USACE
Marine Mammals, Sea Turtles	C	5. To implement the requirements of RPM 4, BOEM, BSEE, and/or USACE must require that US Wind prepare and submit interim and final SFV reports to NMFS GARFO (nmfs.gar.incidental-take@noaa.gov) and BSEE (via TIMSWeb) as outlined here: a. Thorough SFV Interim Reports - Foundation Installation. BOEM, BSEE, and USACE must require US Wind to provide the initial results of the Thorough SFV measurements to NMFS GARFO and NMFS OPR in an interim report as soon as it is available but no later than 48 hours after the installation of each pile for which thorough SFV is carried out. If technical or other issues prevent submission within 48 hours, US Wind must notify BOEM, BSEE, and NMFS GARFO within that 48-hour period with the reasons for delay and provide an anticipated schedule for submission of the report. The interim report must include data from hydrophones identified for interim reporting in the SFV Plan and include a summary of pile installation activities (pile diameter, pile weight, pile length, water depth, sediment type, hammer type, total strikes, total installation time [start time, end time], duration of pile driving, max single strike energy, NAS deployments), pile location, recorder locations, modeled and measured distances to thresholds, received levels (rms, peak, and SEL) results from Conductivity, Temperature, and Depth (CTD) casts/sound velocity profiles, signal and kurtosis rise times, pile driving plots, activity logs, weather conditions. Additionally, any important sound attenuation device malfunctions (suspected or definite), must be summarized and substantiated with data (e.g. photos, positions, environmental data, directions, etc.). Such malfunctions include gaps in the bubble curtain, significant drifting of the bubble curtain, and any other issues which may indicate sub-optimal mitigation performance or are used by US Wind to explain performance issues. Requirements for actions to be taken based on the results of the SFV are identified above. b. Prior to transitioning to Abbreviated SFV, US Wind must prepare and submit a table with levels expected at 750 m for subsequent piles for which that Thorough SFV is intended to represent to be compared against measurements from Abbreviated SFV monitoring. Expected single strike metrics are the maxima of the 95th-percentile of measured unweighted SPL, SEL, and Peak. The expected cumulative metric of unweighted SEL for all impact pile-driving strikes must also be reported and compared. These tables must include the highest levels from Thorough SFVs for which isopleths were calculated to be within modeled ranges, assuming 10 dB attenuation rounded up to the next integer decibel, both actual measurements at 750 m, and fits based on measurements from recorders at other ranges. The highest levels in these tables, rounded to the next whole decibel, will be the “expected levels” to which Abbreviated SFV results must be compared. c. All Abbreviated SFV reports must include the results from the hydrophones at 750m and a comparison to the expected levels at 750 m based on the previously completed thorough SFV for comparable pile type and installation method. Abbreviated SFV reports must be submitted with the weekly pile driving report. d. Thorough SFV Final Reports - The final results of Thorough SFV for monopile and jacket foundation installations must be submitted as soon as possible, but no later than within 90 days following completion of pile driving for the foundations for which that seasons Thorough SFV was carried out (i.e., if the last Thorough SFV was complete on June 15, the final report is due by September 15). Within 60 days of the end of each construction season, US Wind must compile and submit all final Abbreviated SFV reports. 6. To implement the requirements of RPM 4, BOEM, BSEE, and/or USACE must require that US Wind file a report with NMFS GARFO (nmfs.gar.incidental-take@noaa.gov) and BSEE (via TIMSWeb and notification email to protectedspecies@bsee.gov) in the event that any ESA listed species is observed within the identified shutdown zone during active pile driving. This report must be filed within 48 hours of the incident and include the following: description of the activity and duration of pile driving prior to the detection of the animal(s), location of PSOs and any factors that impaired visibility or detection ability, time of first and last detection of the animal(s), distance of animal at first detection, closest point of approach of animal to pile, behavioral observations of the animal(s), time the PSO called for shutdown, hammer log (number of strikes, hammer energy), time the pile driving began and stopped, and any measures implemented (e.g., reduced hammer energy) prior to shutdown. If shutdown was determined not to be feasible, the report must include an explanation for that determination and the measures that were implemented (e.g., reduced hammer energy).	BiOp issued by NMFS on June 18, 2024	BOEM, BSEE, NMFS, USACE

Resource Area Mitigated	Project Stage*	Mitigation and Monitoring Measures	Source	Anticipated Enforcing Agency
Marine Mammals, Sea Turtles	C, O&M	7. To implement the requirements of RPM 4, BOEM, BSEE, USACE, must require US Wind to implement the following reporting requirements necessary to document the amount or extent of incidental take that occurs during all phases of the proposed action. Unless otherwise specified all reports must be submitted to NMFS GARFO via e-mail (nmfs.gar.incidental-take@Noaa.gov) and BSEE via TIMSWeb. a. While unexpected, any observations or interactions with sea turtles or sturgeon that occur during the fisheries monitoring surveys must be reported within 48 hours to NMFS GARFO Protected Resources Division by email (nmfs.gar.incidental-take@noaa.gov). Take reports should reference the Maryland Wind project and include the Take Report Form available on NMFS webpage (https://media.fisheries.noaa.gov/2021-07/Take%20Report%20Form%2007162021.pdf?null). b. All sightings or acoustic detections of North Atlantic right whales must be reported immediately (no later than 24 hours). PAM detections and sightings of right whales with no visible injuries or entanglement must be reported as described in (i) below. Reporting requirements for suspected vessel strikes and injured/dead right whales are in (c) and (d) below. 1. If a NARW is sighted with no visible injuries or entanglement or is detected via PAM at any time by project PSOs/PAM Operators or project personnel, US Wind must immediately report the sighting or acoustic detection to NMFS; if immediate reporting is not possible, the report must be submitted as soon as possible but no later than 24 hours after the initial sighting or acoustic detection. • To report the sighting or acoustic detection, download and complete the Real-Time North Atlantic Right Whale Reporting Template spreadsheet found here: https://www.fisheries.noaa.gov/resource/document/template-datasheet-real-time-north-atlantic-right-whale-acoustic-and-visual. Save the spreadsheet as a .csv file and email it to NMFS NEFSC-PSD (ne.rw.survey@noaa.gov), NMFS GARFO-PRD (nmfs.gar.incidental-take@noaa.gov), and NMFS OPR (PR.ITP.MonitoringReports@noaa.gov). • If unable to report a sighting through the spreadsheet within 24 hours, call the relevant regional hotline (Greater Atlantic Region [Maine through Virginia] Hotline 866-755-6622; Southeast Hotline 877-WHALE-HELP) with the observation information provided below (PAM detections are not reported to the Hotline). • Observation information: Report the following information: the time (note time format), date (MM/DD/YYYY), location (latitude/longitude in decimal degrees; coordinate system used) of the observation, number of whales, animal description/certainty of observation (follow up with photos/video if taken), reporter's contact information, and lease area number/project name, PSO/personnel name who made the observation, and PSO provider company (if applicable) (PAM detections are not reported to the Hotline). • If unable to report via the template or the regional hotline, enter the sighting via the WhaleAlert app (http://www.whalealert.org/). If this is not possible, report the sighting to the U.S. Coast Guard via channel 16. The report to the Coast Guard must include the same information as would be reported to the Hotline (see above). PAM detections are not reported to WhaleAlert or the U.S. Coast Guard. c. In the event of a suspected or confirmed vessel strike of any ESA listed species (e.g. marine mammal, sea turtle, listed fish) by any vessel associated with the Project or other means by which project activities caused a non-auditory injury or death of a ESA listed species, US Wind must immediately report the incident to NMFS (at the phone numbers and email addresses identified below) and BSEE (via TIMSWeb and notification email to (protectedspecies@bsee.gov). Reports to NMFS must be made by phone and email: • Phone: If in the Greater Atlantic Region (ME-VA): the NMFS Greater Atlantic Stranding Hotline (866-755-6622); in the Southeast Region (NC-FL): the NMFS Southeast Stranding Hotline (877-942-5343).	BiOp issued by NMFS on June 18, 2024	BOEM, BSEE, NMFS, USACE

Resource Area Mitigated	Project Stage*	Mitigation and Monitoring Measures	Source	Anticipated Enforcing Agency
Marine Mammals, Sea Turtles	C, O&M	• Email: GARFO (nmfs.gar.incidental-take@noaa.gov), and if in the Southeast region (NC-FL), also to NMFS SERO (secmammalreports@noaa.gov) The report must include: (A) Time, date, and location (coordinates) of the incident; (B) Species identification (if known) or description of the animal(s) involved (i.e., identifiable features including animal color, presence of dorsal fin, body shape and size); (C) Vessel strike reporter information (name, affiliation, email for person completing the report); (D) Vessel strike witness (if different than reporter) information (name, affiliation, phone number, platform for person witnessing the event); (E) Vessel name and/or MMSI number; (F) Vessel size and motor configuration (inboard, outboard, jet propulsion); (G) Vessel's speed leading up to and during the incident; (H) Vessel's course/heading and what operations were being conducted (if applicable); (I) Part of vessel that struck whale (if known); (J) Vessel damage notes; (K) Status of all sound sources in use; (L) If animal was seen before strike event; (M) behavior of animal before strike event; (N) Description of avoidance measures/requirements that were in place at the time of the strike and what additional measures were taken, if any, to avoid strike; (O) Environmental conditions (e.g., wind speed and direction, Beaufort sea state, cloud cover, visibility) immediately preceding the strike; (P) Estimated (or actual, if known) size and length of animal that was struck; (Q) Description of the behavior of the marine mammal immediately preceding and following the strike; (R) If available, description of the presence and behavior of any other marine mammals immediately preceding the strike; (S) Other animal details if known (e.g., length, sex, age class); (T) Behavior or estimated fate of the animal post-strike (e.g., dead, injured but alive, injured and moving, external visible wounds (linear wounds, propeller wounds, non-cutting blunt-force trauma wounds), blood or tissue observed in the water, status unknown, disappeared); (U) To the extent practicable, photographs or video footage of the animal(s); and (V) Any additional notes the witness may have from the interaction. For any numerical values provided (i.e., location, animal length, vessel length etc.), please provide if values are actual or estimated. d. In the event that any PSO or other project personnel, including any project vessel operator or crew, observe or identify a stranded, entangled, injured, or dead ESA listed species (e.g. marine mammal, sea turtle, listed fish), US Wind must immediately report the observation to NMFS (by phone (marine mammals and turtles only) and email (marine mammal, sea turtle, listed fish) and BSEE (via TIMSWeb and notification email to (protectedspecies@bsee.gov): • Phone: If in the Greater Atlantic Region (ME-VA): NMFS Greater Atlantic Stranding Hotline (866-755-6622); in the Southeast Region (NC-FL) call the NMFS Southeast Stranding Hotline (877-942-5343). Note, the stranding hotline may request the report be sent to the local stranding network response team. • Email: if in the Greater Atlantic region (ME to VA) to GARFO (nmfs.gar.incidental-take@noaa.gov) or if in the Southeast region (NC-FL) to NMFS SERO (secmammalreports@noaa.gov). The report must include: (A) Contact information (name, phone number, etc.), time, date, and location (coordinates) of the first discovery (and updated location information if known and applicable); (B) Species identification (if known) or description of the animal(s) involved; (C) Condition of the animal(s) (including carcass condition if the animal is dead); (D) Observed behaviors of the animal(s), if alive; (E) If available, photographs or video footage of the animal(s); and (F) General circumstances under which the animal was discovered. Staff responding to the hotline call will provide any instructions for handling or disposing of any injured or dead animals, which may include coordination of transport to shore, particularly for injured sea turtles. e. US Wind must compile and submit weekly reports during each month that foundation installation occurs that document: the foundation/pile ID, type of pile, pile diameter, start and finish time of each pile driving event, hammer log (number of strikes, max hammer energy, duration of piling) per pile, any changes to noise attenuation systems and/or hammer schedule, details on the deployment of PSOs and PAM operators, including the start and stop time of associated observation periods by the PSOs and PAM Operators, and a record of all observations/detections of marine mammals and sea turtles including time (UTC) of sighting/detection, species ID, behavior, distance (meters) from vessel to animal at time of sighting/detection (meters), animal distance (meters) from pile installation vessel, vessel/project activity at time of sighting/detection, platform/vessel name, and mitigation measures taken (if any) and reason. Sightings/detections during pile driving activities (clearance, active pile driving, post-pile driving) and all other (transit, opportunistic, etc.) sightings/detection must be reported and identified as such. The weekly reports must also confirm that the required SFV was carried out for each pile and that results were reviewed on the required timelines. Abbreviated SFV reports must be appended to the weekly report. These weekly reports must be submitted to NMFS GARFO (nmfs.gar.incidental-take@noaa.gov), BOEM, and BSEE by US Wind or the PSO providers and can consist of QA/QC'd raw data. Weekly reports are due on Wednesday for the activities occurring the previous week (Sunday – Saturday, local time).	BiOp issued by NMFS on June 18, 2024	BOEM, BSEE, NMFS, USACE

Resource Area Mitigated	Project Stage*	Mitigation and Monitoring Measures	Source	Anticipated Enforcing Agency
Marine Mammals, Sea Turtles	C, O&M	f. Starting in the first month that in-water activities occur (e.g., cable installation, fisheries surveys), US Wind must compile and submit monthly reports that include a summary of all project activities carried out in the previous month, including dates and location of any fisheries surveys carried out, vessel transits (name, type of vessel, number of transits, vessel activity, and route (origin and destination, including transits from all ports, foreign and domestic)), cable installation activities (including sea to shore transition), number of foundations installed and pile IDs, and all sightings/detections of ESA listed whales, sea turtles, and sturgeon. Sightings/detections must include species ID, time, date, initial detection distance, vessel/platform name, vessel activity, vessel speed, bearing to animal, project activity, and any mitigation measures taken as a result of those observations. These reports must be submitted to NMFS GARFO (nmfs.gar.incidental-take@noaa.gov) and BSEE (TIMSWeb and protectedspecies@bsee.gov) and are due on the 15th of the month for the previous month. g. US Wind must submit to NMFS GARFO (nmfs.gar.incidental-take@noaa.gov) an annual report describing all activities carried out to implement their Fisheries Research and Monitoring Plan. This report must include a summary of all activities conducted, the dates and locations of all fisheries surveys, number of vessel transits inclusive of port of origin and destination, and a summary table of any observations and captures of ESA listed species during these surveys. The report must also summarize all acoustic telemetry and benthic monitoring activities that occurred, inclusive of vessel transits. Each annual report is due by February 15 (i.e., the report for 2025 activities is due by February 15, 2026). h. BOEM and BSEE must require US Wind to submit full detection data, metadata, and location of recorders (or GPS tracks, if applicable) from all real-time hydrophones used for monitoring during construction within 90 calendar days after the completion of foundation installation have ended for the calendar year (i.e., if the last foundation of construction year 1 is installed on November 30, the report is due by March 1 of the following year). Reporting must use the webform templates on the NMFS Passive Acoustic Reporting System website at https://www.fisheries.noaa.gov/resource/document/passive-acoustic-reporting-system-templates. BOEM and BSEE, must require US Wind to submit the full acoustic recordings from all the real-time hydrophones to the National Centers for Environmental Information (NCEI) for archiving within 90 calendar days after pile-driving has ended and instruments have been pulled from the water. Archiving guidelines outlined here (https://www.ncei.noaa.gov/products/passive-acoustic-data#tab-3561) must be followed. Confirmation of both submittals must be sent to NMFS GARFO via email. 8. To implement the requirements of RPM 4 and to facilitate monitoring of the incidental take exemption for sea turtles, BOEM, BSEE, USACE, and NMFS must meet twice annually to review sea turtle observation records. These meetings/conference calls will be held in September (to review observations through August of that year) and December (to review observations from September to November) and will use the best available information on sea turtle presence, distribution, and abundance, project vessel activity, and observations to estimate the total number of sea turtle vessel strikes in the action area that are attributable to project operations.	BiOp issued by NMFS on June 18, 2024	BOEM, BSEE, NMFS, USACE
Marine Mammals, Sea Turtles	Pre-C	9. To implement the requirements of RPM 4, within 10 business days of BOEM, BSEE, and/or USACE obtaining updated information on project plans (e.g., as obtained through a relevant Facility Design Report (FDR) and/or Fabrication and Installation Report (FIR), or other submission), BOEM, BSEE, and/or USACE must provide NMFS GARFO (nmfs.gar.incidental-take@noaa.gov) with the following information: number, size, and type of foundations to be installed to support wind turbine generators and electrical service platforms for each project; the proposed construction schedule (i.e., months when pile driving is planned) for each project, and any available updates on anticipated vessel transit routes (e.g., any changes to the ports identified for use by project vessels, confirmation of location of O&M facility) that will be used by project vessels. This information may be provided in separate submissions for each of the three project phases. NMFS GARFO will review this information and, to the maximum extent practicable, within 10 business days of receipt will request a meeting with BOEM, BSEE, and USACE if there is any indication that there are changes to the proposed action that would cause an effect to listed species or critical habitat that was not considered in this Opinion, including the amount or extent of predicted take, such that any potential trigger for reinitiation of consultation can be discussed with the relevant action agencies.	BiOp issued by NMFS on June 18, 2024	BOEM, BSEE, NMFS, USACE

Resource Area Mitigated	Project Stage*	Mitigation and Monitoring Measures	Source	Anticipated Enforcing Agency
Marine Mammals, Sea Turtles	Pre-C	10. To implement RPM 5, BOEM, BSEE, and/or USACE must require, and US Wind must prepare and submit the plans identified below in sufficient time to allow for review and any required approval prior to the planned start date for the associated activities. All plans must be submitted to NMFS GARFO at nmfs.gar.incidental-take@noaa.gov as well as to BOEM (renewable_reporting@boem.gov), BSEE (via TIMSWeb with a notification email to protectedspecies@bsee.gov), and USACE (cenae-r-@usace.army.mil). • Any of the identified plans can be combined such that a single submitted plan addresses multiple requirements provided that the plan clearly identifies which requirements it is addressing. • Within 60 days of issuance of this Biological Opinion, BOEM must schedule a meeting between US Wind and NMFS GARFO to: review the plan requirements, discuss the review/approval process, and develop a schedule for when plans can be expected to be submitted for review. • Between 30 and 90 days before the planned start of foundation installation each year, US Wind must meet with NMFS GARFO, BOEM, BSEE, USACE, and NMFS OPR to review the construction plans and schedule for the upcoming construction season, and review requirements for reporting and notification protocols, and Thorough and Abbreviated SFV requirements. • All plans must be submitted at least 180 days in advance of the planned start of relevant activities (e.g., the foundation installation monitoring plan must be submitted at least 180 days before the planned date for installation of the first pile). For each plan, within 45 calendar days of receipt of the plan, NMFS GARFO will provide comments to BOEM, BSEE, and US Wind, including a determination as to whether the plan is consistent with the requirements outlined in this ITS and/or in Section 3 of this Opinion. If the plan is complete and is determined to be consistent with the identified requirements, NMFS GARFO will provide concurrence with the plan. If the plan is determined to be inconsistent with these requirements (e.g., if required information is missing), US Wind must resubmit a modified plan that addresses the identified issues within 30 days of the receipt of the comments. For all subsequent drafts, US Wind must provide for at least 10 day calendar days for review and comment. BOEM must work with US Wind to ensure that subsequent drafts of each plan are provided to NMFS with adequate time to carry out a thorough review, and any necessary approvals, prior to the associated activity taking place. a. **Marine Mammal and Sea Turtle Monitoring Plan – Foundation Installation (Pile Driving Monitoring Plan)**. BOEM, BSEE, and/or US Wind must submit this Plan to NMFS GARFO at least 180 calendar days before the respective activity is planned to begin (i.e., if foundation installation is planned for May 1, the plan must be submitted no later than November 1 of the preceding year). BOEM, BSEE, and US Wind must obtain NMFS GARFO's concurrence with this Plan(s) prior to the start of any pile driving for foundation installation. o The Plan(s) must include: a description of how all relevant mitigation and monitoring requirements contained in the incidental take statement and those included as part of the proposed action will be implemented; a pile driving installation summary and sequence of events; a description of all monitoring equipment and evidence (i.e., manufacturer's specifications, reports, testing) that it can be used to effectively monitor and detect ESA listed marine mammals and sea turtles in the identified clearance and shutdown zones (i.e., field data demonstrating reliable and consistent ability to detect ESA listed large whales and sea turtles at the relevant distances in the conditions planned for use); communications and reporting details; and PSO monitoring and mitigation protocols (including number and location of PSOs) for effective observation and documentation of sea turtles and ESA listed marine mammals during all foundation installation events. o The Plan(s) must demonstrate sufficient PSO and PAM Operator staffing (in accordance with watch shifts), PSO and PAM Operator schedules, and contingency plans for instances if additional PSOs and PAM Operators are required including any expansion of clearance and/or shutdown zones that may be required as a result of SFV. o The Plan(s) must contain a thorough description of how US Wind will monitor foundation installation activities during reduced visibility conditions (e.g. rain, fog) and in other low visibility conditions, including proof of the efficacy of monitoring devices (e.g., mounted thermal/infrared camera systems, hand-held or wearable night vision devices NVDs, spotlights) in detecting ESA listed marine mammals and sea turtles over the full extent of the required clearance and shutdown zones, including demonstration that the full extent of the minimum visibility zones can be effectively and reliably monitored. The Plan must identify the efficacy of the technology at detecting marine mammals and sea turtles in the clearance and shutdown zones under all the various conditions anticipated during construction, including varying weather conditions, sea states, and in consideration of the use of artificial lighting. o The Plan must contain a thorough description of how US Wind will monitor foundation installation activities during daytime when unexpected changes to lighting or weather occur during pile driving that prevent visual monitoring of the full extent of the clearance and shutdown zones. o The plan must describe how US Wind would determine the number of sea turtles exposed to noise above the 175 dB harassment threshold during foundation installation and how US Wind would determine the number of ESA listed whales exposed to noise above the Level B harassment threshold during foundation installation (in consideration of modeling that indicates that distances to the level B harassment threshold may extend beyond the clearance and shutdown zones being monitored by PSOs).	BiOp issued by NMFS on June 18, 2024	BOEM, BSEE, NMFS, USACE

Resource Area Mitigated	Project Stage*	Mitigation and Monitoring Measures	Source	Anticipated Enforcing Agency
Marine Mammals, Sea Turtles	Pre-C	a. **Nighttime Monitoring Plan – Foundation Installation.** If US Wind seeks to obtain approval for pile driving initiated after dark, BOEM, BSEE, and/or US Wind must submit this Plan to NMFS GARFO at least 180 calendar days before night time foundation installation is planned to begin. BOEM, BSEE, and US Wind must obtain NMFS GARFO's concurrence with this Plan(s) prior to the start of any night time pile driving for foundation installation. This plan can be included as a sub-section of the Marine Mammal and Sea Turtle Monitoring Plan addressed above or as a stand-alone plan. • This Plan(s) must contain a thorough description of how US Wind will monitor foundation installation activities at night, including proof of the efficacy of monitoring devices (e.g., mounted thermal/infrared camera systems, hand-held or wearable night vision devices NVDs, spotlights) in detecting ESA listed marine mammals and sea turtles over the full extent of the required clearance and shutdown zones, including demonstration that the full extent of the minimum visibility zones can be effectively and reliably monitored. • The Plan must identify the efficacy of the technology at detecting marine mammals and sea turtles in the clearance and shutdown zones under all the various conditions anticipated during construction, including varying weather conditions, sea states, and in consideration of the use of artificial lighting. • If the plan does not include a full description of the proposed technology, monitoring methodology, and data demonstrating to NMFS GARFO's satisfaction that marine mammals and sea turtles can reliably and effectively be detected within the clearance and shutdown zones for monopiles and jacket foundations before and during foundation installation, nighttime foundation installation may not occur; the only exception would be if safety necessitates continuing pile installation after dark for a foundation that was initiated 1.5 hours prior to civil sunset, in which case the Low Visibility components of the Pile Driving Monitoring Plan would be implemented. b. **Passive Acoustic Monitoring Plan for Pile Driving**. BOEM, BSEE, and/or US Wind must submit this Plan to NMFS GARFO at least 180 calendar days before Pile Driving is planned. This plan can be included as a sub-section of the Marine Mammal and Sea Turtle Monitoring Plan addressed above. BOEM, BSEE, and US Wind must obtain NMFS GARFO's concurrence with this Plan prior to the start of any foundation installation. • The Plan must include a description of all proposed PAM equipment and hardware, the calibration data, bandwidth capability and sensitivity of hydrophones, and address how the proposed passive acoustic monitoring will follow standardized measurement, processing methods, reporting metrics, and metadata standards for offshore wind (Van Parijs et al., 2021). • The Plan must describe and include all procedures, documentation, and protocols including information (i.e., testing, reports, equipment specifications) to support that it will be able to detect vocalizing whales within the clearance and shutdown zones, including deployment locations, procedures, detection review methodology, and protocols; hydrophone detection ranges with and without foundation installation activities and data supporting those ranges; communication time between call and detection, and data transmission rates between PAM Operator and PSOs on the pile driving vessel; where PAM Operators will be stationed relative to hydrophones and PSOs on pile driving vessel calling for delay/shutdowns; and a full description of all proposed software, call detectors, and filters. • The Plan must also incorporate the requirements relative to North Atlantic right whale reporting in T&C 7. • The Plan must include a description of planned maintenance procedures to ensure effective operations of the PAM system during the pile driving period. Additionally, the plan must describe steps that will be taken if any system component fails during the pile driving period. c. **Sound Field Verification Plan - Foundation Installation**. BOEM, BSEE, and USACE must require US Wind to submit this Plan to NMFS GARFO at least 180 calendar days before pile driving for foundations is planned to begin. BOEM, BSEE, and US Wind must obtain NMFS GARFO's concurrence with this Plan(s) prior to the start of foundation installation. • The Plan must detail all plans and procedures for sound attenuation, including procedures for adjusting and optimizing the noise attenuation system(s), deployment procedures and timelines, maintenance procedures and timelines, and detail the available contingency noise attenuation measures/systems and operational changes to be implemented if distances to modeled isopleths of concern are exceeded (as documented during SFV). This must include consideration for addressing battery life, sediment build up in bubble curtain hoses, and ensuring adequate back up equipment is available. • The plan must describe how US Wind will conduct the required Thorough SFV (T&C 2) for each of the required foundation types, installation methodologies, and locations. This must include an explanation of how the foundation sites planned for Thorough SFV are representative of all other foundation installation sites for a scenario or, if they are not, how US Wind will select additional foundation locations for Thorough SFV. US Wind must provide justification for why the foundation locations selected for Thorough SFV are representative of the scenario modeled. • The plan must describe how US Wind will conduct the required Abbreviated SFV, inclusive of requirements to review results within 24 hours and triggers for Thorough SFV. • The Plan must provide a table of the identification number and coordinates of each foundation location, and specify the underwater acoustics analysis model scenario against which each foundation location's SFV results will be compared.	BiOp issued by NMFS on June 18, 2024	BOEM, BSEE, NMFS, USACE

Resource Area Mitigated	Project Stage*	Mitigation and Monitoring Measures	Source	Anticipated Enforcing Agency
Marine Mammals, Sea Turtles	Pre-C	• The Plan(s) must also include the piling schedule and sequence of events, communication and reporting protocols, and methodology for collecting, analyzing, and preparing SFV data for submission to NMFS, including instrument deployment, locations of all hydrophones (including direction and distance from the pile), hydrophone sensitivity, recorder/measurement layout, and analysis methods. The Plan must also identify the number and distance of relative location of hydrophones for Thorough and Abbreviated SFV. • The plan must include a template of the interim report to be submitted and describe the all the information that will be reported in the SFV Interim Reports including the number, location, depth, distance, and predicted and actual isopleth distances that will be included in the final report(s). • The Plan must describe how the interim SFV report results will be evaluated against the modeled results, including which modeled scenario the results will be reported against, and include a decision tree of what happens if measured values exceed predicted values. • The Plan must address how US Wind will implement the measures associated with the required SFV which includes, but is not limited to, identifying additional or modified noise attenuation measures (e.g., additional noise attenuation device, adjust hammer operations, adjust or modify the noise mitigation system) or operational changes that will be applied if measured distances are greater than those modeled as well as implementation of any expanded clearance or shutdown zones, including deployment of additional PSOs. d. **Vessel Strike Avoidance Plan**. US Wind must submit this plan to NMFS GARFO as soon as possible after issuance of this Biological Opinion but no later than 180 days prior to the planned mobilization of any vessels operated by or under contract to US Wind for the Maryland Wind project (i.e., any vessel associated with construction, operations and maintenance, or decommissioning activities described in this Opinion). The Plan must include: an acknowledgement of the vessels that are subject to the plan; all relevant mitigation and monitoring measures for listed species inclusive of a summary of all applicable vessel speed and approach restrictions in different operational areas; vessel-based observer protocols for transiting vessels; communication and reporting plans; and a description of proposed alternative monitoring equipment to allow lookouts/PSOs to observe vessel strike avoidance zones in varying weather conditions, sea states, darkness, and in consideration of the use of artificial lighting. The plan must also address procedures to be implemented when navigational or crew safety prevent adherence to vessel speed restrictions that would otherwise apply. NMFS GARFO will review this plan and identify any inconsistencies with the requirements for vessel strike avoidance required by regulation or otherwise incorporated into the proposed action considered in the Biological Opinion. With the exceptions noted below, NMFS GARFO's concurrence with this plan is not required prior to vessel mobilization. i. Consistent with the requirements in the proposed MMPA ITA, if US Wind plans to implement PAM in any transit corridor to allow vessel transit above 10 knots, US Wind must prepare a plan (a standalone plan or supplement to the Vessel Strike Avoidance Plan) that describes: the location of each transit corridor (with a map); how PAM, in combination with visual observations, will be conducted to ensure highly effective monitoring for the presence of right whales in the transit corridor; and, the protocols that will be in place for vessel speed restrictions following detection of a right whale via PAM or visual observation. This plan must be provided to NMFS GARFO for review at least 180 days in advance of planned deployment of the PAM system. PAM information should follow what is required to be submitted for the PAM Plan in T&C 10.c. BOEM, BSEE, and US Wind must receive NMFS GARFO's concurrence with this plan prior to implementation of the PAM-monitored transit corridor. This plan will be reviewed in consideration of issues related to navigational and crew safety. **e.** ii. If a separate Vessel Strike Avoidance Plan will be implemented after the expiration of the 5-year effective period of the MMPA ITA, it must be submitted to NMFS GARFO for review and concurrence that operation of project vessels pursuant to the proposed plan would not result in effects to any listed species not considered in this Opinion.	BiOp issued by NMFS on June 18, 2024	BOEM, BSEE, NMFS, USACE
Marine Mammals, Sea Turtles	C, O&M	11. To implement the requirements of RPM 6, BOEM, BSEE, NMFS OPR, and USACE must exercise their authorities to assess the implementation of measures to avoid, minimize, monitor, and report incidental take of ESA listed species during activities described in this Opinion. These agencies shall immediately exercise their respective authorities to take effective action to ensure prompt implementation and compliance if US Wind is not complying with: any avoidance, minimization, and monitoring measures incorporated into the proposed action or any term and condition(s) specified in this statement, as currently drafted or otherwise amended in agreement between these agencies and NMFS; if agencies fail to do so, the protective coverage of Section 7(o)(2) may lapse and reinitiation of consultation may be required.	BiOp issued by NMFS on June 18, 2024	BOEM, BSEE, NMFS, USACE
Marine Mammals, Sea Turtles	C, O&M	12. To implement the requirements of RPM 6, US Wind must consent to on-site observation and inspections by Federal agency personnel (including NOAA personnel) during activities described in the Biological Opinion, for the purposes of evaluating the effectiveness and implementation of measures designed to minimize or monitor incidental take	BiOp issued by NMFS on June 18, 2024	BOEM, BSEE, NMFS. USACE
Marine Mammals, Sea Turtles	C, O&M	13. To implement the requirements of RPM 6, US Wind, BOEM, BSEE, NMFS OPR, and USACE must immediately notify NMFS GARFO of any identified or suspected non-compliance with any measure outlined in this Incidental Take Statement or in any measure incorporated into the proposed action, including measures included in the Final MMPA authorization. This includes the suspected or identified failure in effectiveness of any such measure. This notification must be submitted as soon as the issue is identified to nmfs.gar.incidental-take@noaa.gov and must include a description of the non-compliance or failure of effectiveness of the measure, the date the issue was identified, and any corrective actions that were taken. The report of non-compliance must be followed within 48 hours with a request to meet with NMFS GARFO to discuss the report and seek concurrence from NMFS GARFO on the corrective measures. Neither the lessee nor any action agency may interfere with any reporting to NMFS by a PSO or other personnel of any identified or suspected non-compliance with any such measures or any identified or suspected incidental take.	BiOp issued by NMFS on June 18, 2024	BOEM, BSEE, NMFS, USACE

Resource Area Mitigated	Project Stage*	Mitigation and Monitoring Measures	Source	Anticipated Enforcing Agency
Other Uses (Marine Minerals, Military, Aviation, Scientific Research, and Surveys)	Pre-C, C, O&M, D	BOEM will require US Wind to coordinate prior to mobilization and provide schedule updates to U.S. Fleet Forces Command (USFFC) and the Naval Air Warfare Center Aviation Division (NAWCAD). Following construction, BOEM will require that US Wind to coordinate with USFFC and NAWCAD on relevant operations and maintenance activities.	Military Aviation and Installation Assurance Siting Clearinghouse review issued April 21, 2023	BSEE, DoD/DON
Other Uses (Marine Minerals, Military, Aviation, Scientific Research, and Surveys)	Pre-C, C, O&M	BOEM will require US Wind to provide information regarding deployment of distributed fiber optic sensing technology and passive acoustic monitoring to facilitate a Department of the Navy (DON) risk assessment and will require US Wind to mitigate risk to national security, if identified.	Military Aviation and Installation Assurance Siting Clearinghouse review issued April 21, 2023	BOEM, BSEE, DoD/DON
Other Uses (Marine Minerals, Military, Aviation, Scientific Research, and Surveys)	Pre-C, C, O&M, D	BOEM will require US Wind to provide Department of Defense (DoD)/DON notification and opportunity to assess risk related to foreign investment and material vendors for the project and will require US Wind to address risk to national security requiring mitigation, if identified.	Military Aviation and Installation Assurance Siting Clearinghouse review issued April 21, 2023	BSEE, DoD/DON
Other Uses (Marine Minerals, Military, Aviation, Scientific Research, and Surveys)	O&M	BOEM will require that US Wind completes the following strategies to potentially mitigate adverse impacts to the Wallops Island, Maryland Airport Surveillance Radar model 8 (ASR-8): 1) US Wind will notify NORAD 30-60 days ahead of project completion and when the project is complete and operational for RAM scheduling; 2) US Wind will contribute funds ($80,000) toward the execution of the RAM; 3) Curtailment for National Security or Defense Purposes as described in the leasing agreement.	Military Aviation and Installation Assurance Siting Clearinghouse review issued April 21, 2023	BSEE, DoD/NORAD
Other Uses (Marine Minerals, Military, Aviation, Scientific Research, and Surveys)	Pre-C, C, O&M	BOEM will require that US Wind enter into a mitigation agreement with the DoD to accomplish stipulations set forth by NORAD and DON to mitigate the identified impact.	Military Aviation and Installation Assurance Siting Clearinghouse review issued April 21, 2023	BSEE, DoD
Sea Turtles	C	BOEM and BSEE would ensure that US Wind monitors the full extent of the area where noise would exceed the root-mean-square sound pressure level (SPL) 175 dB re 1 µPa behavioral disturbance threshold for turtles for the full duration of all pile driving activities and for 30 minutes following the cessation of pile driving activities and record all observations in order to ensure that all take that occurs is documented.	BOEM proposed measure in the NMFS BA	BSEE, NMFS
Sea Turtles	C, O&M	Vessels deploying fixed gear (e.g., pots/traps) would have adequate disentanglement equipment (i.e., knife and boathook) onboard. Any disentanglement would occur consistent with the Northeast Atlantic Coast Sea Turtle Disentanglement Network (STDN) Disentanglement Guidelines at Maryland Offshore Wind Construction and Operations Plan for Commercial Lease OCS-A 0490 and the procedures described in "Careful Release Protocols for Sea Turtle Release with Minimal Injury" (NOAA Technical Memorandum 580; Careful release protocols for sea turtle release with minimal injury).	BOEM proposed measure in the NMFS BA	BSEE, NMFS

Resource Area Mitigated	Project Stage*	Mitigation and Monitoring Measures	Source	Anticipated Enforcing Agency
Sea Turtles	C, O&M	• For all vessels operating north of the Virginia/North Carolina border, between June 1 and November 30, US Wind would have a trained lookout posted on all vessel transits during all phases of the project to observe for sea turtles. The trained lookout would communicate any sightings, in real time, to the captain so that the requirements below can be implemented. • For vessel transits in New England (ME, MA, RI, CT) and Long Island waters, the trained lookout will monitor Sea Turtle Sighting Hotline for New England Boaters prior to each trip and report any observations of sea turtles in the vicinity of the planned transit to all vessel operators/captains and lookouts on duty that day as an aid to situational awareness. Sea Turtle Sighting Hotline for New England Boaters should not be considered indicative of the magnitude of sea turtle presence or absence of sea turtles given sightings are opportunistic and voluntarily reported. • The trained lookout would monitor Sea Turtle Sighting Hotline for New England Boaters prior to each trip and report any observations of sea turtles in the vicinity of the planned transit to all vessel operators/captains and lookouts on duty that day. • The trained lookout would maintain a vigilant watch and monitor a Vessel Strike Avoidance Zone (500 meters) at all times to maintain minimum separation distances from ESA-listed species. Alternative monitoring technology (e.g., night vision, thermal cameras, etc.) would be available to ensure effective watch at night and in any other low visibility conditions. If the trained lookout is a vessel crew member, this would be their designated role and primary responsibility while the vessel is transiting. Any designated crew lookouts would receive training on protected species identification, vessel strike minimization procedures, how and when to communicate with the vessel captain, and reporting requirements. • If a sea turtle is sighted within 100 meters or less of the operating vessel's forward path, the vessel operator would slow down to 4 knots (unless unsafe to do so) and then proceed away from the turtle at a speed of 4 knots or less until there is a separation distance of at least 100 meters, at which time the vessel may resume normal operations. If a sea turtle is sighted within 50 meters of the forward path of the operating vessel, the vessel operator would shift to neutral when safe to do so and then proceed away from the turtle at a speed of 4 knots. The vessel may resume normal operations once it has passed the turtle. • Vessel captains/operators would avoid transiting through areas of visible jellyfish aggregations or floating sargassum lines or mats. In the event that operational safety prevents avoidance of such areas, vessels would slow to 4 knots while transiting through such areas. • All vessel crew members would be briefed in the identification of sea turtles and in regulations and best practices for avoiding vessel collisions. Reference materials would be available aboard all project vessels for identification of sea turtles. The expectation and process for reporting of sea turtles (including live, entangled, and dead individuals) would be clearly communicated and posted in highly visible locations aboard all project vessels, so that there is an expectation for reporting to the designated vessel contact (such as the lookout or the vessel captain), as well as a communication channel and process for crew members to do so. • The only exception is when the safety of the vessel or crew necessitates deviation from these requirements on an emergency basis. If any such incidents occur, they would be reported to NMFS within 24 hours. • If a vessel is carrying a PSO or trained lookout for the purposes of maintaining watch for NARWs, an additional lookout is not required and this PSO or trained lookout would maintain watch for marine mammals and sea turtles. • Vessel transits to and from the Offshore Project area, that require PSOs will maintain a speed commensurate with weather conditions and effectively detecting sea turtles prior to reaching the 100 meters avoidance measure.	BOEM proposed measure in the NMFS BA	BSEE, NMFS
Sea Turtles	O&M	To facilitate monitoring of the incidental take exemption for sea turtles, through the first year of operations, BOEM, BSEE, and NMFS would meet twice annually to review sea turtle observation records. These meetings/conference calls would be bi-annually) and would use the best available information on sea turtle presence, distribution, and abundance, project vessel activity, and observations to estimate the total number of sea turtle vessel strikes in the action area that are attributable to project operations. These meetings would continue on an annual basis following year 1 of operations. Upon mutual agreement of NMFS, BSEE, and BOEM, the frequency of these meetings can be changed.	BOEM proposed measure in the NMFS BA	BSEE, NMFS

Resource Area Mitigated	Project Stage*	Mitigation and Monitoring Measures	Source	Anticipated Enforcing Agency
Sea Turtles, ESA-listed fish	C, O&M	Any sea turtles or ESA-listed fish caught and/or retrieved in any fisheries survey gear would first be identified to species or species group. Each ESA-listed species caught and/or retrieved would then be properly documented using appropriate equipment and data collection forms. Biological data, samples, and tagging would occur as outlined below. Live, uninjured animals should be returned to the water as quickly as possible after completing the required handling and documentation. • The Sturgeon and Sea Turtle Take Standard Operating Procedures would be followed (download at: External Sturgeon Take SOPs). • Survey vessels would have a passive integrated transponder (PIT) tag reader onboard capable of reading 134.2 kHz and 125 kHz encrypted tags (e.g., Biomark GPR Plus Handheld PIT Tag Reader) and this reader be used to scan any captured sea turtles and sturgeon for tags. Any recorded tags would be recorded on the take reporting form (see below). • Genetic samples would be taken from all captured ESA-listed fish (alive or dead) to allow for identification of the DPS of origin of captured individuals and tracking of the amount of incidental take. This would be done in accordance with the Procedures for Obtaining Sturgeon Fin Clips (download at: Procedure for obtaining fin clips from sturgeon for genetic analysis). ○ Fin clips would be sent to a NMFS approved laboratory capable of performing genetic analysis and assignment to DPS of origin. To the extent authorized by law, BOEM is responsible for the cost of the genetic analysis. Arrangements would be made for shipping and analysis in advance of submission of any samples; these arrangements would be confirmed in writing to NMFS within 60 days of the receipt of this ITS. Results of genetic analysis, including assigned DPS of origin would be submitted to NMFS within 6 months of the sample collection. ○ Subsamples of all fin clips and accompanying metadata forms would be held and submitted to a tissue repository (e.g., the Atlantic Coast Sturgeon Tissue Research Repository) on a quarterly basis. The Sturgeon Genetic Sample Submission Form is available for download at: Sturgeon Genetic Sample Submission sheet for S7 Form to Use. • All captured sea turtles and ESA-listed fish would be documented with required measurements and photographs. The animal's condition and any marks or injuries would be described. This information would be entered as part of the record for each incidental take. A NMFS Take Report Form would be filled out for each individual sturgeon and sea turtle (download at: Take Report Form for ESA-Listed Species) and submitted to NMFS as described below.	BOEM proposed measure in the NMFS BA	BSEE, NMFS
Sea Turtles, ESA-listed fish	C, O&M	Any sea turtles or ESA-listed fish caught and retrieved in gear used in fisheries surveys would be handled and resuscitated (if unresponsive) according to established protocols and whenever at-sea conditions are safe for those handling and resuscitating the animal(s) to do so. Specifically: • Priority would be given to the handling and resuscitation of any sea turtles or ESA-listed fish that are captured in the gear being used, if conditions at sea are safe to do so. Handling times for these species should be minimized (i.e., kept to 15 minutes or less) to limit the amount of stress placed on the animals. • All survey vessels would have copies of the sea turtle handling and resuscitation requirements found at 50 CFR 223.206(d)(1) prior to the commencement of any on-water activity (download at: Sea Turtle Handling and Resuscitation). These handling and resuscitation procedures would be carried out any time a sea turtle is incidentally captured and brought onboard the vessel during the Proposed Actions. • If any sea turtles that appear injured, sick, or distressed, are caught and retrieved in fisheries survey gear, survey staff would immediately contact the Greater Atlantic Region Marine Animal Hotline at 866-755-6622 for further instructions and guidance on handling the animal, and potential coordination of transfer to a rehabilitation facility. If unable to contact the hotline (e.g., due to distance from shore or lack of ability to communicate via phone), the USCG should be contacted via VHF marine radio on Channel 16. If required, hard-shelled sea turtles (i.e., non-leatherbacks) may be held on board for up to 24 hours following handling instructions provided by the Hotline, prior to transfer to a rehabilitation facility. • Attempts would be made to resuscitate any ESA-listed fish that are unresponsive or comatose by providing a running source of water over the gills as described in the Sturgeon Resuscitation Guidelines (download at: Atlantic & Shortnose Sturgeon). • Provided that appropriate cold storage facilities are available on the survey vessel, following the report of a dead sea turtle or sturgeon to NMFS, and if NMFS requests, any dead sea turtle or ESA-listed fish would be retained on board the survey vessel for transfer to an appropriately permitted partner or facility on shore as safe to do so. • Any live sea turtles or ESA-listed fish caught and retrieved in gear used in any fisheries survey would ultimately be released according to established protocols and whenever at-sea conditions are safe for those releasing the animal(s) to do so.	BOEM proposed measure in the NMFS BA	BSEE
Sea Turtles, ESA-listed fish	C, O&M	GARFO PRD would be notified as soon as possible of all observed takes of sea turtles and ESA-listed fish occurring as a result of any fisheries survey. Specifically: • GARFO PRD and BSEE would be notified within 24 hours of any interaction with a sea turtle or ESA-listed fish (nmfs.gar.incidental-take@noaa.gov). The report would include at a minimum: (1) survey name and applicable information (e.g., vessel name, station number); (2) GPS coordinates describing the location of the interaction (in decimal degrees); (3) gear type involved (e.g., bottom trawl, gillnet, longline); (4) soak time, gear configuration and any other pertinent gear information; (5) time and date of the interaction; and (6) identification of the animal to the species level. Additionally, the email would transmit a copy of the NMFS Take Report Form (download at: Take Report Form for ESA-Listed Species) and a link to or acknowledgement that a clear photograph or video of the animal was taken (multiple photographs are suggested, including at least one photograph of the head scutes). If reporting within 24 hours is not possible due to distance from shore or lack of ability to communicate via phone, fax, or email, reports would be submitted as soon as possible; late reports would be submitted with an explanation for the delay. • At the end of each survey season, US Wind would prepare a report that would be sent to NMFS that compiles all information on any observations and interactions with ESA-listed species. This report would also contain information on all survey activities that took place during the season including location of gear set, duration of soak/trawl, and total effort. The report on survey activities would be comprehensive of all activities, regardless of whether ESA-listed species were observed.	BOEM proposed measure in the NMFS BA	BSEE, NMFS

Resource Area Mitigated	Project Stage*	Mitigation and Monitoring Measures	Source	Anticipated Enforcing Agency
Benthic resources, finfish, invertebrates, and EFH	C, O&M	*Recommendations to Avoid and Minimize Impacts to Estuarine Habitats (Indian River Bay and Inlet, Delaware and Sinepuxent Bay, Maryland)* 1. Locate the inshore export cable (IEC) entirely on uplands (Alternative C-2 in the FEIS) to avoid adverse impacts to EFH and other NOAA trust resources in Indian River Bay (IRB). 2. If dredging is authorized in IRB, restore the dredged footprint to pre-construction conditions with clean, compatible materials or with material removed during dredging. 3. Avoid trenching (without immediate backfill/infill), sidecasting, and other open-water disposal in open nearshore/estuarine waters, including in IRB. If open trenching is used, excavated materials should not be sidecast or placed in the aquatic environment. All materials should be stored on uplands or barges and placed back into the trench to restore the excavated areas, or removed to a suitable upland disposal site. Trenched areas should be restored to pre-construction conditions with native and/or clean, compatible material. 4. Avoid in-water work in Indian River Bay and Inlet from March 1 to September 30 to avoid and minimize impacts to EFH, federally managed species, their prey, and other resources under our purview including: i. Avoid in-water work in Indian River Bay from April 1 to September 30 to avoid impacts to nursery habitat for summer flounder, black sea bass, and numerous other estuarine-dependent species. ii. Avoid in-water work in Indian River Bay from March 1 to June 30 in Indian River Inlet and Bay to minimize impacts to diadromous fish migrations. 5. Avoid in-water work, including impact pile driving from February 15 to June 30 in Sinepuxent Bay to minimize impacts to migrating diadromous species. 6. Prior to commencement of in-water work within IRB, delineate areas of shellfish in accordance with the methods used by the Delaware Department of Natural Resources and Environmental Control. Maps of delineated shellfish beds should be provided to vessel operators to facilitate impact avoidance. 7. Avoid siting infrastructure, including cables, piers, and gravity cells for HDD entrance/exit pits in ecologically sensitive estuarine areas including, but not limited to, SAV beds, mudflats, tidal wetlands, shellfish beds/reefs. 8. Avoid anchoring or placing jack-up barge piles or spud cans in ecologically sensitive estuarine areas including, but not limited to, SAV beds, mudflats, tidal wetlands, shellfish beds/reefs. Habitat maps delineating these resources should be provided to vessel operators to facilitate impact avoidance. 9. Avoid excavation, cable installation, or the staging of equipment within tidal wetlands, SAV or mudflat. Where unavoidable impacts to SAV, wetlands or mudflats occur, provide compensatory mitigation in accordance with 33 CFR Parts 325 and 332 "Compensatory Mitigation for Losses of Aquatic Resources," (Mitigation Rule) and NOAA's Mitigation Policy for Trust Resource). The plan should be submitted to our office (NMFS.GAR.HESDoffshorewind@noaa.gov) for review and include monitoring and maintenance/adaptive management plan, be monitored for a minimum of five years, and annual reports should be provided to our office. 10. Require vessels and barges float at all stages of the tide to minimize benthic habitat impacts from vessel operation/barge grounding. 11. Dewater all dredged material at an upland site for subsequent disposal in an upland location or to be reused to restore dredged areas. 12. Within IRB, capture and contain HDD drilling muds and dispose of these materials in an upland location. 13. Develop and implement a frac-out plan for all areas where HDD is proposed to be used. A copy of the final plan should be provided to NMFS HESD at NMFS.GAR.HESDoffshorewind@noaa.gov prior to construction.	NMFS-proposed EFH Conservation Recommendations (correspondence dated May 2, 2024)	USACE, DNREC, MDE

Resource Area Mitigated	Project Stage*	Mitigation and Monitoring Measures	Source	Anticipated Enforcing Agency
Benthic resources, finfish, invertebrates, and EFH	C, O&M	*Recommendations to Avoid and Minimize Impacts to Benthic Habitats (Offshore and/or Nearshore)* 14. Avoid impacts to areas of high relief sand ridge and trough complexes and large distinct bathymetric features by removing or relocating 11 WTGs, associated inter-array cables, and repositioning the corresponding OEC (as outlined in Alternative E in the EIS). 15. Avoid the placement of all infrastructure (cables, WTGs, OSSs, scour protection, met tower, etc.) in sensitive and ecologically important habitats including complex habitats, sand waves, biogenic habitats, including shellfish beds, aggregations, and reefs, hard and soft corals, and soft bottom habitats with dense emergent fauna (e.g. octocorals and pennatulids, tube dwelling anemones and structure forming amphipods and polychaetes). 16. Minimize the extent of inter array cables overlapping sand ridge and trough complexes and other bathymetric features identified by NMFS as Areas of Concerns (Alternative E) by modifying the inter array layout configuration to reduce the extent of disturbance, leveling, or removal of complex habitats and benthic features, including sand waves (inclusive of sand ridge and trough complexes) due to site preparation and installation of cables, WTGs, and OSSs. The final inter array cable configuration, including modifications to reduce impacts to these important features should be provided to NMFS HESD at NMFS.GAR.HESDoffshorewind@noaa.gov. 17. The portion of the export cable corridor that overlaps with New Jersey Prime Fishing Areas (also identified as Areas of Concern in the EIS) should be microsited to minimize impacts/overlap with complex and heterogeneous complex habitat and sand waves. This may include micrositing or identifying areas outside the proposed cable corridor that would reduce overlap with the New Jersey Prime Fishing areas and associated complex habitats. 18. Microsite WTGs, OSSs, and cables to minimize impacts to small-scale habitat elements/features including areas identified as complex and heterogeneous complex habitats and sand waves. Soft bottom areas (identified by low multibeam backscatter returns) absent benthic features and biogenic/living resources should be targeted for micrositing. Multibeam echosounder backscatter and side-scan sonar data along with seafloor samples/visual surveys should be used to facilitate micrositing to avoid the above-mentioned habitats. 19. To the extent practicable, cables unable to avoid complex habitats and benthic features should cross mapped complex habitat areas (including complex and heterogeneous complex habitats) perpendicularly at the narrowest points and be sited along natural benthic contours within troughs/lows, to maximize cable burial while minimizing disturbance to local submarine topography. 20. Cables (interarray, interconnection, interlink, and export) should be installed into the existing seafloor via jetting (i.e., jet trenching) or mechanical trenching with simultaneous lay and burial and laid in ways that maintain submarine topography and contours on medium (meter) to large (kilometer) scales; benthic features including megaripples and sand waves (inclusive of sand ridge and troughs and sand banks) should be maintained. 21. All cables should be sited to allow for full burial depth, prioritizing soft bottom habitat where full burial depth is likely to occur, to minimize permanent adverse impacts to existing benthic habitats from the placement of scour protection. 22. Avoid anchoring or placing jack-up barge footings and spud cans in sensitive and ecologically important habitats such as complex habitats, sand waves, shellfish beds and reefs, hard and soft corals, and soft bottom habitats with dense emergent fauna (e.g. octocorals and pennatulids, tube dwelling anemones). Multibeam echosounder backscatter and side-scan sonar data as well as all sampling data available for the lease area should be used to facilitate avoidance of these habitats. Habitat maps identifying or delineating these resources should be provided to vessel operators to facilitate impact avoidance. 23. Use dynamic positioning systems (DPS) or mid-line buoys on anchor chains to minimize adverse impacts to benthic habitats from anchor chains/chain sweep. 24. If anchoring for cable installation is necessary in areas with complex and heterogeneous complex habitats, large benthic features, including sand waves, ridge and trough complexes, sandbanks, and sand shoals, anchor lines should be extended to the extent practicable to minimize the number of times the anchors must be raised and lowered to reduce the amount of habitat disturbance. 25. In areas where scour protection is required, use Nature Inclusive Design principles, including natural or rounded engineered stone of consistent grain size that mimics the properties of existing pebble, cobble, and boulder sediments within the lease area and export cable corridors (OEC and IEC) to minimize permanent adverse impacts of habitat conversion from scour protection. Any exposed surface layer should provide three-dimensional structural complexity that creates a diversity of crevice sizes (e.g., mixed stone sizes) and rounded edges (e.g., tumbled stone), and be sloped such that outer edges match the natural grade of the seafloor. Avoid the use of angular stone riprap or concrete mattresses. Should the use of concrete mattresses be necessary (e.g. cable crossings), bioactive concrete (i.e., with bio-enhancing admixtures) should be used as the primary scour protection (e.g., concrete mattresses) or veneer to support biotic growth. 26. Regrade any berm created from the cable installation that exceeds 4.5 ft. above the existing grade to bury the cable to match the existing grade/pre-construction conditions. 27. Avoid the use of plastics/recycled polyesters/net material (i.e. rock-filled mesh bags, fronded mattresses, scour protection mats) in all scour protection.	NMFS-proposed EFH Conservation Recommendations (correspondence dated May 2, 2024)	BOEM, BSEE, USACE

Resource Area Mitigated	Project Stage*	Mitigation and Monitoring Measures	Source	Anticipated Enforcing Agency
Benthic resources, finfish, invertebrates, and EFH	C, O&M	*Recommendations to Minimize Acoustic Impacts* 28. Require the use of noise mitigating measures during pile driving to minimize impacts from offshore pile installation/driving. This may include using vibratory hammers, noise-impact reducing hammers, soft start/ramp up procedures and the deployment of noise dampening equipment such as bubble curtains that achieves a minimum 10 decibel (dB) attenuation. 29. Use additional noise dampening/mitigation measures during all impact pile driving within 13.6 kilometers (km) of any artificial reef sites/shipwrecks/fish havens (including "Old Grounds") to minimize impacts (noise above the behavioral threshold for fish) to areas where fish are known to aggregate. If sound field verification indicates the behavioral threshold for fish extends beyond the modeled 13.6 km, additional noise dampening/mitigation measures should be used. Additional noise mitigation measures may include, but are not limited to, isolation casings, isolation casings with bubble curtains inside, and double-walled isolation casings. 30. Prohibit continuous pile driving for 24 hours/day. A minimum mandatory quiet period of at least 4 hours should be required per 24 hours to minimize effects from pile driving. 31. Provide acoustic monitoring reports that include any/all noise-related monitoring to NMFS HESD at NMFS.GAR.HESDoffshorewind@noaa.gov. 32. Notify NMFS HESD within 24 hours if any evidence of a fish kill during construction activity is observed. Prior to resuming pile driving activities, provide NMFS with information on modifications that will be made to reduce the risk of additional fish kills in the project area (i.e. an adaptive management plan).	NMFS-proposed EFH Conservation Recommendations (correspondence dated May 2, 2024)	BOEM, BSEE, USACE
Benthic resources, finfish, invertebrates, and EFH	C, O&M, D	*Recommendations Minimize Impacts from Project Operation* 33. Require, as a Term and Condition of COP approval, the Lessee develop and implement a Lionfish Adaptive Management Plan. The plan should include regular monitoring for lionfish in the project area and identify mitigation options to reduce the proliferation of the invasive species. The plan should be provided to NMFS HESD at NMFS.GAR.HESDoffshorewind@noaa.gov for review and comment. The plan should be updated based on comments received by NMFS. 34. Bury high voltage subsea cables as deep as possible below the stable seabed to minimize impacts to habitats and species from exposure to anthropogenically elevated electromagnetic fields (EMFs) and heat. 35. Avoid any activities (i.e., site preparation) or placement of permanent infrastructure within 1000 ft. of any designated artificial reef sites, observed fish havens, Prime Fishing Areas (N.J. A.C 7:7-9-4), known shipwrecks, or other fish aggregation areas such as subway cars, tanks, or rail cars. 36. Require the implementation of preventive measures and spill plans to minimize the risk of contaminant emissions or accidental release of chemicals, grout, lubricants, etc. that may adversely impact pelagic habitat. Such measures may include backup systems, secondary containments, closed loop systems, and/or recovery tanks. 37. Use aluminum (Al) sacrificial anodes instead of zinc (Zn) anodes to minimize the risk of water quality impacts via contamination.	NMFS-proposed EFH Conservation Recommendations (correspondence dated May 2, 2024)	BOEM, BSEE, USACE

Resource Area Mitigated	Project Stage*	Mitigation and Monitoring Measures	Source	Anticipated Enforcing Agency
Benthic resources, finfish, invertebrates, and EFH	C, O&M	*Recommendations for Monitoring* 38. Develop an in situ project specific monitoring program to address impacts of the operation of the Maryland Wind Project on EFH. This monitoring recommendation is consistent with principles outlined in NOAA's Mitigation Policy for Trust Resources, which highlights the use of the best available scientific information, such as results of surveys and other data collection efforts when existing information is not sufficient for the evaluation of proposed actions and mitigation, or when additional information would facilitate more effective or efficient mitigation recommendations. The project specific monitoring program should include Benthic Habitat and Fisheries Monitoring Plans that measure, in situ, the stressors created by project operation on the ecosystem from operational noise, electromagnetic fields (EMF), wind wake effects, and the presence of structures. Studies should also evaluate the biological effects of those stressors on commercially important species in the project area such as black sea bass and whelk. Monitoring plans should include the collection of a minimum of three years of baseline data, during construction, and a minimum of five years of post-construction data collection. Plans should be incorporated into a comprehensive monitoring strategy and be provided to NOAA Fisheries GARFO and NEFSC for review and comment within 90 days of ROD issuance. A response to NOAA Fisheries comments should be provided. All data and metadata resulting from research and monitoring studies should be provided to NOAA Fisheries. These monitoring studies should be developed in partnership with NOAA Fisheries and other scientific institutions to aid in addressing the following questions: a. What are the measurable levels of exposure of specific impact producing factors (IPFs; i.e., sound and particle motion, EMF, wind wake effects, presence of structure induced vertical mixing) within the project area during and post-construction? b. How do commercially important species (e.g. black sea bass) within the project area respond to the exposure to specific IPFs identified? c. To what extent has benthic habitat within the project area been converted or fragmented as a result of project construction? d. What are the measurable impacts on the regional hydrodynamic regime, and specifically the Mid-Atlantic Cold Pool, as a result of the presence of structures within the project area? e. Does the presence of novel hard structures (WTGs, OSS, and associated scour protection) change the distribution and abundance of exotic, invasive species, including the Indo-Pacific lionfish [Pterois volitans and P. miles]) in the project area? i. To what extent do the presence of structures in the wind farm facilitate colonization by exotics or invasive species? ii. What are the distributions and abundances of exotics or invasive species in the wind farm area broken down by structure and composition type (e.g., WTG, steel; scour protection, mattress)? iii. How do individual structures or wind farm as a whole change the thermal regime, especially in the context of facilitating overwintering/colonization of invasive lionfish? iv. Do lionfish exhibit age-specific habitat preferences on novel wind farm structures (i.e., do young-of-year lionfish prefer scour protection while adult lionfish prefer vertical monopile)? 1. v. Do the presence of structures facilitate expansion (i.e., stepping stone effects) of exotics or invasives, including lionfish?	NMFS-proposed EFH Conservation Recommendations (correspondence dated May 2, 2024)	BOEM, BSEE, USACE
Benthic resources, finfish, invertebrates, and EFH	C, O&M, D	*Recommendations for Reinitiating EFH Consultation* 39. The EFH consultation should be reinitiated: a. If the proposed action deviates in any substantive way from what is described in the EFH Assessment; b. If boulders are encountered during pre-construction or construction activities that require removal or relocation because the EFH Assessment does not currently consider boulder relocation activities or what would occur if boulders are encountered. c. If additional dredging in IRB beyond what is described in the March 22, 2024, is proposed. d. If dredging is proposed at the O&M facility in West Ocean City, MD. e. If dredged material placement locations are changed to include placing any dredged material in wetlands or other aquatic habitats, including any proposed beneficial use projects. f. Prior to decommissioning WTGs to ensure that the impacts to EFH as a result of the decommissioning activities have been fully evaluated and minimized to the extent practicable. Pre-consultation coordination with our agency related to decommissioning should occur early, at least five years prior to proposed decommissioning.	NMFS-proposed EFH Conservation Recommendations (correspondence dated May 2, 2024)	BOEM, BSEE, USACE

*C = Construction; O&M = Operations and Maintenance; D = Decommissioning

AMP = alternative monitoring plan; BOEM = Bureau of Ocean Energy Management; BSEE = Bureau of Safety and Environmental Enforcement; CFR = Code of Federal Regulations; COP = Construction and Operations Plan; CWA = Clean Water Act; DOI = Department of the Interior ; DPS = distinct population segment; EFH = Essential Fish Habitat; EIS = Environmental Impact Statement; ESA = Endangered Species Act; GARFO PRD = Greater Atlantic Regional Fisheries Office Protected Resources Division; IOOS = Integrated Ocean Observing System; ITS = Incidental Take Statement; LOA = Letter of Authorization; MMPA = Marine Mammal Protection Act; MOA = Memorandum of Agreement; NARW = North Atlantic right whale; NHPA = National Historic Preservation Act; NMFS = National Marine Fisheries Service; NPS = National Park Service; NTL = Notice to Lessees; NVD = night vision devices; OCS = Outer Continental Shelf; PAM = passive acoustic monitoring; PSO = protected species observer; ROD = Record of Decision; SPL = sound pressure level; USACE = U.S. Army Corps of Engineers; USCG = U.S. Coast Guard; USFWS = U.S. Fish and Wildlife Service; USGS = U.S. Geological Survey; WTG = wind turbine generator

Table G-3. Additional proposed mitigation and monitoring measures

Resource Area Mitigated	Project Stage*	Mitigation and Monitoring Measures	Source	Anticipated Enforcing Agency
ESA-listed Species	C, O&M, D	The measures required by the final ESA consultation would be incorporated into COP approval, and BOEM and/or NMFS would monitor compliance with these measures.	BOEM proposed measure	BOEM, BSEE, NMFS
Marine Mammals, Sea Turtles	C, O&M	All sampling gear would be hauled at least once every 30 days, and all gear would be removed from the water and stored on land between survey seasons to minimize risk of entanglement.	BOEM proposed measure; Proposed MMPA ITA (89 Fed. Reg. 504; January 4, 2024)	BSEE, NMFS
Marine Mammals, Sea Turtles	C, O&M	If any survey gear is lost, all reasonable efforts that do not compromise human safety would be undertaken to recover the gear. All lost gear would be reported to NMFS (nmfs.gar.incidental-take@noaa.gov and BSEE at marinedebris@bsee.gov and TIMSWeb) within 24 hours of the documented time of missing or lost gear. This report would include information on any markings on the gear and any efforts undertaken or planned to recover the gear.	BOEM proposed measure; Proposed MMPA ITA (89 Fed. Reg. 504; January 4, 2024)	BSEE, NMFS
Commercial Fisheries and For-hire Recreational Fishing	C, O&M, D	BOEM would require that US Wind implement a compensation program for lost income for commercial and recreational fishermen 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, if adopted, would reduce impacts from the impact- producing factor (IPF) presence of structures by compensating commercial and recreational fishing interests for lost income during construction and a minimum of 5 years post-construction. If adopted, this measure would reduce the negligible to major impact level from the presence of structures to negligible to moderate. This is because a compensation scheme will mitigate "indefinite" impacts to a level where the fishing community would have to adjust somewhat to account for disruptions due to impacts but income losses would be mitigated.	BOEM proposed measure	BOEM, BSEE
Marine Mammals; Sea Turtles; Finfish, Invertebrates, and EFH	O&M	US Wind must monitor indirect effects associated with charter and recreational fishing gear lost from expected increases in fishing around WTG foundations by surveying at least 10 of the WTGs located closest to shore in the US Wind Lease Area annually. Survey design and effort may be modified with review and concurrence by BOEM and BSEE. US Wind may conduct surveys by remotely operated vehicles, divers, or other means to determine the frequency and locations of marine debris. US Wind must report the results of the surveys to BOEM (at renewable_reporting@boem.gov) and BSEE (at marinedebris@bsee.gov and TIMSWeb) in an annual report, submitted by April 30, for the preceding calendar year. Photographic and videographic materials must be provided with the submission in TIMSWeb (TIFF or Motion JPEG 2000). Annual reports must include survey reports that include: the survey date; contact information of the operator; the location and pile identification number; photographic and/or video documentation of the survey and debris encountered; any animals sighted; and the disposition of any located debris (i.e., removed or left in place). Annual reports must also include claim data attributable to the Project from US Wind corporate gear loss compensation policy and procedures. Required data and reports may be archived, analyzed, published, and disseminated by BOEM or BSEE.	BOEM proposed measure	BSEE
Marine Mammals; Benthic resources, Finfish, Invertebrates, and EFH	C, O&M, D	US Wind will comply with all mitigation required by USACE for CWA Section 404 and Section 10 impacts.	USACE Section 404/10 permit	USACE
Commercial Fisheries and For-Hire Recreational Fishing; Marine Mammals; Finfish, Invertebrates, and EFH; Navigation and Vessel Traffic; Other Uses	C, O&M, D	US Wind will comply with BOEM, BSEE, FAA, and USCG Lighting and Marking Guidelines.	BOEM proposed measure	BOEM, BSEE, USCG
Navigation and Vessel Traffic	O&M	BOEM and BSEE will ensure that US Wind monitor the inter-array and export cables through scheduled inspections (6 months following installation, within 1 year following initial post installation inspections, every three years thereafter and within 180 days of storm qualifying storm events) to assess cable locations, burial depths, site conditions and the state of the cables. Monitoring results will be reported to BSEE. If conditions along the cable or the state of the cable have significantly changed, the Lessee will provide BSEE with a remedial action plan, a seabed stability and/or cable integrity analysis and schedule for completing remedial action for BSEE's review and concurrence. If BSEE determines that the condition of the cable(s) or conditions along the cable corridor warrant adjusting the frequency of inspections (e.g., due to changes in cable burial or seabed conditions that may impact cable stability or other users of the seabed), then BSEE may require a revised inspection schedule.	BOEM proposed measure	BOEM, BSEE
Navigation and Vessel Traffic	C, O&M, D	US Wind would design the inshore export cable corridor to avoid—to the greatest extent feasible—the federally designated, state-maintained Indian River Inlet and Bay navigation channel. Where the inshore export cable corridor crosses this navigation channel, US Wind would bury the cable deep enough to safely allow dredging to the depths established by USACE.	BOEM proposed measure	USACE, and DNREC

Resource Area Mitigated	Project Stage*	Mitigation and Monitoring Measures	Source	Anticipated Enforcing Agency
Other Uses (Marine Minerals, Military and National Security Uses, Aviation and Air Traffiic, Radar Systems, Scientific Research, Surveys and Search and Rescue)	O&M	US Wind will enter into a mitigation agreement with NOAA, to mitigate operational impacts on oceanographic high-frequency radars. Possible mitigation measures might include the following: • US Wind's Project has the potential to interfere with oceanographic high-frequency (HF) radar systems in the U.S. Integrated Ocean Observing System (IOOS), which is managed by the IOOS Office within the National Oceanic and Atmospheric Administration (NOAA) pursuant to the Integrated Coastal and Ocean Observation System Act of 2009 (Pub. L. 111-11), as amended by the Coordinated Ocean Observation and Research Act of 2020 (Public Law 116-271, Title I), codified at 33 U.S.C. 3601–3610 (referred to herein as "IOOS HF-radar"). IOOS HF-radar measures the sea state, including ocean surface current velocity and waves in near real time. These data have many vital uses ("mission objectives"), including tracking and predicting the movement of spills of hazardous materials or other pollutants, monitoring water quality, and predicting sea state for safe marine navigation. The U.S. Coast Guard also integrates IOOS HF-radar data into its Search and Rescue systems. US Wind's Project is within the measurement range of 1 IOOS HF-radar SeaSonde® system operated by the University of Delaware in Cape Henlopen, DE, 2 IOOS HF-radar SeaSonde systems operated by Old Dominion University in Assateague Island, MD and Cedar Island, VA, and 6 IOOS HF-radar SeaSonde systems operated by Rutgers University in: Brigantine, NJ; Cape May Point, NJ; Loveladies, NJ; North Wildwood, NJ; Strathmere, NJ; and Wildwood, NJ. ○ Mitigation Requirement: Due to the potential interference with IOOS HF-radar and the risk to public health, safety, and the environment, US Wind must mitigate unacceptable interference with IOOS HF-radar from the Project. Interference must be mitigated before commissioning the first WTG or before blades start spinning, whichever is earlier, and interference mitigation must continue throughout operations and decommissioning until the point of decommissioning where all rotor blades are removed. Interference is considered unacceptable if, as determined by BOEM in consultation with NOAA's IOOS Office, IOOS HF-radar performance falls or may fall outside any of the specific radar systems' operational parameters or fails or may fail to meet IOOS's mission objectives. ○ Mitigation Review: US Wind must submit to BOEM documentation demonstrating how it will mitigate unacceptable interference with IOOS HF-radar systems. The Lessee must submit this documentation to BOEM at least 120 days prior to commissioning the first WTG or the start of blades spinning, whichever is earlier. If, after consultation with the NOAA IOOS Office, BOEM deems the mitigation acceptable, US Wind must conduct activities in accordance with the proposed mitigations. If, after consultation with NOAA IOOS Office, BOEM deems the mitigation unacceptable, the Lessee must resolve all comments on the documentation to BOEM's satisfaction. ○ Mitigation Agreement: US Wind is encouraged to enter into an agreement with the NOAA IOOS Office to implement mitigation, and any such Mitigation Agreement may satisfy the requirement to mitigate interference with IOOS HF-radar. The point-of-contact for development of a Mitigation Agreement with the NOAA IOOS Office is the Surface Currents Program Manager, whose contact information is available at Meet the U.S. IOOS Office and upon request from BOEM. ○ Mitigation Implementation: Mitigation required under the above Mitigation Agreement must address the following: ○ Before commissioning the first WTG or before blades start spinning, whichever is earlier, and continuing throughout the life of the Project until the point of decommissioning when all rotor blades are removed, US Wind must make publicly available via NOAA IOOS near real-time, accurate numerical telemetry of surface current velocity, wave height, wave period, wave direction, and other oceanographic data measured at Project locations selected by US Wind in coordination with the NOAA IOOS Office. ○ If requested by the NOAA IOOS Office, US Wind must share with IOOS accurate numerical time-series data of blade rotation rates, nacelle bearing angles, and other information about the operational state of each WTG in the Lease Area to aid interference mitigation. Additional Notification: If a mitigation measure other than that identified above is agreed to by US Wind and BOEM, in consultation with the NOAA IOOS Office, then US Wind must submit information on the proposed mitigation measure to DOI for its review and concurrence. If, after consultation with the NOAA IOOS Office, BOEM deems the mitigation acceptable, the mitigation will be considered required as a term of US Wind's permit.	IOOS Surface Currents Program in consultation with NOAA's Office of General Counsel	BSEE, NOAA
Other Uses (Marine Minerals, Military and National Security Uses, Aviation and Air Traffiic, Radar Systems, Scientific Research, Surveys and Search and Rescue)	O&M	The National Weather Service (NWS) has identified potential for moderate impacts to NEXRAD radar. US Wind will enter into a mitigation agreement with the NWS to mitigate operational impacts on impacted NEXRAD sites, including Dover AFB WSR-88D.	BOEM, NWS	BOEM, NWS

Resource Area Mitigated	Project Stage*	Mitigation and Monitoring Measures	Source	Anticipated Enforcing Agency
Visual Resources	O&M	In coordination with BOEM, the developer is to prepare and implement a scenic and visual resource monitoring plan that monitors and compares the visual effects of the wind farm during construction and operations/maintenance (daytime and nighttime) to the findings in the COP Visual Impact Assessment and verifies the accuracy of the visual simulations (photo and video). The monitoring plan should include monitoring and documenting the meteorological influences on actual wind turbine visibility over a duration of time from selected onshore key observation points, as determined by BOEM and the developer. In addition, the developer needs to include monitoring the operation of ADLS in the monitoring plan. The developer needs to monitor the frequency that the ADLS is operative documenting when (dates and time) the aviation warning lights are in the on position and the duration of each event. Details for monitoring and reporting procedures are to be included in the plan.	BOEM proposed measure	BOEM

Table G-4- Lessee Authorization and Permit Conditions

Maryland Department of Environment Consistency Determination	Conditions included in the CZM consistency determination would be noted in BOEM's ROD.
Delaware Department of Natural Resources and Environmental Control Consistency Determination	Conditions included in the CZM consistency determination would be noted in BOEM's ROD.
NMFS Proposed Incidental Take Regulation and Associated 5-year Letter of Authorization (draft rule at 89 FR 504)	US Wind must adhere to NMFS final Incidental Take Regulation and issued Letter of Authorization.