Sunrise Wind - Appendix H: Mitigation and Monitoring

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Appendix H: Mitigation and Monitoring

This Draft EIS assesses the potential biological, socioeconomic, physical, and cultural impacts that could result from the construction, O&M, and conceptual decommissioning of the Project proposed by Sunrise Wind in its COP. The Project described in the COP and this Draft EIS would be approximately 1,034 MW in scale and approximately 16.4 nm (18.9 miles, 30.4 km) south of Marth's Vineyard, Massachusetts; approximately 26.5 nm (30.5 miles, 48.1 km) east of Montauk, New York; and approximately 14.5 nm (16.7 miles, 26.8 km) from Block Island, Rhode Island within the area of Lease OCS-A 0487 (Lease Area). The Project is designed to serve demand for renewable energy in New York.

As part of the Project, Sunrise Wind has committed to implementing applicant-proposed measures (APMs) to avoid, reduce, mitigate, or monitor impacts on the resources discussed in Chapter 3 of the Draft EIS. These APMs are described in Table H-1 and assessed as part of the Proposed Action. BOEM considers APMs as part of the Proposed Action only those measures that Sunrise Wind has committed to in the COP (Sunrise Wind 2022a).

BOEM may select alternatives and require additional mitigation or monitoring measures to further protect and monitor these resources. These additional mitigation and monitoring measures are shown in Table H - 2 and may result from reviews under several environmental statutes (CAA, ESA, MSA, MMPA, and NHPA) as discussed in Appendix A of the Draft EIS, or other sources. Please note that not all of these mitigation measures are within BOEM's statutory and regulatory authority, and some may be required by other governmental entities. Table H - 2 provides descriptions of these measures as well as measures arising from BOEM's own authorities.

If BOEM decides to approve the COP, the ROD will state which of the mitigation and monitoring measures identified by BOEM in Table H - 2 have been adopted, and if not, why they were not. The ROD will describe the specific terms and conditions of these measures for which compliance is required (40 CFR 1505.3). Sunrise Wind would be required to certify compliance with these terms and conditions under 30 CFR 585.633(b). Furthermore, BOEM will periodically review the activities conducted under the approved COP, with the frequency and extent of the review 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 may be required to evaluate the effectiveness of mitigation measures or to identify if resources are responding as predicted to impacts from the Proposed Action. This monitoring would typically 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) modify how a mitigation measure identified in the COP or ROD is being implemented, (2) revise or develop new mitigation or monitoring measures for which compliance would be required under the Sunrise Wind COP in accordance with 30 CFR 585.634(b), (3) develop measures for future projects, or (4) contribute to regional efforts for better understanding of the impacts and benefits resulting from offshore wind energy projects in the Atlantic (e.g., a potential cumulative impact assessment tool). Unless specified as an APM, the proposed mitigation measures described below would not change the impact ratings on the affected resource, as described in Chapter 3 of the Draft EIS, but would further reduce expected impacts or inform the development of additional mitigation measures if required.

Table H - 1 Applicant Proposed Measures

Measure Number / Name	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[1]
GEN-01	Site onshore export cable corridors and landfall within existing rights-of-way or previously disturbed/developed lands to the extent practicable.	Multiple	Best practice - not an enforceable measure
GEN-02	Site onshore, cable landfall and offshore facilities to avoid known locations of sensitive habitat (such as known nesting beaches) or species during sensitive periods (such as nesting season); important marine habitat (such as high density, high value fishing grounds identified through a lengthy stakeholder and scientific review process when refining the RI-MA WEA- see Section 2.1.1 of the Sunrise Wind COP); and sensitive benthic habitat; to the extent practicable. Avoid hard-bottom habitats and seagrass communities, where practicable, and restore any damage to these communities.	Multiple	BOEM and BSEE
GEN-03	Avoid areas that would require extensive seabed or onshore alterations to the extent practicable.	Multiple	Best practice - not an enforceable measure
GEN-04	Bury onshore and offshore cables below the surface or seabed to the extent practicable and inspect offshore cable burial depth periodically during project operation, as described in the Project Description, to ensure that adequate coverage is maintained to avoid interference with fishing gear/activity.	Multiple	BOEM and BSEE
GEN-05	Use existing port and onshore operations and maintenance (office, warehouse, and workshop) facilities to the extent practicable to support offshore construction, assembly and fabrication, crew transfer and logistics.	Multiple	Best practice - not an enforceable measure
GEN-06	Develop and implement a site-specific monitoring program to ensure that environmental conditions are monitored during construction, operation, and decommissioning phases, designed to ensure environmental conditions are monitored and reasonable actions are taken to avoid and/or minimize seabed disturbance and sediment dispersion, consistent with permit conditions. The monitoring plan will be developed during the permitting process, in consultation with resource agencies, and would require monitoring and reporting.	Multiple	BOEM and BSEE

[1] BOEM and BSEE are in the process of transferring enforcement authorities from BOEM to BSEE.

Measure Number / Name	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[1]
GEN-07	Implement aircraft detection lighting system (ADLS) or related means (e.g., dimming or shielding) on wind turbine generators (WTGs). Comply with Federal Aviation Administration (FAA), BOEM, and U.S. Coast Guard (USCG) lighting, marking and signage requirements to aid navigation per USCG navigation and inspection circular (NVIC) 02-07 (USCG 2007) and comply with any other applicable USCG requirements while minimizing the impacts through appropriate application including directional aviation lights that minimize visibility from shore. Information will be provided to allow above water obstructions and underwater cables to be marked in sea charts, aeronautical charts, and nautical handbooks.	Multiple	BOEM and BSEE
GEN-08	To the extent practicable, use appropriate installation technology , including but not limited to dynamic positioning vessels, horizontal directional drilling, and trenchless methods, designed to minimize disturbance to the seabed and sensitive habitat (such as beaches and dunes, wetlands and associated buffers, streams, hard-bottom habitats, seagrass beds, and the near-shore zone); avoid anchoring on sensitive habitat; and implement turbidity reduction measures to minimize impacts to sensitive habitat from construction activities.	Multiple	BOEM and BSEE
GEN-09	During pile-driving activities, use ramp up procedures as agreed with National Marine Fisheries Service (NMFS) for activities covered by Incidental Take Authorizations, allowing mobile resources to leave the area before full-intensity pile-driving begins. Sunrise Wind will also use shutdown procedures as required per regulatory approvals.	Multiple	BOEM, BSEE, EPA, and USACE
GEN-10	Prepare waste management plans and hazardous materials plans as appropriate for the Project. Waste management plans and hazardous materials plans will be submitted to BSEE for approval and enforcement.	Multiple	BSEE
GEN-11	Establish and implement erosion and sedimentation control BMPs and revegetation measures in a Stormwater Pollution Prevention Plan (SWPPP, authorized by the State), Spill Prevention, Control, and Countermeasures (SPCC) Plan, and Onshore Soil Handling and Erosion Control Plan to minimize impacts to water quality (prepared in accordance with applicable regulations or OCS Permit conditions or NPDES Permit conditions). Development and implementation of an Oil Spill Response Plan (OSRP, part of the SPCC plan) and SPCC plans for vessels.	Multiple	BSEE, USCG, EPA, and NYSDEC
GEN-12	Where HDD trenchless technology methods are used, develop, and implement an Inadvertent Return Plan that includes measures to prevent inadvertent returns of drilling fluid to the extent practicable and measures to be taken in the event of an inadvertent return, and reporting would be required any time that HDD drilling fluid, fracking, or loss of drilling mud occurs.	Multiple	BOEM and BSEE

Measure Number / Name	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[1]
GEN-13	Restore disturbance areas in the Onshore Project Area to preexisting contours (maintaining natural surface drainage patterns) and allow vegetation to become reestablished once construction activities are completed, to the extent practicable.	Multiple	NYSDEC and/or local authorities
GEN-14	Develop and implement a communication plan to inform the USCG, Department of Defense (DOD) headquarters, harbor masters, public, local businesses, commercial and recreational fishers, among others of construction and maintenance activities and vessel movements, as coordinated by the Marine Coordination Center and Marine Affairs.	Multiple	Best practice - not an enforceable measure
GEN-15	Develop and implement an Onshore Maintenance and Protection of Traffic Plan for all roadways directly affected by construction activities to minimize vehicular traffic impacts during construction. This plan will be developed in conformance with the National Manual on Uniform Traffic Control Devices and New York State Supplement. Sunrise Wind would restore roadways to pre-construction conditions in accordance with NYSDOT Standard Specifications for Construction and Materials.	Multiple	NYDOT and/or local authorities
GEN-16	Prior to the start of operations, Sunrise Wind will hold training to establish responsibilities of each involved party, define the chains of command, discuss communication procedures, provide an overview of monitoring procedures, and review operational procedures. This training will include all relevant personnel, crew members and protected species observers (PSO). New personnel must be trained as they join the work in progress. Vessel operators, crew members and protected species observers shall be required to undergo training on applicable vessel guidelines and the standard operating conditions. Sunrise Wind will make a copy of the standard operating conditions available to each project-related vessel operator.	Multiple	BOEM and BSEE
GEN-17	Implement Project and site-specific safety plans (Safety Management System, Appendix E2).	Multiple	BSEE, Required measure per 30 CFR 585.811
GEN-18	No permanent exclusion zones during operation of the SRWF, so both Project and non-Project vessels will be free to navigate within, or close to, the SRWF.	Multiple	BOEM and BSEE
GEN -19	An Invasive Species Management Plan (ISMP) will be implemented to manage the spread of invasive plant species.	Multiple	BOEM and BSEE
GEN-20	Sunrise Wind will conduct post-construction bathymetric measurements of the SRWEC-NYS's location and burial depth, and report any deviations that could potentially cause the cables to exceed stated ratings with the electric and magnetic field guidelines. Any such deviations shall be memorialized and summarized in a Post-Construction EMF Report to be filed with NYS. Sunrise Wind will also complete monitoring of the current flow of the SRWEC-NYS and submit an EMF Verification Assessment with a general summary and	Multiple	NYSDEC, NYSDOS

Measure Number / Name	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[1]
	evaluation of the first six month's monitoring within one year of the completion of construction of the Project.		
GEN-21	Sunrise Wind shall develop an Environmental Management and Construction Plan (EM&CP) to be approved by NYS authorities prior to construction activities.	Multiple	NYSDOS, NYSDEC, NYSDOT
GEN-22	A Material management Plan will be developed that will outline the process and procedures for the handling of any contaminants or hazardous waste encountered during construction.	Multiple	NYSDEC
GEN-23	Sunrise Wind shall provide a means for the public to communicate with Sunrise Wind regarding construction notices and other publicly relevant information.	Multiple	Best practice – not an enforceable measure
GEN-24	Sunrise Wind shall use best efforts to complete onshore deliveries related to construction activities between 7:00 a.m. and 7:00 p.m., except for cable, oversized deliveries, and deliveries necessary to complete construction that are otherwise authorized to occur on a Sunday or after 7:00 p.m.	Multiple	Best practice – not an enforceable measure
GEN-25	Sunrise Wind shall develop an Environmental Compliance Plan to DPS Staff and NYSDEC prior to construction activities.	Multiple	NYSDEC, NYSDOS
GEO-01	Avoid identified shallow hazards, to the extent feasible	Multiple	Best practice – not an enforceable measure
GEO-02	Reduce scouring action by ocean currents around foundations and to seabed topography by taking reasonable measures and employing periodic routine inspections to ensure structural integrity.	Multiple	BSEE
GEO-03	Take reasonable actions (use BMPs) to minimize seabed disturbance and sediment dispersion during cable installation and construction of project facilities.	Multiple	Best practice – not an enforceable measure
GEO-04	Conduct periodic and routine inspections to determine if non-routine maintenance is required.	Multiple	Best practice – not an enforceable measure

Measure Number / Name	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[1]
GEO-05	Use of monopile and piled jacket foundations with associated scour protection will minimize impacts to surficial geology, compared to other foundation types.	Geological Resources	Best practice – not an enforceable measure
GEO-06	Dynamic positioning (DP) vessels will be used for installation of the IAC and SRWEC to the extent practicable. Use of DP vessels will minimize impacts to the seabed, compared to the use of a vessel relying on multiple anchors. The SRWEC Landfall will be installed via HDD to avoid impacts to nearshore zones and surficial geologic resources. The Onshore Transmission Cable will also be installed via HDD under the ICW to avoid impacts to coastal resources; HDD and the trenchless methods will also be used elsewhere onshore, where appropriate, to minimize impacts to surface locations and resource areas.	Geological Resources	Best practice – not an enforceable measure
WQ-01	Implement turbidity reduction measures to minimize impacts to hardbottom habitats, including seagrass communities, from construction activities, to the extent practicable.	Water Quality	USACE and NYSDEC
WQ-02	All vessels will be certified by the Project to conform to vessel operations and maintenance protocols designed to minimize the risk of fuel spills and leaks.	Water Quality	Best practice – not an enforceable measure
WQ-03	All construction and O&M vessels will comply with applicable International Convention for the Prevention of Pollution from Ships (IMO MARPOL), federal (USCG and EPA), and state regulations and standards for the management, treatment, discharge, and disposal of onboard solid and liquid wastes and the prevention and control of spills and discharges.	Water Quality	USCG, EPA, NYSDEC
WQ-04	Sunrise Wind will develop a Suspended Sediment and Water Quality Monitoring Plan.	Water Quality	NYSDEC, NYSDOS
AQ-01	Diesel generators on WTGs and the OCS-DC will only burn low sulfur diesel in the engines. Diesel generators on WTGs will only be used temporarily during commissioning or in an emergency power outage.	Air Quality	Best practice – not an enforceable measure
AQ-02	Vessels meeting the definition of an OCS source and providing construction or maintenance services for the SRWF and SRWEC will use low sulfur fuel, Marine Distillate, or Marine Residual fuels when operating any diesel-fired emission unit, as specified by applicable regulations or OCS Permit conditions.	Air Quality	OCS Permit conditions
AQ-03	Select engines designed to reduce air pollution to the extent practicable (such as U.S. Environmental Protection Agency [USEPA] Tier 3 or 4 certified).	Air Quality	Best practice – not an

Measure Number / Name	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[1]
			enforceable measure
AQ-04	Vehicles operating on roads will comply with federal emission control standards and anti-idling laws.	Air Quality	EPA, NYSDEC
AQ-05	Comply with international standards regarding air emissions from marine vessels.	Air Quality	Best practice – not an enforceable measure
AQ-06	Vessel engines will meet the applicable United States Environmental Protection Agency air emission standards, specified in the OCS Permit, to satisfy Best Available Control Technology (BACT) or Lowest Achievable Emission Rate (LAER).	Air Quality	EPA, BOEM, BSEE
AQ-07	Implement dust control plan as a part of the SWPPP.	Air Quality	NYSDEC
AQ-08	Use gas-insulated switchgears containing integral-low pressure detectors	Air Quality	Best practice – not an enforceable measure
AQ-09	Gas-insulated switchgears are manufactured to be completely sealed and would likely result in little or no SF6 emissions. Switchgears containing SF6 on the OCS-DC and OnCS-DC will be equipped with integral low-pressure detectors to detect SF6 gas leakages should they occur.	Air Quality	EPA
TCHF-01	Coordinate with the New York Department of Environmental Conservation (NYSDEC), National Oceanic Atmospheric Administration (NOAA) Fisheries, and United States Fish and Wildlife Service (USFWS) to identify unique or protected habitat or known habitat for threatened or endangered and candidate species and avoid these areas to the extent practicable. Coordinate with the National Park Service (NPS) to identify sensitive habitat and protected species and avoid these areas as practicable in NPS managed waters.	Coastal Habitat and Fauna	Best practice - not an enforceable measure
TCHF-02	Conduct maintenance and repair activities in a manner to avoid or minimize impacts to sensitive species and habitat such as beaches, dunes, and the near-shore zone.	Coastal Habitat and Fauna	Best practice - not an enforceable measure
TCHF-03	During construction and O&M, surveys will be conducted for seabeach amaranth for the entire Project footprint during the growing season of May 15 – November 30, <1 week before start of Project activities. Any plants within the Project footprint will be provided a 10-ft buffer with outer string and post fencing and no entry or sand stockpiling. Documentation should be provided to USFWS, per USFWS BO.	Coastal Habitat and Fauna	USFWS, NYSDEC

Measure Number / Name	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[1]
TCHF-04	Where appropriate, temporary erosion controls such as swales and erosion control socks will be installed and will be maintained until the site is restored and stabilized.	Coastal Habitat and Fauna	Best practice – not an enforceable measure
TCHF-05	Prepare a Vegetation Management Plan to minimize impacts during construction activities.	Coastal Habitat and Fauna	NYSDEC
BIRD-01	Evaluate avian use by conducting digital aerial pre-construction surveys for raptor nests, wading bird colonies, seabird nests, and shorebird nests during nesting periods. (Focus being listed species or species identified of special concern by the Federal or State government.) Results of this evaluation shall be submitted and reviewed before construction activities begin.	Birds	BSEE and BOEM
BIRD-02	An avian post-construction monitoring framework will be developed and coordinated with NYSDEC, NPS, and USFWS, reviewed by BOEM and implemented as required.	Birds	BOEM, USFWS, NPS, and NYSDEC
BIRD-03	Sunrise Wind will take measures to reduce perching opportunities at operating turbines.	Birds	USFWS and NYSDEC
BIRD-04	Use lighting technology that minimizes impacts on avian and bat species to the extent practicable. A lighting plan and installation report will be submitted to the appropriate agencies for approval, review, and enforcement.	Birds	BOEM and BSEE
BIRD-05	WTG layout in unform east-west/north-south layout. Wide spacing may minimize risk of collision	Birds	Best practice – not an enforceable measure
BIRD-06	WTGs will have air gaps from MSL to minimum blade swept height of at least 98 ft (30 m) which minimizes collision risk to marine birds.	Birds	Not an enforceable measure
BIRD-07	Time of year restrictions for certain work activities such as HDD conduit stringing will be employed to the extent feasible to avoid or minimize direct impacts to RTE avian species during construction of the Landfall. If work is anticipated to occur outside of time-of-year restrictions, Sunrise Wind will work with state and federal agencies to develop construction monitoring and impact minimization or mitigation plans, as appropriate.	Birds	USFWS, NPS, and NYSDEC

Measure Number / Name	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[1]
BAT-01	Time-of-year restrictions for certain work activities such as tree removal will be employed to the extent feasible to avoid or minimize direct impacts to northern-long eared bats during construction of Onshore Facilities. If work is anticipated to occur outside of this period, Sunrise Wind will work with state and federal agencies to develop construction monitoring and impact minimization plans or mitigation plans, as appropriate.	Bats	USFWS and NYSDEC
BAT-02	Onshore Facilities are primarily sited within previously disturbed and developed areas to the extent feasible, to minimize impacts to undisturbed habitats.	Bats	USFWS and NYSDEC
BAT-03	If tree clearing is required in areas with trees suitable for bat roosting during the period when northern long-eared bats may be present, develop avoidance and minimization measures in coordination with USFWS and NYSDEC and conduct pre-construction habitat surveys.	Bats	USFWS and NYSDEC
BAT-04	A bat post-construction monitoring framework will be developed and coordinated with NYSDEC, NPS and USFWS and implemented as required.	Bats	BOEM, BSEE, USFWS, NPS, and NYSDEC
BAT-05	The Project onshore cables will not include any overhead utility lines, thus minimizing potential impacts to birds and bats associated with collision of overhead lines.	Multiple	Best practice – not an enforceable measure
BAT-06	An Invasive Species Management Plan will be implemented to manage the spread of the invasive plant species that could negatively impact native plants and impact bat habitat.	Bats	BOEM and BSEE
BENTH-01	Sunrise Wind is conducting appropriate pre-siting surveys to identify and characterize potentially sensitive seabed habitats and topographic features. Pre-siting surveys will be submitted to BSEE as appropriate for follow-up of compliance with other mitigation measures.	Benthic Resources	BSEE
BENTH-02	To the extent feasible, installation of the Inter-Array Cables will be buried using equipment such as mechanical plow, jet plow, and/or mechanical cutter. Sunrise Wind will conduct a cable burial risk assessment.	Benthic Resources	Not an enforceable measure
BENTH-03	Conduct a submerged aquatic vegetation (SAV) survey of the proposed inshore export cable route, and position the proposed temporary landing structure to avoid and minimize impacts to sensitive habitat to the extent practicable.	Benthic Resources	BOEM and BSEE
BENTH-04	Perpendicular crossings of sand ridges and troughs by IAC would be minimized.	Benthic Resources	Not an enforceable measure

Measure Number / Name	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[1]
BENTH-05	Standard underwater cables, which have electrical shielding to control the intensity of EMF would be used. EMF will be further refined as part of the design or cable burial risk assessment.	Benthic Resources	Not an enforceable measure
BENTH-06	Sunrise Wind will conduct pre-construction, construction, and post construction monitoring of benthic habitats in the Project Area.	Benthic Resources	Not an enforceable measure
BENTH-07	To the extent practicable, the SRWF and SRWEC will be sited to avoid and minimize impacts to sensitive habitats.	Benthic Resources	Not an enforceable measure
BENTH-08	A plan for vessels will be developed prior to construction to identify no-anchorage areas to avoid documented sensitive resources.	Benthic Resources	NYSDEC
BENTH-09	SRW will avoid anchoring and spudding in the delineated SAV areas associated with the installation, use, and removal of the temporary trestle at Smith Point County Park. SRW will provide the Project Corridor, NYSDOS Seagrass 2018 GIS layer, and the yellow star SAV locations from the SAV Survey report (October 2022) to contractors so that they can avoid anchoring/spudding in those locations.	Benthic Resources	BOEM, BSEE, NYSDEC, NPS, and USACE
FISH-01	Evaluate geotechnical and geophysical survey results to identify sensitive habitats (e.g., shellfish and SAV beds) and avoid these areas during construction, to the extent practicable.	Fish and EFH	BOEM, BSEE, NYSDEC, NPS, and USACE
FISH-02	Sunrise Wind will coordinate with NYSDEC, NMFS and USACE regarding time of year restrictions for summer flounder habitat areas of particular concern (HAPC).	Fish and EFH	USACE
FISH-03	Sunrise Wind will employ time-of-year in-water restrictions to the extent feasible to avoid or minimize impacts to Atlantic sturgeon. If work is anticipated to occur outside of these time-of-year restriction periods, Sunrise Wind will work with state and federal agencies to develop construction monitoring and impact minimization plans or mitigation plans as appropriate.	Fish and EFH	USFWS, NMFS
FISH-04	Sunrise Wind is committed to collaborative science with the commercial and recreational fishing industries prior to, during, and following construction. Fisheries and benthic monitoring studies (Appendices AA1 and AA2 of COP, Sunrise Wind 2022a) are being planned to assess impacts associated with the Project on economically and ecologically important fisheries resources within the SRWF, along the SRWEC, and in the ICW. These studies will be conducted in collaboration with the local fishing industry and will build upon monitoring efforts being conducted by affiliates of Sunrise Wind at other wind farms in the region.	Fish and EFH, Commercial Fisheries and For-hire Recreational Fisheries	Not an enforceable measure

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FISH-05	Sunrise Wind aims, where feasible, to mitigate and reduce potential impacts to fishing activities, as outlined in the Fisheries Communication Plan and Outreach Plan, and the Fisheries Mitigation Plan for Sunrise Wind, which is available on the NYSERDA website and will be updated throughout Project development.	Fish and EFH, Commercial Fisheries and For-hire Recreational Fisheries	Not an enforceable measure
FISH-06	Construction and operational lighting will be limited to the minimum necessary to ensure safety and compliance with applicable regulations. Limiting lighting to that which is required for safety and compliance with applicable regulations is expected to minimize impacts on essential fish habitat.	Fish and EFH	Not an enforceable measure
MMST-01	Vessels related to project planning, construction, and operation shall travel at speeds in accordance with National Oceanic and Atmospheric Administration (NOAA) requirements or the agreed to adaptive management plan per to Project PSMMP when assemblages of cetaceans are observed. Vessels will also maintain a reasonable distance from whales, small cetaceans, and sea turtles, as determined through site-specific consultations (specifics to be added based on consultations).	Marine Mammals, Sea Turtles	BOEM, BSEE, EPA, and NMFS
MMST-02	Project-related vessels will be required to adhere to NMFS Regional Viewing Guidelines for vessel strike avoidance measures during construction and operation to minimize the risk of vessel collision with marine mammals and sea turtles.	Marine Mammals, Sea Turtles	BOEM, BSEE, EPA, and NMFS
MMST-03	Vessel operators will monitor NMFS North Atlantic right whale (NARW) reporting systems (e.g., the Early Warning System, Sighting Advisory System) [daily] for the presence of NARW during planning, construction, and operations within or adjacent to Seasonal Management Areas and/or Dynamic Management Areas.	Marine Mammals, Sea Turtles	BOEM, BSEE, EPA, and NMFS
MMST-04	Sunrise Wind will post a qualified observer as agreed to during the NMFS incidental take authorization process, on site during construction activities to avoid and minimize impacts to marine species and habitats in the Project Area.	Marine Mammals, Sea Turtles	BOEM, BSEE, EPA, NMFS, and USACE
MMST-05	Obtain necessary permits to address potential impacts on marine mammals from underwater noise, and establish appropriate and practicable mitigation and monitoring measures in coordination with regulatory agencies.	Marine Mammals, Sea Turtles	BOEM, BSEE, EPA, NMFS, and USACE
MMST-06	Develop and implement a PSMMP.	Marine Mammals, Sea Turtles	BOEM, BSEE, EPA, NMFS, and USACE

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MMST-07	To the extent feasible, the SRWEC and IAC will typically target a burial depth of 3 to 7 ft (1 to 2 m). The target burial depth will be determined based on an assessment of seabed conditions, seabed mobility, the risk of interaction with external hazards such as fishing gear and vessel anchors, and a site-specific Cable Burial Risk Assessment.	Marine Mammals, Sea Turtles	BOEM, BSEE, EPA, NMFS, and USACE
MMST-08	Plow cables/umbilicals will be under constant tension, and in this taut condition, are not expected to represent an entanglement risk.	Marine Mammals, Sea Turtles	Best practice – not an enforceable measure
SOC-01	Screening will be implemented at the OnCS-DC to the extent feasible to reduce noise.	Demographics, Employment, and Economics, Environmental Justice	NYSDEC and/or local authorities
SOC-02	When feasible, local workers will be hired to meet labor needs for Project construction, O&M, and decommissioning.	Socioeconomic Resources	Best practice – not an enforceable measure.
CUL-01	Develop and implement an Unanticipated Discovery Plan.	Cultural Resources	BOEM, BSEE, NPS, NYSDEC, and USACE
CUL-02	Use the results of geotechnical and geophysical surveys to identify potential cultural resources. Any cultural resources found will be avoided to the extent practicable. Where avoidance is not practicable, coordinate with relevant agencies and affected tribes to determine minimization and mitigation as necessary.	Cultural Resources	BOEM, BSEE, NPS, and USACE
CUL-03	Conduct background research and consult with the State Historic Preservation Office (SHPO) to determine the need for cultural resource surveys onshore. Any cultural resources found will be avoided to the extent practicable. Where avoidance is not practicable, coordinate with SHPO and affected tribes to determine minimization and mitigation as necessary.	Cultural Resources	BOEM, BSEE, and NPS
CUL-04	The Project has been designed to minimize visual impacts to historic and cultural properties to the extent feasible. The Project's layout was adjusted to align turbines at the eastern portion of the lease area, so that closest turbines are at least 15 miles from shore. Visibility of the turbine array from all identified properties	Cultural Resources	Best practice - not an

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	within the Preliminary Area of Potential Effect would be minimized and mitigated further by measures adopted in this table including ADLS and markings (GEN-07), and as in COP Appendix Z (Sunrise Wind 2022a)		enforceable measure
CUL-05	Mitigation in the form of documentation, planning, or educational materials will be coordinated with stakeholders, as in COP Appendix Z.	Cultural Resources	BOEM, BSEE, EPA, USACE, NPS
REC-01	Develop a construction schedule to minimize activities in the onshore export cable route during the peak summer recreation and tourism season, where practicable, and develop a communications plan with adjacent land managing agencies to communicate this schedule with the public and provide messaging via various platforms and on-site in adjacent lands. The communication plan would be used to help inform the public of what to expect when planning recreation visits in areas adjacent to construction activities.	Recreation and Tourism	NYSDEC, NPS, Suffolk county, local municipalities
REC-02	Coordinate with local municipalities to minimize impacts to popular events in the area during construction, to the extent practicable.	Recreation and Tourism	NYSDEC, NPS, Suffolk County, and local municipalities
REC-03	Develop and implement traffic control and noise mitigation measures to minimize impacts to recreation visitors to the Smith County Park, the Fire Island National Seashore, and the Otis Pike Wilderness Area.	Recreation and Tourism	NYSDEC, NPS, Suffolk County, and local municipalities
REC-04	In-water activities shall be undertaken, to the extent practicable, in a manner that minimizes the potential for interference with navigation and other water-dependent uses of the area, including but not limited to fishing, boating, and recreation.	Recreation and tourism, Commercial Fisheries and For-Hire Recreation Fishing, Navigation and Vessel Traffic	Best practice – not an enforceable measure
REC-05	Unless otherwise necessary for safety purposes, Sunrise Wind shall maintain continual pedestrian and vehicular use of and access to park amenities within Smith Point County Park on Fire Island, Smith Point County Marina, Southaven County Park in the Town of Brookhaven, and other existing public access areas.	Recreation and Tourism	NYSDEC, NPS, Suffolk County,

Measure Number / Name	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[1]
			and local municipalities
CFHFISH-01	Work cooperatively with commercial/recreational fishing entities and interests to ensure that the construction and operation of the Project will minimize potential conflicts with commercial and recreational fishing interests as outlined in the Fisheries Communication and Outreach Plan (Appendix B).	Commercial Fisheries and For-Hire Recreational Fishing	Best practice - not an enforceable measure
CFHFISH-02	Develop and implement a Fisheries Communication and Outreach Plan (COP Appendix B, Sunrise Wind 2022a). The plan includes the appointment of a dedicated fisheries liaison as well as fisheries representatives who will serve as conduits for providing information to, and gathering feedback from, the fishing industry, as well as Project-specific details on fisheries engagements.	Commercial Fisheries and For-Hire Recreational Fishing	Best practice - not an enforceable measure
CFHFISH-03	Implement Orsted's corporate policy and procedure to compensate commercial/recreational fishing entities for gear loss as a result of Project activities.	Commercial Fisheries and For-Hire Recreational Fishing	Best practice - not an enforceable measure
CFHFISH-04	To minimize the number of potential seafloor obstructions that may interact with bottom trawl commercial fisheries, at least 90 days prior to inter-array cable corridor preparation and cable installation (e.g., boulder relocation, pre-cut trenching, cable crossing installation, cable lay and burial) and foundation site preparation (e.g., scour protection installation), the Lessee must provide DOI with a boulder relocation plan. The plan shall include the following: 1) Identification of areas of active (within last 5 years) bottom trawl fishing, areas where boulders >2m in diameter are anticipated to occur, and areas where boulders are expected to be relocated for project purposes. 2) Identification of methodologies to minimize the quantity of seafloor obstructions from relocated boulders in areas of active bottom trawl fishing, as identified in #1.	Commercial Fisheries and For-Hire Recreational Fishing	BOEM
LU-01	Develop crossing and proximity agreements with utility owners prior to utility crossings. (Crossing agreements in U.S. waters are supported by the International Cable Protection Committee (ICPC), which provides a framework for establishing cable crossing agreements.)	Land Use and Coastal Infrastructure	Not an enforceable measure
LU-02	Coordinate construction work on the Onshore Transmission Cable with the appropriate State and municipal officials and agencies.	Land Use and Coastal Infrastructure	NYSDOT, Suffolk County, local municipalities

Measure Number / Name	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[1]
LU-03	Sunrise Wind shall perform construction, operation, and maintenance along the Onshore Transmission Cable in a manner that first avoids and then minimizes impacts to wetlands and waterbodies and appropriate adjacent areas. If wetlands and waterbodies cannot be fully avoided, activities shall be performed in accordance with a Wetland Impact Minimization and Mitigation Plan.	Land Use and Coastal Infrastructure	NYSDEC
NAV-01	Sunrise Wind has engaged and will continue to engage with FAA and DOD with regards to potential effects to aviation and radar.	Navigation and Vessel Traffic	Best practice - not an enforceable measure
NAV-02	Site facilities to avoid unreasonable interference with major ports and USCG-designated Traffic Separation Schemes.	Navigation and Vessel Traffic	Not an enforceable measure
NAV-03	Select structures within the proposed Wind Farm Area will be equipped with strategically located Automatic Identification System (AIS) transponders.	Navigation and Vessel Traffic	BOEM, BSEE, and USCG
NAV-04	WTGs will be arranged in equally spaced rows on a northwest to southeast orientation to aid the safe navigation of vessels operating within the Wind Farm Area.	Navigation and Vessel Traffic	Not an enforceable measure
OUSE-01	Evaluate geotechnical and geophysical survey results to identify existing conditions, existing infrastructure, and other marine uses. Areas of other marine uses will be avoided to the extent practicable, and Sunrise Wind will coordinate with other users where avoidance is not practicable.	Other Uses	Not an enforceable measure
VIS-01	Address key design elements, including visual uniformity, use of tubular towers, and proportion and color of turbines.	Scenic and Visual Resources	BOEM and BSEE
VIS-02	Sunrise Wind has used appropriate viewshed mapping, photographic and virtual simulations, computer simulation, and field inventory techniques to determine the visibility of the proposed project. Simulations illustrate sensitive and scenic viewpoints.	Scenic and Visual Resources	Not an enforceable measure
VIS-03	Seek public input in evaluating the visual site design elements of proposed wind energy facilities.	Scenic and Visual Resources	Not an enforceable measure

Measure Number / Name	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[1]
VIS-04	Security lighting for onshore facilities will be downshielded to mitigate light pollution.	Scenic and Visual Resources	NYSDEC and local municipalities
VIS-05	Where substation components may be visible and highly contrasting with their surroundings, the Project would provide supplemental plantings and other landscape elements to screen the substation from public view.	Scenic and Visual Resources	Not an enforceable measure
VIS-06	Consideration will be given to visually adapt the buildings and other substation components into their physical context. The forms, lines, colors, and textures of these components will be influenced by their immediate surroundings and selected to minimize visual contrast and potential visual impact. Non-reflective paint will be used on all Project components.	Scenic and Visual Resources	Not an enforceable measure
VIS-07	Develop a Lighting Plan that shall include security lighting needs at the OnCS-DC and any exterior equipment storage, details of the lighting planned for the area, a specification that lighting should be designed to provide safe working conditions at appropriate locations, and a specification that exterior lighting design shall be specified to minimize, to the extent possible, off-site lighting effects.	Scenic and Visual Resources	NYSDEC and local municipalities
Applicant-Proposed Measures in the MMPA LOA Application and PSMMP Draft dated May 10, 2022(Sunrise Wind 2022b)			
PSO/Passive acoustic monitoring (PAM) training and requirements	• PSOs may be third-party observers (i.e., NMFS-approved PSOs) or crew members • All PSOs and PAM operators will have completed a NMFS-approved PSO training course. • The PSO field team and the PAM team will have a lead observer (Lead PSO and PAM Lead) who will have experience in the northwestern Atlantic Ocean. Additionally, the PAM Lead will have experience with the call types of mysticetes needing to be mitigated/monitored. • Remaining PSOs and PAM operators will complete a Permits and Environmental Compliance Plan (PECP) training and a two-day training and refresher session with the PSO provider and Project compliance representatives conducted before the anticipated start of Project activities. • Any PSO or PAM operator on duty will have authority to delay the start of operations or to call for a shutdown based on their visual observations or acoustic detections. • No individual PSO will work more than 4 consecutive hours without a 2-hour break, or longer than 12 hours during a 24-hour period. • Each PSO will be provided one 8-hour break per 24-hour period to sleep. • Observations will be conducted from the best available vantage point(s) on the vessels (stable, elevated platform from which PSOs have an unobstructed 360-degree view of the water).	Marine Mammals, Sea Turtles	BOEM, BSEE, and NMFS

Measure Number / Name	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[1]
	• PSOs will systematically scan with the naked eye and a 7 x 50 reticle binocular, supplemented with night-vision equipment when needed. • When monitoring at night or in low visibility conditions, PSOs will monitor for marine mammals and other protected species using night-vision goggles with thermal clip-ons, a hand-held spotlight, and/or a mounted thermal camera system. • Activities with larger monitoring zones will use 25 x 150 mm "big eye" binoculars. • Vessel personnel will be instructed to report any sightings to the PSO team as soon as they are able and it is safe to do so. Vessel personnel communication to the PSO team will be dependent on the vessel. However, means of communication may include: phone, hand-held radio, or face-to-face verbal communication. • Members of the monitoring team will consult with NMFS' North Atlantic right whale reporting system for the presence of North Atlantic right whales in the Project area. • Deployment of PAM system will be outside the perimeter of the shutdown zone. • 4-hour PAM operator rotations for 24-hour operation vessels.		
Vessel Strike Avoidance Policy – General Measures	• The Project will implement a vessel strike avoidance policy for all vessels under contract to Ørsted to reduce the risk of vessel strikes, and the potential of death and/or serious injury to marine mammals that may result from collisions with vessels. • In addition, Sunrise Wind will implement a Standard Plan and/or an Adaptive Plan, which will include additional measurs when traveling within established NARW DMAs. The three plans are intended to be interchangeable and implemented throughout both the construction and operation phases of the project. • Vessel operators and crews shall receive protected species identification training. This training will cover sightings of marine mammals and other protected species known to occur or which have the potential to occur in the Project area. It will include training on making observations in both good weather conditions (i.e., clear visibility, low wind, low sea state) and bad weather conditions (i.e., fog, high winds, high sea states, in glare). Training will include not only identification skills but information and resources available regarding applicable federal laws and regulations for protected species. It will also cover any Critical Habitat requirements, migratory routes, seasonal variations, behavior identification, etc. • All personnel working offshore will receive training on marine mammal awareness and vessel strike avoidance measures.	Marine Mammals, Sea Turtles	BOEM, BSEE, and NMFS

Measure Number / Name	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[1]
	• Vessel operators and crews will maintain a vigilant watch for marine mammals and other protected species and change course or respond with the appropriate action (e.g., slow down) to avoid striking marine mammals. • All attempts shall be made to remain parallel to the animal's course when a traveling marine mammal is sighted in proximity to the vessel in transit. All attempts shall be made to reduce any abrupt changes in vessel direction until the marine mammal has moved beyond its associated separation distance (as described above). • If an animal or group of animals is sighted in the vessel's path or in proximity to it, or if the animals are behaving in an unpredictable manner, all attempts shall be made to divert away from the animals or, if unable due to restricted movements, reduce speed and shift gears into neutral until the animal(s) has moved beyond the associated separation distance (except for voluntary bow riding dolphin species). • All vessels will comply with NMFS regulations and speed restrictions and state regulations as applicable for NARW (see vessel speed restriction Standard Plan and Adaptive Plan outlines below). • All vessels will comply with the approved adaptive speed plan which will include additional measures including travel within established NARW Slow zones • Sunrise Wind will submit a final NARW Vessel Strike Avoidance Plan at least 90 days prior to commencement of vessel use that details the Adaptive Plan and specific monitoring equipment to be used. The plan will, at minimum, describe how PAM, in combination with visual observations, will be conducted to ensure the transit corridor is clear of NARWs. The plan will also provide details on the vessel-based observer protocols on transiting vessels. • The vessel will remain parallel to the animal's course when a traveling marine mammal is sighted in proximity to the vessel in transit. The vessel will reduce any abrupt changes in vessel direction until the marine mammal has moved beyond its associated separation distance. • Sunrise Wind will establish a situational awareness network for marine mammal detections through the integration of sighting communication tools such as Mysticetus, Whale Alert, Whale Map, etc. Sighting information will be made available to all project vessels through the established network. Sunrise Wind's Marine Coordination Center will serve to coordinate and maintain a Common Operating Picture. In addition, systems within the Marine Coordination Center, along with field personnel, will: Monitor the NMFS North Atlantic right whale reporting systems daily; Monitor		

Measure Number / Name	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[1]
	Coast Guard VHF Channel 16 throughout the day to receive notifications of any sightings; and monitor any existing real-time acoustic networks.		
Vessel separation distances	Vessels will maintain, to the extent practicable, separation distances of: • >500 m distance from any sighted North Atlantic right whale or unidentified large marine mammals; • >100 m from all other large whales; • >50 m for dolphins, porpoises, seals, and sea turtles.	Marine Mammals, Sea Turtles	BOEM, BSEE, and NMFS
Vessel speed restrictions – Base Conditions	• All vessels will comply with NMFS regulations and speed restrictions and state regulations as applicable for NARW. • All vessels 65 ft (20 m) or longer subject to the jurisdiction of the U.S. will comply with the 10-knot speed restriction when entering or departing a port or place subject to U.S. jurisdiction, and in any SMA during NARW migratory and calving periods from November 1 to April 30. • Situational Awareness/Common Operating Pictures: Sunrise Wind will establish a situational awareness network for marine mammal detections through the integration of sighting communication tools such as Mysticetus, Whale Alert, WhaleMap, etc. Sighting information will be made available to all project vessels through the established network. Sunrise Winds Marine Coordination Center will serve to coordinate and maintain a Common Operating Picture. In addition, systems within the Marine Coordination Center, along with field personnel, will: Monitor the NMFS North Atlantic right whale reporting systems daily; Monitor Coast Guard VHF Channel 16 throughout the day to receive notifications of any sighting; and monitor any existing real-time acoustic networks. • All vessels will comply with the approved adaptive speed plan which will include additional measures including travel within established NARW Slow zones		
Vessel speed restrictions – Standard Plan	• Under the Standard Plan, Sunrise Wind will implement Base Conditions as described above. • **Between November 1 and April 30:** Vessels of all sizes will operate port to port (from ports in NJ, NY, MD, DE, and VA) at 10 knots or less between November 1 and April 30 except for vessels while transiting in Narragansett Bay or Long Island Sound which have not been demonstrated by best available science to provide consistent habitat for North Atlantic right whales. Vessels transiting from other ports outside those described will operate at 10 knots or less when within any active SMA or within the Wind Development Area (WDA) including the Sunrise Wind Farm and Sunrise Wind Export Cable.	Marine Mammals, Sea Turtles, ESA-listed Fish	BOEM, BSEE, and NMFS

Measure Number / Name	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[1]
	• **Year Round**: Vessels of all sizes will operate at 10 knots or less in any Dynamic Management Areas (DMAs). • **Between May 1 and October 31:** All underway vessels (transiting or surveying) operating at >10 knots will have a dedicated visual observer (or NMFS approved automated visual detection system) on duty at all times to monitor for marine mammals within a 180° direction of the forward path of the vessel (90° port to 90° starboard). Visual observers must be equipped with alternative monitoring technology for periods of low visibility (e.g., darkness, rain, fog). The dedicated visual observer must receive prior training on protected species detection and identification, vessel strike minimization procedures, how and when to communicate with the vessel captain, and reporting requirements. • Visual observers may be third-party observers (i.e., NMFS-approved PSOs) or crew members. • A complete vessel speed plan for sea turtles and ESA-listed fish will be included in the Protected Species Mitigation and Monitoring Plan (PSMMP).		
Vessel speed restrictions – Adaptive Plan	• The Standard Plan outlined above will be adhered to except in cases where crew safety is at risk, and/or labor restrictions, vessel availability, costs to the project, or other unforeseen circumstance make these measures impracticable. To address these situations, an Adaptive Plan will be developed in consultation with NMFS to allow modification of speed restrictions for vessels. Should Sunrise Wind choose not to implement this Adaptive Plan, or a component of the Adaptive Plan is offline (e.g., equipment technical issues), Sunrise Wind will default to the Standard Plan. • The Adaptive Plan will not apply to vessel subject to speed reductions in SMAs as designated by NOAA's Vessel Strike Reduction Rule. • **Year Round:** A semi-permanent acoustic network comprising near real-time bottom mounted and/or mobile acoustic monitoring platforms will be installed such that confirmed NARW detections are regularly transmitted to a central information portal and disseminated through the situational awareness network. • The transit corridor and WDA will be divided into detection action zones. • Localized detections of NARWs in an action zone would trigger a slow-down to 10 knots or less in the respective zone for the following 12 hours. Each subsequent detection would trigger a 12-hour reset. A zone slow-down expires when there has been no further visual or acoustic detection in the past 12 hours within the triggered zone.		

Measure Number / Name	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[1]
	• The detection action zones size will be defined based on efficacy of PAM equipment deployed and subject to NMFS approval as part of the *NARW Vessel Strike Avoidance Plan*. • **Year Round**: All underway vessels (transiting or surveying) operating >10 knots will have a dedicated visual observer (or NMFS approved automated visual detection system) on duty at all times to monitor for marine mammals within a 180° direction of the forward path of the vessel (90° port to 90° starboard). Visual observers must be equipped with alternative monitoring technology for periods of low visibility (e.g., darkness, rain, fog). The dedicated visual observer must receive prior training on protected species detection and identification, vessel strike minimization procedures, how and when to communicate with the vessel captain, and reporting requirements. Visual observers may be third-party observers (i.e., NMFS-approved PSOs) or crew members. • **Year-round:** any DMA is established that overlaps with an area where a project vessel would operate, that vessel, regardless of size when entering the DMA, may transit that area at a speed of 10 knots or less. Any active action zones within the DMA may trigger a slow down as described above. • If PAM and/or automated visual systems are offline, the Standard Plan measures will apply for the respective zone (where PAM is offline) or vessel (if automated visual systems are offline).		
PSO/PAM data recording	• All sightings of marine mammals visually observed or acoustically detected will be recorded. • All data will be recorded using industry-standard software. • Data recorded will include information related to ongoing operations, observation methods and effort, visibility conditions, marine mammal detections, and any mitigation actions requested and enacted.	Marine Mammals, Sea Turtles	BOEM, BSEE, and NMFS
Reporting	• If a stranded, entangled, injured, or dead protected species is observed, the sighting will be reported within 24 hours to NMFS RWSAS hotline. • In the event a protected species is injured or killed as a result of Project activities, the vessel captain or PSO on board shall report immediately to NMFS Office of Protected Resources (OPR) who is able to review the circumstances of the incident and determine what, if any, additional measures are appropriate to ensure compliance. Additionally, the vessel captain or PSO on board shall report immediate to NMFS OPR and Greater Atlantic Regional Fisheries Office no later than within 24 hours, and NOAA Fisheries Marine Mammal and Sea Turtle Stranding and Entanglement Hotline or alternative electronic reporting systems as approved by the NOAA stranding program, as well as the U.S. Coast Guard.	Marine Mammals, Sea Turtles	BOEM, BSEE, and NMFS

Measure Number / Name	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[1]
	• Any injured or dead ESA or marine mammal species (reporting requiring immediate response) must be reported to BSEE at protectedspecies@bsee.gov. • Any NARW sightings will be reported as soon as feasible and no later than within 24 hours to the NMFS RWSAS hotline or via the WhaleAlert Application. • Data and Final Reports will be prepared using the following protocols: A QA/QC'd database of all sightings and associated details (e.g., distance from vessel, behavior, species, group size/composition) within and outside of the designated shutdown zones, monitoring effort, environmental conditions, and Project-related activity will be provided after field operations and reporting are complete; Weekly PSO/PAM reports (during construction activity) will be submitted every Wednesday following a Sunday-Saturday week; Final reports will follow a standardized format for PSO reporting from activities requiring marine mammal mitigation and monitoring; An annual visual and acoustic monitoring report will be provided to NMFS and to BOEM on April 1st of every year of the Rule summarizing the prior year's activities.		
Long-term Monitoring	• Pre-construction marine mammal surveys will provide a baseline set of data for comparison against the monitoring efforts during construction. • Post-construction marine mammal surveys will provide for an assessment of the potential long-term impacts of the Project. • Survey will involve a combination of visual and acoustic monitoring techniques.		
Operational Monitoring	• Visual monitoring and PAM for marine mammals will occur during vessel transits to and from the Project area as described above under vessel speed restrictions (standard and adaptive plans).		
Impact Pile Driving			
PAM for impact pile driving	• 4-hour PAM operator rotations for 24-hour operation vessels. • There will be a PAM operator on duty conducting acoustic monitoring in coordination with the visual PSOs during all pre-start clearance periods, piling, and post-piling monitoring periods. • Passive acoustic monitoring will include and extend beyond the largest shutdown zone for low- and mid-frequency cetaceans. • Mitigation zones established for all species, including NARW will be applied accordingly depending on the season in which work is performed, summer (May-November) or winter (December-April).	Marine Mammals	BOEM, BSEE, and NMFS

Measure Number / Name	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[1]
Visual monitoring for impact pile driving	• Six to eight visual PSOs and PAM operators (may be located on shore) on the pile driving vessel and four to eight visual PSOs and PAM operators on any secondary marine mammal monitoring vessel. • Two visual PSOs will hold watch on each construction and secondary vessel during pre-start clearance, throughout pile driving, and 30 minutes after piling is completed. • PSOs will visually monitor the harbor porpoise, pinniped, and dolphin shutdown zones. • The secondary vessel will be positioned and circling at the outer limit of the low-frequency and mid-frequency cetacean shutdown zone. PSOs stationed on the secondary vessel will ensure the outer portion of the shutdown zones and prestart clearance zone are visually monitored.	Marine Mammals, Sea Turtles	BOEM, BSEE, and NMFS
Daytime visual monitoring for impact pile driving (daytime visual monitoring is defined by the period between nautical twilight rise and set for the region)	• Visual PSOs should begin surveying the monitoring zone at least 60 minutes prior to the start of pile driving. • PSOs will monitor for 30 minutes after each piling event. • PSOs will monitor the shutdown zone with the naked eye and reticle binoculars while one PSO periodically scans outside the shutdown zone using the mounted big eye binoculars. • The secondary vessel will be positioned and circling at the outer limit of Large Whale SZ • Monitoring equipment and personnel planned for use during standard daytime and low-visibility and nighttime piling is presented in Table H-1a.	Marine Mammals, Sea Turtles	BOEM, BSEE, and NMFS

<table>
<tr><th>Measure Number / Name</th><th>Description</th><th>Resource Area Mitigated</th><th>BOEM's Identification of the Anticipated Enforcing Agency[1]</th></tr>
<tr><td></td><td>
Table H-1a. Personnel and equipment use for all marine mammal monitoring vessels during pre-start clearance, foundation impact pile driving, and post piling monitoring (adapted from Table 12 on the draft PSSMP (Sunrise Wind 2022b).
<table>
<tr><th rowspan="2">Item</th><th colspan="2">Standard Daytime</th><th colspan="2">Monitoring for Nighttime and Low Visibility</th></tr>
<tr><th>Number on Construction Vessel</th><th>Number on Secondary Vessel</th><th>Number on Construction Vessel</th><th>Number on Secondary Vessel</th></tr>
<tr><td>Visual PSOs on watch</td><td>2</td><td>2</td><td>2</td><td>2</td></tr>
<tr><td>PAM operators on duty[1]</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Reticle binoculars</td><td>2</td><td>2</td><td>0</td><td>0</td></tr>
<tr><td>Mounted thermal/IR camera system[2]</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Mounted "big-eye" binocular</td><td>1</td><td>1</td><td>0</td><td>0</td></tr>
<tr><td>Monitoring station for real time PAM system[3]</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Hand-held or wearable NVDs</td><td>0</td><td>0</td><td>2</td><td>2</td></tr>
<tr><td>IR spotlights</td><td>0</td><td>0</td><td>2</td><td>2</td></tr>
<tr><td>Data collection software system</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>PSO-dedicated VHF radios</td><td>2</td><td>2</td><td>2</td><td>2</td></tr>
<tr><td>Digital single-lens reflex camera equipped with 300-mm lens</td><td>1</td><td>1</td><td>0</td><td>0</td></tr>
</table>
[1] PAM operator may be stationed on the vessel or at an alternative monitoring location.
[2] The camera systems will be automated with detection alerts that will be checked by a PSO on duty; however, cameras will not be manned by a dedicated observer.
[3] The selected PAM system will transmit real time data to PAM monitoring stations on the vessels and/or a shore side monitoring station.
</td><td></td><td></td></tr>
<tr><td>Daytime periods of reduced visibility for impact pile driving</td><td>• If the Level B harassment zone is obscured, the two PSOs on watch will continue to monitor the shutdown zone using thermal camera systems, handheld night-vision devices (NVD) and mounted IR camera (as able).
• All PSOs on duty will be in contact with the on-duty PAM operator who will monitor the PAM systems for acoustic detections of marine mammals that are vocalizing in the area.</td><td>Marine Mammals, Sea Turtles</td><td>BOEM, BSEE, and NMFS</td></tr>
</table>

Measure Number / Name	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[1]
Nighttime visibility for construction and secondary vessels	• Pile driving during nighttime hours could potentially occur when a pile installation is started during daylight and, due to unforeseen circumstances, would need to be finished after dark. New piles could be initiated after dark to meet schedule requirements. • Visual PSOs will rotate in pairs: one observing with a handheld NVD and one monitoring the infrared (IR) thermal imaging camera system[2]. There will also be a PAM operator on duty conducting acoustic monitoring in coordination with the visual PSOs. • The mounted thermal cameras may have automated detection systems or require manual monitoring by a PSO. • PSOs will focus their observation effort during nighttime watch periods within the shutdown zones and waters immediately adjacent to the vessel. • If possible, deck lights will be extinguished or dimmed during night observations when using night-vision devices; however, if the deck lights must remain on for safety reasons, the PSO will attempt to use the NVD in areas away from potential interference by these lights. If a PSO is unable to monitor the visual clearance or shutdown zones with available NVDs. Piling will not commence or will be halted (as safe to do so).	Marine Mammals, Sea Turtles	BOEM, BSEE, and NMFS
Acoustic monitoring during impact pile driving	• PAM operator will monitor during all pre-start clearance periods, piling, and post-piling monitoring periods (daylight, reduced visibility, and nighttime monitoring). • PAM should begin at least 60 minutes prior to the start of piling. • One PAM operator on duty during both daytime and nighttime/low visibility monitoring. • Since visual observations within the applicable shutdown zones can become impaired at night or during daylight hours due to fog, rain, or high sea states, visual monitoring with thermal and NVDs will be supplemented by PAM during these periods • PAM operator will monitor during all pre-start clearance periods, piling, and post-piling monitoring periods (daylight, reduced visibility, and nighttime monitoring). • Real-time PAM systems require at least one PAM operator to monitor each system by viewing data or data products that are streamed in real-time or near real-time to a computer workstation and monitor located on a Project vessel or onshore.	Marine Mammals	BOEM, BSEE, and NMFS

[2] In support of the request for nighttime piling, Ørsted is assessing the opportunity to conduct a marine mammal monitoring field demonstration project in the spring of 2022. Additional details on the project and further engagement will follow.

Measure Number / Name	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[1]
	• PAM operator will inform the PSOs on duty of animal detections approaching or within applicable ranges of interest to the pile-driving activity. The PAM system will be deployed with a capable of monitoring up to 10 km radii from the pile. • A Passive Acoustic Monitoring Plan (PAM) Plan must be submitted to NMFS and BOEM for review and approval at least 90 days prior to the planned start of pile driving. • It is expected there will be a PAM operator stationed on at least one of the dedicated monitoring vessels in addition to the PSOs or located remotely/onshore. • PAM operators will complete specialized training for operating PAM systems prior to the start of monitoring activities. • All on-duty PSOs will be in contact with the PAM operator on duty, who will monitor the PAM systems for acoustic detections of marine mammals that are vocalizing in the area. • Acoustic monitoring during nighttime and low visibility conditions during the day will complement visual monitoring (e.g., PSOs and thermal cameras) and will cover an area of at least the SZ around each foundation.		
Shutdown zones for impact pile driving	• Summer distances were determined from the modeling conducted assuming a summer sound speed profile. These distances will be used to implement shutdown zones during the months identified in the acoustic modeling report as being represented by the summer sound speed profile (April – November). Winter distances were determined from the modeling conducted assuming a winter sound speed profile. These distances will be used to implement shutdown zones during the months identified in the acoustic modeling report as being represented by the winter sound speed profile (December – March). **Table H-1b. Summary of Shutdown Zones[1,2] during Impact Pile Driving for Summer (April through November) and Winter (December through March) with 10 dB broadband sound attenuation (Sunrise Wind 2022c)**	Marine Mammals, Sea Turtles	BOEM, BSEE, and NMFS

<table>
<tr><th>Measure Number / Name</th><th>Description</th><th>Resource Area Mitigated</th><th>BOEM's Identification of the Anticipated Enforcing Agency[1]</th></tr>
<tr><td></td><td>
<table>
<tr><th>Species</th><th>WTG Summer Distances (May through November)</th><th>WTG Winter Distances (December)</th><th>OCS-DC Summer Distances (May through November)</th><th>OCS-DC S Winter Distances (December)</th></tr>
<tr><td>NARW Visual Detection</td><td>At any distance</td><td>At any distance</td><td>At any distance</td><td>At any distance</td></tr>
<tr><td>NARW Acoustic Detection</td><td>3,700 m</td><td>4,300 m</td><td>5,600 m</td><td>6,500 m</td></tr>
<tr><td>Mysticete whales (low frequency cetaceans)</td><td>3,700 m</td><td>4,300 m</td><td>5,600 m</td><td>6,500 m</td></tr>
<tr><td>Sperm whale (mid-frequency cetacean)</td><td>3,700 m</td><td>4,300 m</td><td>5,600 m</td><td>6,500 m</td></tr>
<tr><td>Mid-frequency cetaceans (except sperm whales)</td><td>NAS perimeter</td><td>NAS perimeter</td><td>NAS perimeter</td><td>NAS perimeter</td></tr>
<tr><td>Harbor Porpoise (high frequency cetacean)</td><td>200 m</td><td>NAS perimeter</td><td>900 m</td><td>600 m</td></tr>
<tr><td>Seals</td><td>100 m</td><td>100 m</td><td>1,800 m</td><td>1,800 m</td></tr>
</table>
</td><td></td><td></td></tr>
<tr><td>Pre-start clearance for impact pile driving</td><td>

Piling may be initiated any time within a 24-hour period.
A 60-minute pre-start clearance period will be implemented for impact pile driving activities.
Prior to the beginning of each pile driving event, visual PSOs and PAM operators will monitor the Level B harassment zone at least 60 minutes prior to the start of pile driving, during all pile driving activities, and continue at all times during impact pile driving.
All clearance zones will be confirmed to be free of marine mammals and sea turtles prior to initiating ramp-up and large whale clearance zone (3,700 m or as modified) will be fully visible, and the NARW acoustic zone monitored for at least 30 minutes prior to commencing ramp-up.
If a marine mammal or sea turtle is observed entering or within the relevant shutdown zones prior to the initiation of pile driving activity, pile driving activity will be delayed and will not begin until either the marine mammal(s) or sea turtle(s) has voluntarily left the respective clearance zones and has been visually or acoustically confirmed beyond that clearance zone, or when the additional

</td><td>Marine Mammals, Sea Turtles</td><td>BOEM, BSEE, and NMFS</td></tr>
</table>

Measure Number / Name	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[1]
	time period has elapsed with no further sighting or acoustic detection (i.e., 15 minutes for small odontocetes, and 30 minutes for all other species).		
Ramp-up (soft start) for impact pile driving	• Ramp-up is required prior to the initiation of HRG sources (boomers, sparkers, Chirps) • Each monopile installation will begin with a minimum of 20-minute soft-start procedure as technically feasible. • Soft-start procedure will not begin until the shutdown zone has been cleared by the visual PSO or PAM operators. • If a marine mammal is detected within or about to enter the applicable shutdown zone (or a NARW sighted at any distance), prior to or during the soft start procedure, pile driving will be delayed until the animal has been observed exiting the shutdown zone or until an additional time period has elapsed with no further sighting (i.e., 15 minutes for small odontocetes and 30 minutes for all other species).	Marine Mammals, Sea Turtles, ESA-listed Fish	BOEM, BSEE, and NMFS
Shutdowns for impact pile driving	• If a marine mammal is detected entering or within the respective shutdown zones after pile driving has commenced, an immediate shutdown of pile driving will be implemented unless SRW determines shutdown is not feasible due to an imminent risk of injury or loss of life to an individual. • If shutdown is called for Sunrise Wind and/or its contractor determines shutdown is not feasible due to risk of injury or loss of life, there will be a reduction of hammer energy. • Following shutdown, pile driving will only be initiated once all shutdown zones are confirmed by PSOs to be clear of marine mammals for the minimum species-specific time periods. • The shutdown zone will be continually monitored by PSOs and PAM operators during any pauses in pile driving. • If a marine mammal is sighted within the shutdown zones during a pause in piling, piling will be delayed until the animal(s) has moved outside the shutdown zone and no marine mammals are sighted for a period of 15 minutes for dolphins, porpoises, and seals, 30 minutes for whales, including the NARW.	Marine Mammals	BOEM, BSEE, and NMFS
Post-impact piling monitoring	• PSOs will continue to survey the shutdown zones throughout the duration of pile installation and for a minimum of 30 minutes after piling has been completed.	Marine Mammals, Sea Turtles	BOEM, BSEE, and NMFS
Noise attenuation systems (NAS)	• The Project will use NAS for all piling events. The Project is committed to achieving the modeled ranges associated with 10 dB of broadband noise attenuation of impact pile driving sounds source levels or smaller ranges, as described below in Section 6.3.2 of the ITA Application. The type and	Marine Mammals, Sea Turtles,	BOEM, BSEE, and NMFS

Measure Number / Name	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[1]
during impact pile driving	number of NAS to be used during construction have not yet been determined but will consist of a double big bubble curtain or a single bubble curtain paired with an additional sound attenuation device or a double big bubble curtain. Based on prior measurements this combination of NAS is reasonably expected to achieve greater than 10 dB broadband attenuation of impact pile driving sounds. A protected species mitigation and monitoring plan will describe mitigation measures developed in coordination with BOEM and NOAA Fisheries, and these measures will be included within the Letter of Authorization issued for the Project.	ESA-listed Fish, EFH, Finfish	
Sound measurements for impact pile driving	• Measurements of the installation of at least three monopile foundations will be made and results used to modify shutdown zones, as appropriate. • For each monopile measures, Sunrise Wind will estimate ranges to Level A and Level B harassment isopleths by extrapolating from in-situ measurements at multiple distances from the monopile including at least one measurement location of 750 m from the monopile. • A sound field verification plan will be submitted to NMFS for review and approval at least 90 days prior to planed monitoring and mitigation distances. • This will include procedures for how measurement results will be used to justify any requested changes to planned monitoring and mitigation distances.	Marine Mammals, Sea Turtles	BOEM, BSEE, and NMFS
Impact Pile Driving Reporting	• All data recording will be conducted using Mysticetus software. • Operations, monitoring conditions, observation effort, all marine mammal detections, any mitigation actions, and any other recording requirements will be recorded. • Members of the monitoring team must consult NMFS' NARW reporting systems for the presence of NARWs in the Project area. • DMAs will be reported across all Project vessels. • Additional details regarding reporting are provided below under "Reporting" In the PSSMP. • Sunrise Wind must submit weekly PSO and PAM monitoring reports to DOI and NMFS during pile driving. Weekly reports must document the daily start and stop times of all pile driving, the daily start and stop times of associated observation periods by the PSOs, details on the deployment of PSOs, and all detections of marine mammals and sea turtles. The weekly reports must be submitted to BOEM (renewable_reporting@boem.gov), BSEE (at OSWSubmittals@bsee.gov), and NMFS Greater Atlantic Regional Fisheries Office, Protected Resources Division (nmfs.gar.incidental-take@noaa.gov).		BOEM, BSEE, and NMFS

Measure Number / Name	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[1]
	• Sunrise Wind must submit monthly PSO, PAM, and construction activity PSO, PAM, and construction activity monitoring reports to DOI and NMFS during construction and for the first year of operations. Monthly reports must document the daily start and stop times of all pile driving, the daily start and stop times of associated observation periods by the PSOs, details on the deployment of PSOs, and all detections of marine mammals and sea turtles. The monthly reports must be submitted to BOEM (at renewable_reporting@boem.gov), BSEE (at OSWSubmittals@bsee.gov), and NMFS Greater Atlantic Regional Fisheries Office, Protected Resources Division (at nmfs.gar.incidental-take@noaa.gov). • Beginning in Year 2 of operations, Sunrise Wind must 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 activity, and all observations of ESA-listed species. The annual reports must be submitted to BOEM (at renewable_reporting@boem.gov) and BSEE (at OSWSubmittals@bsee.gov).		
Vibratory Pile Driving			
Monitoring Equipment	• 2 sets of reticle binoculars • 2 hand-held or wearable NVDs • 2 IR spotlights • 1 data collection software system • 2 PSO-dedicated VHF radios • 1 digital single-lens reflect camera equipped with 300-mm lens	Marine Mammals, Sea Turtles	BOEM, BSEE, and NMFS
Visual monitoring for vibratory pile driving	• All observations will take place from one of the construction vessels stationed at or near the vibratory piling location. • Two PSOs on duty on the construction vessel. • No PAM operations will be utilized due to the likelihood of masking effects of the vibratory sheet pile driving activities which will result in ineffective acoustic monitoring opportunities. • PSOs will continue to survey the shutdown zone using visual protocols throughout the installation of each cofferdam sheet pile and for a minimum of 30 minutes after piling has been completed.	Marine Mammals, Sea Turtles	BOEM, BSEE, and NMFS
Daytime visual monitoring for	• Two PSOs will concurrently maintain watch from the construction or support vessel during the pre-start clearance period, throughout vibratory pile driving, and 30 minutes after piling is completed. • Two PSOs will conduct observations concurrently.	Marine Mammals, Sea Turtles	BOEM, BSEE, and NMFS

Measure Number / Name	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[1]
vibratory pile driving	• One observer will monitor the shutdown zones with the naked eye and reticle binoculars; one PSO will monitor in the same way but will periodically scan outside the shutdown zones using the mounted big eye binoculars.		
Daytime visual monitoring during periods of low visibility for vibratory pile driving	• One PSO will monitor the shutdown zone with the mounted infrared camera while the other maintains visual watch with the naked eye/binoculars.	Marine Mammals, Sea Turtles	BOEM, BSEE, and NMFS
Nighttime visual monitoring for vibratory pile driving	• Construction at the landfall site will not occur at night.	Marine Mammals, Sea Turtles	BOEM, BSEE, and NMFS
Acoustic Monitoring	• No PAM operators will be needed due to the likelihood of masking effects of the vibratory pile driving activities which will result in ineffective acoustic monitoring opportunities.		
Shutdown zones for vibratory pile driving	• Shutdown zones and pre-clearance zones for Project vibratory pile driving activities are presented in Table H-1c.	Marine Mammals, Sea Turtles	

<table>
<tr><th>Measure Number / Name</th><th>Description</th><th>Resource Area Mitigated</th><th>BOEM's Identification of the Anticipated Enforcing Agency[1]</th></tr>
<tr><td></td><td>Table H-1c. Shutdown Zones for Vibratory Sheet Pile Driving and Casing Pipe Impact Pile Driving (Sunrise Wind 2022c)
<table>
<tr><th>Species</th><th>Vibratory Sheet Pile Driving Shutdown Zone (m)</th><th>Casing Pipe Impact Pile Driving Shutdown Zone (m)</th></tr>
<tr><td>Mysticete whales (low-frequency cetaceans)</td><td>50</td><td>500</td></tr>
<tr><td>Sperm whale (mid-frequency cetacean)</td><td>50</td><td>100</td></tr>
<tr><td>Mid-Frequency Cetaceans except sperm whales</td><td>50</td><td>100</td></tr>
<tr><td>Harbor Porpoise (high-frequency cetacean)</td><td>200</td><td>500</td></tr>
<tr><td>Seals</td><td>10</td><td>100</td></tr>
</table></td><td></td><td></td></tr>
<tr><td>Pre-start clearance for vibratory pile driving</td><td>• PSOs will monitor the shutdown zone for 30 minutes prior to the start of vibratory pile driving.
• If a marine mammal or sea turtle is observed entering or within the respective shutdown zones, piling cannot commence until the animal(s) has exited the shutdown zone or time has elapsed since the last sighting (30 minutes for large whales (low-frequency cetaceans and sperm whales), 15 minutes for dolphins (mid-frequency cetaceans), porpoises (high-frequency cetaceans), and pinnipeds, 60 minutes for sea turtles).</td><td>Marine Mammals, Sea Turtles</td><td>BOEM, BSEE, and NMFS</td></tr>
<tr><td>Ramp-up (soft start) for vibratory pile driving</td><td>• Ramp-up will not be initiated if the shutdown zone cannot be adequately monitored (i.e., obscured by fog, inclement weather, poor lighting conditions) for a 30-minute period.</td><td>Marine Mammals, Sea Turtles</td><td>BOEM, BSEE, and NMFS</td></tr>
<tr><td>Shutdowns for vibratory pile driving</td><td>• If a marine mammal or sea turtle is observed entering or within the respective shutdown zones after sheet pile installation has commenced, a shutdown will be implemented as long as health and safety is not compromised.</td><td>Marine Mammals, Sea Turtles</td><td>BOEM, BSEE, and NMFS</td></tr>
</table>

Measure Number / Name	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[1]
	• The shutdown zone must be continually monitored by PSOs during any pauses in vibratory pile driving, activities will be delayed until the animal(s) has moved outside the shutdown zone and no marine mammals are sighted for a period of 30 minutes for whales, including the NARW, 15 minutes for dolphins, porpoises and pinnipeds, and 60 minutes for sea turtles.		
Reporting	• All data recording will be conducted using Mysticetus software. • Operations, monitoring conditions, observation effort, all marine mammal detections, any mitigation actions, and any other recording requirements prescribed by NMFS will be recorded. • Members of the monitoring team must consult NMFS' NARW reporting systems for the presence of NARWs in the Project area. • DMAs will be reported across all Project vessels. • Sunrise Wind must submit weekly PSO and PAM monitoring reports to DOI and NMFS during pile driving. Weekly reports must document the daily start and stop times of all pile driving, the daily start and stop times of associated observation periods by the PSOs, details on the deployment of PSOs, and all detections of marine mammals and sea turtles. The weekly reports must be submitted to BOEM (renewable_reporting@boem.gov), BSEE (at OSWSubmittals@bsee.gov), and NMFS Greater Atlantic Regional Fisheries Office, Protected Resources Division (nmfs.gar.incidental-take@noaa.gov). • Sunrise Wind must submit monthly PSO, PAM, and construction activity PSO, PAM, and construction activity monitoring reports to DOI and NMFS during construction and for the first year of operations. Monthly reports must document the daily start and stop times of all pile driving, the daily start and stop times of associated observation periods by the PSOs, details on the deployment of PSOs, and all detections of marine mammals and sea turtles. The monthly reports must be submitted to BOEM (at renewable_reporting@boem.gov), BSEE (at OSWSubmittals@bsee.gov), and NMFS Greater Atlantic Regional Fisheries Office, Protected Resources Division (at nmfs.gar.incidental-take@noaa.gov). • Beginning in Year 2 of operations, Sunrise Wind must 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 activity, and all observations of ESA-listed species. The annual reports must be submitted to BOEM (at renewable_reporting@boem.gov) and BSEE (at OSWSubmittals@bsee.gov).	Marine Mammals, Sea Turtles	BOEM, BSEE, and NMFS

Measure Number / Name	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[1]
Sound Measurements	• Measurements of the installation of sheet piles using a vibratory hammer will be made during landfall construction activities. • Measurements will provide verification of modeled ranges to the harassment threshold isopleths and provide sound measurement data collected using International Organization for Standardization (ISO)-standard methodology for comparison among projects and to inform future projects. • A sound field verification plan will be submitted to NMFS for review and approval at least 90 days prior the planned start of vibratory and/or impulsive pile driving for landfall construction.	Marine Mammals, Sea Turtles	BOEM, BSEE, and NMFS
HRG Surveys			
General HRG Surveys	• The following mitigation and monitoring measures for HRG surveys apply only to sound sources with operating frequencies below 180 kHz. There are no mitigation or monitoring protocols required for sources operating >180 kHz. • Shutdown, pre-start clearance, and ramp-up procedures will not be conducted during HRG survey operations using only non-impulsive sources (e.g., USBL and parametric sub-bottom profilers) other than non-parametric sub-bottom profilers (e.g., CHIRPs). Pre-clearance and ramp-up, but not shutdown, will be conducted when using non-impulsive, non-parametric sub-bottom profilers.	Marine Mammals	BOEM, BSEE, and NMFS
Monitoring Equipment for HRG Surveys	• 2 pairs of reticle binoculars • 1 mounted thermal/IR camera system during nighttime and low visibility conditions • 2 hand-held or wearable night vision devices (NVDs) • 2 IR spotlights • 1 data collection software system • 2 PSO-dedicated very high frequency (VHF) radios • 1 digital single-lens reflex camera equipped with a 300-mm lens	Marine Mammals	BOEM, BSEE, and NMFS
Visual Monitoring for HRG Surveys	• 4 - 6 PSOs on all 24-hour survey vessels • 2 – 3 PSOs on all daylight only (~12 hour) survey vessels • The PSOs will begin observation of the shutdown zones prior to the initiation of HRG survey operations and will continue throughout the survey activity and/or while equipment operating below 180 kHz is in use. • PSOs will monitor the NMFS NARW reporting systems including WhaleAlert and RWSAS once every 4-hour shift during Project-related activities.	Marine Mammals	BOEM, BSEE, and NMFS

Measure Number / Name	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[1]
Daytime Visual Monitoring (period between nautical twilight rise and set for the region) for HRG Surveys	• 1 PSO on watch during all pre-clearance and all source operations and 30 minutes post operations. • PSOs will use reticle binoculars and the naked eye to scan the monitoring zone for marine mammals.	Marine Mammals	BOEM, BSEE, and NMFS

Autonomous Surface Vehicle/ (ASV) Operations for HRG Surveys	• Should an ASV be utilized during surveys, the following procedures will be implemented:
	  ○ PSOs will be stationed aboard the mother vessel to monitor the ASV in a location which will offer a clear, unobstructed view of the ASV's shutdown and monitoring zones.
	  ○ When in use, the ASV will be within 800 m (2,625 ft) of the primary vessel while conducting survey operations.
	  ○ For monitoring around an ASV, if utilized, a dual thermal/high definition (HD) camera will be installed on the mother vessel facing forward and angled in a direction so as to provide a field of view ahead of the vessel and around the ASV.
	  ○ PSOs will be able to monitor the real-time output of the camera on hand-held iPads. Images from the cameras can be captured for review and to assist in verifying species identification.
	  ○ A monitor will also be installed on the bridge displaying the real-time picture from the thermal/HD camera installed on the front of the ASV itself, providing an additional forward field of view of the craft.
	  ○ Night-vision goggles with thermal clip-ons, as mentioned above, and a hand-held spotlight will be provided such that PSOs can focus observations in any direction around the mother vessel and/or the ASV.
		Marine Mammals	BOEM, BSEE, and NMFS

Nighttime and low visibility visual observations	• The lead PSO will determine if conditions warrant implementing reduced visibility protocols. • Two PSOs on watch during all pre-clearance periods, all operations, and for 30 minutes following use of HRG sources operating below 180 kHz.	Marine Mammals	BOEM, BSEE, and NMFS

Measure Number / Name	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[1]
for HRG surveys	• Each PSO will use the most appropriate available technology (i.e., infrared camera and night-vision device) and viewing locations to monitor the shutdown zones and maintain vessel separation distances.		
Pre-start clearance for HRG surveys	• Pre-start clearance survey will only be conducted for non-impulsive, non-parametric SBPs and impulsive, non-parametric HRG survey equipment other than CHIRP SBPs operating at frequencies <180 kHz • Prior to the initiation of equipment ramp-up, PSOs and PAM operators will conduct a 30-minute watch of the shutdown zones to monitor for marine mammals. • The shutdown zones must be visible using the naked eye or appropriate visual technology during the entire clearance period for operations to start; if the shutdown zones are not visible, source operations <180 kHz will not commence. • Ramp-up may not be initiated if any marine mammal(s) is detected within its respective shutdown zone. • If a marine mammal is observed within its respective shutdown zone during the pre-clearance period, ramp-up will not begin until the animal(s) has been observed exiting its respective shutdown zone or until an additional time period has elapsed with no further sighting (i.e., 15 minutes for small odontocetes, 30 minutes for all other marine mammals).	Marine Mammals	BOEM, BSEE, and NMFS
Ramp-up (soft start) for HRG surveys	• Ramp-ups will only be conducted for non-impulsive, non-parametric SBPs and impulsive, non-parametric HRG survey equipment other than CHIRP SBPs operating at frequencies <180 kHz. • Where technically feasible, a ramp-up procedure will be used for HRG survey equipment capable of adjusting energy levels at the start or re-start of HRG survey activities. Ramp-up procedures provide additional protection to marine mammals near the Project area by allowing them to vacate the area prior to the commencement of survey equipment use at full power. • Ramp-up will not be initiated during periods of inclement conditions or if the shutdown zones cannot be adequately monitored by the PSOs, using the appropriate visual technology for a 30-minute period. • Ramp-up will begin by powering up the smallest acoustic HRG equipment at its lowest practical power output. When technically feasible, the power will then be gradually turned up and all other acoustic sources added in a way such that the source level would increase cautiously. • If a marine mammal is detected within or about to enter its respective shutdown zone, ramp-up will be delayed.	Marine Mammals	BOEM, BSEE, and NMFS

<table>
<tr><th>Measure Number / Name</th><th>Description</th><th>Resource Area Mitigated</th><th>BOEM's Identification of the Anticipated Enforcing Agency[1]</th></tr>
<tr><td></td><td>• Ramp-up will continue once the animal(s) has been observed exiting its respective shutdown zone or until an additional time period has elapsed with no further sighting (i.e., 15 minutes for small odontocetes, 30 minutes for all other marine mammal species).</td><td></td><td></td></tr>
<tr><td>Shutdowns for HRG surveys</td><td>• Shutdown of impulsive, non-parametric HRG survey equipment other than CHRIP sub-bottom profilers operating at frequencies <180 kHz is required if a marine mammal is sighted at or within its respective shutdown zone.
• Shutdowns will not be implemented for dolphins that voluntarily approach the survey vessel.
• Subsequent restart of the survey equipment will be initiated using the same procedure described under pre-start clearance.
• If the acoustic source is shut down for reasons other than mitigation (e.g., mechanical difficulty) for less than 30 minutes, it will be reactivated without ramp-up if PSOs have maintained constant observation and no detections of any marine mammal have occurred within the respective shutdown zones.
• If the acoustic source is shut down for a period longer than 30 minutes or PSOs were unable to maintain constant observation, then ramp-up and pre-start clearance procedures will be initiated.</td><td>Marine Mammals</td><td>BOEM, BSEE, and NMFS</td></tr>
<tr><td>Shutdown zones for HRG surveys</td><td>• Shutdowns will only be conducted for impulsive, non-parametric HRG survey equipment other than CHIRP SBPs operating at frequencies <180 kHz.
• Table H-1d describes the standard mitigation and harassment zones established for HRG survey activities.

Table H-1d. Shutdown Zones for HRG Surveys (Sunrise Wind 2022c)
<table>
<tr><th>Species</th><th>Shutdown Zone (m)</th></tr>
<tr><td>Mysticete Whales (Low-Frequency Cetaceans), excluding NARW</td><td>100</td></tr>
<tr><td>NARW</td><td>500</td></tr>
<tr><td>Sperm whale, Risso's dolphin, long-finned pilot whale, and short-finned pilot whale (mid frequency cetaceans)</td><td>100</td></tr>
<tr><td>Harbor porpoise (High-Frequency Cetacean)</td><td>100</td></tr>
<tr><td>Seals</td><td>100</td></tr>
</table></td><td>Marine Mammals</td><td>BOEM, BSEE, and NMFS</td></tr>
</table>

Measure Number / Name	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[1]
	Notes: No shutdown zone mitigation measures will be applied for Atlantic white sided dolphin, Atlantic spotted dolphin, short-beaked common dolphin, and bottlenose dolphin, offshore, so the shutdown zone for medium-frequency cetaceans is not applicable to these four species.		
Post-construction HRG survey reporting	• All data recording will be conducted using Mysticetus or similar software. • Operations, monitoring conditions, observation effort, all marine mammal detections, and any mitigation actions will be recorded. • Post construction, Sunrise Wind will provide to BOEM and NMFS a final report annually for HRG survey activities. The final report must address any comments on the draft report provided to Sunrise Wind by BOEM and NMFS. The report must include a summary of survey activities, all PSO and incident reports, and an estimate of the number of listed marine mammals observed and/or taken during these survey activities. • The Lessee must submit monthly PSO, PAM, and construction activity monitoring reports to DOI and NMFS during construction and for the first year of operations. Monthly reports must document the daily start and stop times of all pile driving, the daily start and stop times of associated observation periods by the PSOs, details on the deployment of PSOs, and all detections of marine mammals and sea turtles, as further specified below. PSO reports may consist of raw data and must include the information described below under reporting instructions. DOI will work with the Lessee to ensure that no confidential business information is released in the monitoring reports. The monthly reports must be submitted to BOEM (at renewable_reporting@boem.gov), BSEE (at OSWSubmittals@bsee.gov), and NMFS Greater Atlantic Regional Fisheries Office, Protected Resources Division (at nmfs.gar.incidental-take@noaa.gov). The Lessee must complete any editing, review, and quality assurance checks before reports are submitted. The reports must begin at the start of PAM or visual monitoring during pile driving, be submitted on the 15th of every month, and cover construction during the previous month until pile-driving stops. The Lessee must submit a final report covering monitoring over the entire construction period within 90 calendar days after pile driving is completed	Marine Mammals	BOEM, BSEE, and NMFS

Measure Number / Name	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[1]
UXO/MEC Disposal			
General UXO/MEC Disposal	• For UXO/MECs that are positively identified in proximity to planned activities on the seabed, several alternative strategies will be considered prior to detonating the UXO/MEC in place. These may include relocating the activity away from the UXO/MEC (avoidance), moving the UXO/MEC away from the activity (lift and shift), cutting the UXO/MEC open to apportion large ammunition or deactivate fused munitions, using shaped charges to reduce the net explosive yield of a UXO/MEC (low-order detonation), or using shaped charges to ignite the explosive materials and allow them to burn at a slow rate rather than detonate instantaneously (deflagration). Only after these alternatives are considered would a decision to detonate the UXO/MEC in place be made. If deflagration is conducted, mitigation and a monitoring measure would be implemented as if it was a high order detonation based on UXO/MEC size. Decision on removal method will be made in consultation with a UXO/MEC specialist and in coordination with the agencies with regulatory oversite of UXO/MEC. For detonation that cannot be avoided due to safety considerations, a number of mitigation measures will be employed by Sunrise Wind. No more than a single UXO/MEC will be detonated within a 24-hour period.		
Visual monitoring equipment for UXO/MEC Disposal	• Monitoring Equipment would consist of: ○ 2 visual PSOs and 1 PAM operator will be on watch on each PSO vessel. ○ There will be a team of six to eight visual and acoustic PSOs on UXO monitoring vessels. ○ A single vessel is anticipated to adequately cover a radius of 2,000 m. The number of vessels will depend on the size of the zones to be monitored. ○ PAM operators may be located remotely/onshore. ○ 2 reticle binoculars ○ 1 pair of mounted "big eye" binoculars ○ 1 monitoring station for real time PAM system ○ Data collection software system ○ PSO-dedicated VHF radios ○ Digital single-lens reflex camera equipped with 300-mm lens.	Marine Mammals, Sea Turtles	BOEM, BSEE, and NMFS
Pre-start Clearance for UXO/MEC Disposal	• All mitigation and monitoring zones assume the use of a NAS resulting in a 10 dB reduction of noise levels. Mitigation and monitoring zones specific to marine mammal hearing groups for the five different charge weight bins are included below as summarized from the propagation modeling report for the Project.	Marine Mammals, Sea Turtles	BOEM, BSEE, NMFS

Measure Number / Name	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[1]

Table H-1e. Mitigation and Monitoring Zones Associated with In-Situ UXO/MEC Detonation of Binned Charged Weights, with a 10 dB Noise Attenuation System for the Sunrise Wind Farm (as adopted from Table 53, Sunrise Wind 2022c)

Marine Mammal Hearing Groups	UXO/MEC Charge Weight[1]				
	E4 (2.3 kg)	E6 (9.1 kg)	E8 (45.4 kg)	E10 (227 kg)	E12 (454 kg)
	Pre-Start Clearance Zone[2] (m)	Pre-Start Clearance Zone (m)	Pre-Start Clearance Zone (m)	Pre-Start Clearance Zone (m)	Pre-Start Clearance Zone (m)
Low-Frequency Cetaceans	400	800	1,600	3,000	3,700
Mid-Frequency Cetaceans	50	50	100	400	500
High-Frequency Cetaceans	1,800	2,600	3,900	5,400	6,200
Phocid Pinnipeds	100	250	600	1,100	1,500

Kg = kilograms; m = meters

[1] UXO/MEC charge weights are groups of similar munitions defined by the U.S. Navy and binned into five categories (E4 – E12) by weight (equivalent weight in TNT). For this assessment, four project sites (S1-S4) were chosen and modeled (see Hannay and Zykov 2021) for the detonation of each charge weight bin.

[2]Pre-start clearance zones were calculated by selecting the largest Level A threshold (the larger of either the PK or SEL noise metric). The chosen values were the most conservative per charge weight bin across each of the four modeled sites. A 20 percent buffer was then added to the modeled distances and zones were rounded up for the PSO clarity.

Measure Number / Name	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[1]

Table H-1f. Mitigation and Monitoring Zones Associated with Unmitigated UXO/MEC Detonation of Binned Charge Weights for the Sunrise Wind Farm (Table 54, Sunrise Wind 2022c)

Marine Mammal Hearing Groups	UXO/MEC Charge Weight[1]									
	E4 (2.3 kg)		E6 (9.1 kg)		E8 (45.5 kg)		E10 (227 kg)		E12 (454 kg)	
	Pre-Start Clearance Zone[2] (m)	Level B Monitoring Zone[3] (m)	Pre-Start Clearance Zone (m)	Level B Monitoring Zone (m)	Pre-Start Clearance Zone (m)	Level B Monitoring Zone (m)	Pre-Start Clearance Zone (m)	Level B Monitoring Zone (m)	Pre-Start Clearance Zone (m)	Level B Monitoring Zone (m)
Low-Frequency Cetaceans	1,710	7,340	2,810	10,300	4,800	13,900	7,520	17,500	8,800	19,300
Mid-Frequency Cetaceans	214	1,520	385	2,290	714	3,490	1,220	5,040	1,540	5,860
High-Frequency Cetaceans	4,300	11,200	5,750	13,400	7,810	16,000	12,775	19,100	16,098	20,200
Phocid Pinnipeds	804	4,200	1,310	6,200	2,190	9,060	3,740	12,000	4,520	13,300

* = denotes species listed under the Endangered Species Act; kg =kilograms; m = meters; PK = peak pressure level; SEL = sound exposure level.

[1]UXO/MEC charge weights are groups of similar munitions defined by the U.S. Navy and binned into five categories (E4-E12) by weight (equivalent weight in TNT). For this assessment, four project sites (S1-S4) were chosen and modeled (see Hannay and Zykov 2021) for the detonation of each charge weight bin.

[2]Pre-start clearance zones were calculated by selecting the largest Level A threshold (the larger of either the PK or SEL noise metric). The chosen values were the most conservative per charge weight bin across each of the four modeled sites.

[3]Level B monitoring zones were calculated by selecting the largest TTS threshold (the larger of either the PK or SEL noise metric). The chosen values were the most conservative per charge weight bin across each of the four modeled sites.

- A 60-minute pre-start clearance period will be implemented prior to any in-situ UXO/MEC detonation.

Measure Number / Name	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[1]
	• The maximum Low Frequency Level A zone, which constitutes the pre-start clearance zone (see Table H-1e and Table H-1f above) must be fully visible for at least 60 minutes prior to commencing detonation. • All marine mammals must be confirmed to be out of the clearance zone prior to initiating detonation. • If a marine mammal is observed entering or within the relevant clearance zones prior to the initiation of detonation, the detonation must be delayed. • The detonation may commence when either the marine mammal(s) has voluntarily left the respective clearance zone and been visually confirmed beyond that clearance zone, or when 60 minutes have elapsed without redetection for whales, including the NARW, or 15 minutes have elapsed without redetection of dolphins, porpoises, and seals.		
Visual Monitoring During UXO/MEC detonations (Vessel monitoring)	• The number of vessels deployed will depend on Level B harassment zone size and safety set back distance from detonation. A sufficient number of vessels will be deployed to cover the pre-start clearance and shutdown zones 100%. • PSOs will visually monitor the maximum Low Frequency (Large Whale) Level A zone which constitutes the pre-start clearance zone. This zone encompasses the maximum Level A exposure ranges for all marine mammal species except harbor porpoise, where Level A take has been requested due to the large zone sizes associated with High Frequency Cetaceans. • **Primary Vessel Measures:** • 2 PSOs on duty on the primary vessel • Visual PSOs will survey the Level B harassment zone at least 60 minutes prior to a detonation event • 2 PSOs will maintain watch at all times during the pre-start clearance period and 60-minutes after the detonation event • There will be a PAM operator on duty conducting acoustic monitoring in coordination with the visual PSOs during all pre-start clearance periods and post-detonation monitoring periods. • **Additional Vessel Measures** • Visual monitoring will be conducted on an additional vessel following the same methods as stated for the primary vessel in addition to the following measures when monitoring zones have radii greater than 2,000 m. • 2 PSOs on duty on the additional vessel	Marine Mammals, Sea Turtles	BOEM, BSEE, NMFS

Measure Number / Name	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[1]

	• 2 PSOs will maintain watch at all times during the pre-start clearance period and 60-minutes after the detonation event.
	• Based on the pre-start clearance zones for low-frequency cetaceans shown in the table above, an additional vessel will be used in the specified locations for the following UXO/MEC charge weight bins:
	  ○ Sunrise Wind Export Cable: Bins E10 and E 12
	  ○ Sunrise Wind Farm: Bins E10 and E12		

Visual Monitoring during UXO detonations (Aerial Alternative)	• Aerial surveys are typically limited by low cloud ceilings, aircraft availability, survey duration, and HSE considerations and therefore are not considered feasible or practical for all detonation monitoring. However, some scenarios may necessitate the use of an aerial platform. For mitigated or unmitigated detonations with clearance zones greater than 5 km, deployment of sufficient vessels may not be feasible or practical. For these events, visual monitoring will be conducted from an aerial platform. The intent of the aerial visual monitoring is to provide complete visual coverage of the UXO/MEC clearance zones using the following procedures: • During the pre-start clearance period and 60-minutes after the detonation event as flight time allows, two PSOs will be deployed on an aerial platform. • Surveys will be conducted in a grid with 1 km line spacing, encompassing the clearance zone. • PSOs will monitor the clearance zones with the naked eye and reticle binoculars. • Aerial PSOs may exceed 4-hour watch duration but will be limited by total flight duration not likely to exceed 6 hours. • PSOs will visually monitor the maximum low-frequency cetacean (Large Whale) Level A zone which constitutes the pre-start clearance zones (Table H-1g). This zone encompasses the maximum Level A exposure ranges for all marine mammal species except harbor porpoise, where Level A take has been requested due to the large zone sizes associated with high-frequency cetaceans. • There will be a PAM operator on duty conducting acoustic monitoring in coordination with the visual PSOs during all pre-start clearance periods and post-detonation monitoring periods.	Marine Mammals, Sea Turtles	BOEM, BSEE, NMFS
Time of Year/ Nighttime Restrictions	• No in-situ UXO/MEC detonations are planned between December and April. As part of the federal consistency review for the Project and work in Rhode Island and New York state waters, it is expected that an in-situ UXO/MEC disposal will also be subject to state specific seasonal restrictions.	Marine Mammals, Sea Turtles	BOEM, BSEE, and NMFS

Measure Number / Name	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[1]
	• No UXO will be detonated during nighttime hours.		
Passive acoustic monitoring during UXO detonations	• Acoustic monitoring will be conducted prior to any UXO detonation event in addition to visual monitoring in order to ensure that no marine mammals are present in the designated pre-clearance zones. • Only 1 PAM team for all deployed PSO vessels. • PAM operators will acoustically monitor a zone that encompasses a minimum of a 10 km radius around the source. • PAM will be conducted in daylight as no UXO will be detonated during nighttime hours. • There will be a PAM operator stationed on at least one of the dedicated monitoring vessels (primary or additional) in addition to the PSOs; or located remotely/onshore. • PAM will begin 60 minutes prior to the detonation event. • PAM operator will be on duty during all pre-start clearance periods and post-detonation monitoring periods. • Acoustic monitoring will include and extend beyond the Large Whale Pre-Start Clearance Zone. • For real-time PAM systems, at least one PAM operator will be designated to monitor each system by viewing data or data products that are streamed in real-time or near real-time to a computer workstation and monitor located on a Project vessel or onshore. • The PAM operator will inform the Lead PSO on duty of animal detections approaching or within applicable ranges of interest to the detonation activity via the data collection software system (i.e., Mysticetus or similar system) who will be responsible for requesting the designated crewmember to implement the necessary mitigation procedures. • PAM devices used will include independent (e.g., autonomous or moored remote) systems.	Marine Mammals	BOEM, BSEE, and NMFS
Noise attenuation for UXO/MEC detonations	• Sunrise Wind will use an NAS for all UXO detonation events to reduce sounds propagated into the marine environment as feasible. Sunrise Wind is committed to achieving the modeled ranges associated with 10 dB of broadband noise attenuation of UXO detonation source levels, as is described in Section 6.3.2 of the ITA Application. Zones without 10 dB attenuation would be implemented if use of a big bubble curtain was not feasible due to location, depth, or safety related constraints. If a NAS system is not feasible, Sunrise Wind will implement mitigation measures for the larger unmitigated zone sizes, with deployment of vessels or use of an aerial platform adequate to cover the entire clearance zones	Marine Mammals, Sea Turtles, ESA-listed Fish, EFH, Finfish	BOEM, BSEE, and NMFS

Measure Number / Name	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[1]
Sound Measurements for UXO/MEC detonations	• Acoustic measurements will be made during any UXO/MEC detonations. • Measurements will provide verification of modeled ranges to the modeled harassment threshold isopleths and provide acoustic measurement data collected using International Organization for Standardization (ISO)-standard methodology for comparison among projects and to inform future projects. • A sound field verification plan for UXO/MEC detonation will be submitted to NMFS for review and approval at least 90 days prior to planned start of UXO/MEC detonations.	Marine Mammals, Sea Turtles	BOEM, BSEE, and NMFS
Post-UXO/MEC Detonation Monitoring	• Post-detonation monitoring will occur for 30 minutes.	Marine Mammals, Sea Turtles	BOEM, BSEE, and NMFS
Reporting	• If a stranded, entangled, injured, or dead protected species is observed, the sighting shall be reported within 24 hours to the NMFS RWSAS hotline. • In the event a protected species is injured or killed as a result of Project activities, the vessel captain or PSO on board shall report immediately to NMFS Office of Protected Resources (OPR) who is able to review the circumstances of the incident and determine what, if any, additional measures are appropriate to ensure compliance. Additionally, the vessel captain or PSO on board shall report immediate to NMFS OPR and Greater Atlantic Regional Fisheries Office no later than within 24 hours, and NOAA Fisheries Marine Mammal and Sea Turtle Stranding and Entanglement Hotline or alternative electronic reporting systems as approved by the NOAA stranding program, as well as the U.S. Coast Guard. • Any injured or dead ESA or marine mammal species (reporting requiring immediate response) must be reported to BSEE at protectedspecies@bsee.gov. • Any NARW sighting should be reported as soon as feasible and no later than within 24 hours to the NMFS RWSAS hotline or via the Whale Alert Application.		
Fisheries Monitoring			
General Measures	• Fisheries monitoring was designed in accordance with recommendations set forth in "Guidelines for Providing Information on Fisheries for Application for Renewable Energy Development on the Atlantic Outer Continental Shelf" (BOEM 2019) and consideration to the Responsible Offshore Science Alliance (ROSA) Offshore Wind Project Monitoring Framework and Guidelines.	Marine Mammals	BOEM, BSEE, and NMFS

Measure Number / Name	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[1]
	• All vessels will comply with the vessel speed plan as outlined above for vessel speed restrictions – standard and adaptive plans. • Marine mammal watches and monitoring will occur during daylight hours prior to deployment of gear (e.g., trawls, longline gear) and will continue until gear is brought back on board. • If marine mammals are sighted in the area within 15 minutes prior to deployment of gear and are considered to be at risk of interaction with the research gear, then the sampling station is either moved or canceled or the activity is suspended until there are no sightings of nay marine mammal for 15 minutes within 1 nautical mile (1852 m) of sampling location.		
Trawl Surveys	• Marine mammal monitoring will be conducted by the captain and/or a member of the scientific crew before, during, and after haul back. • Trawl operations will commence as soon as possible once the vessel arrives on station; the target tow time will be limited to 20 minutes. • Sunrise Wind will initiate marine mammal watches (visual observation) within 1 nautical mile (1852 m) of the site 15 minutes prior to sampling. • If a marine mammal is sighted within 1 nautical mile (1852 m) of the planned sampling station in the 15 minutes before gear deployment, Sunrise Wind will delay setting the trawl until marine mammals have not been resighted for 15 minutes or Sunrise Wind may move the vessel away from the marine mammal to a different section of the sampling area. If, after moving on, marine mammals are still visible from the vessel, Sunrise Wind may decide to move again or to skip the sampling station. • Sunrise Wind will maintain visual monitoring effort during the entire period of time that trawl gear is in the water (i.e., throughout gear deployment, fishing, and retrieval). If marine mammals are sighted before the gear is fully removed from the water, (i.e., prior to haul back) the vessel will slow its speed and steer away from the sighted animal in order to minimize potential interactions. Further mitigating actions can be taken following consultation with and guidance from the NMFS Protected Resources Division. • Sunrise Wind will open the cod end of the net close to the deck/sorting area to avoid damage to animals that may be caught in gear. • Gear will be emptied as close to the deck/sorting area and as quickly as possible after retrieval. • Trawl nets will be fully cleaned and repaired (if damaged) before setting again.	Marine Mammals	BOEM, BSEE, and NMFS

Measure Number / Name	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[1]
	• Sunrise Wind does not anticipate and is not requesting take of marine mammals incidental to research trawl surveys but, in the case of a marine mammal interaction, the Marine Mammal Stranding Network will be contacted immediately.		
Acoustic Telemetry Surveys	• No specific mitigation relevant to this type of survey. • Vessel mitigation measures outlined above for all Project vessels will be employed while collecting samples.	Marine Mammals	BOEM, BSEE, and NMFS
eDNA Sampling	• Will coincide with the bottom trawl survey and associated mitigation measures. No specific mitigation relevant to this type of survey. • Vessel mitigation measures outlined above for all Project vessels will be employed while collecting samples.	Marine Mammals	BOEM, BSEE, and NMFS
Rod and reel surveys	• No specific mitigation relevant to this type of survey. • Vessel mitigation measures outlined above for all Project vessels will be employed while collecting samples.	Marine Mammals	BOEM, BSEE, and NMFS
Clam Survey	• No specific mitigation relevant to this type of survey. • Vessel mitigation measures outlined above for all Project vessels will be employed while collecting samples.	Marine Mammals	BOEM, BSEE, and NMFS
Glider – Oceanography	• No specific mitigation relevant to this type of survey. • Vessel mitigation measures outlined above for all Project vessels will be employed while retrieving equipment	Marine Mammals	BOEM, BSEE, and NMFS
Pelagic Fish	• Similar mitigation will be applied as described above for Structured Habitat Surveys. • Vessel mitigation measures outlined above for all Project vessels will be employed while retrieving equipment and collecting samples	Marine Mammals	BOEM, BSEE, and NMFS
Reporting Requirements			
Injured protected species reporting	• Sunrise Wind will ensure that sightings of any injured or dead protected species are reported to the Greater Atlantic (Northeast) Region Marine Mammal and Sea Turtle Stranding and Entanglement Hotline (866-755-NOAA [6622] or current) within 24 hours of sighting, regardless of whether the injury or death is caused by a Project vessel. In addition, if the injury or death was caused by a collision with a Project vessel, Sunrise Wind will ensure that NMFS is notified of the strike within 24-hours. The notification of such strike will include the date and location (latitude/longitude) of the strike, the name of the vessel involved, and the species identification or description of the	Marine Mammals, Sea Turtles	BOEM, BSEE, and NMFS

Measure Number / Name	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[1]
	animal, if possible. If a Project activity is responsible for the injury or death, Sunrise Wind will supply a vessel to assist in any salvage effort as requested by NMFS. • An injured or dead ESA or marine mammal species (reporting requiring immediate response) must be reported to BSEE at protectedspecies@bsee.gov. • If a NARW is involved in any of the above-mentioned incidents, then the vessel captain or PSO onboard should also notify the Right Whale Sighting Advisory System (RWSAS) hotline immediately and no later than within 24 hours.		
Reporting observed impacts on species	• The observer will report any observations concerning impacts on marine mammals to NMFS within 48 hours. Any observed takes of listed marine mammals resulting in injury or mortality must be reported within 24 hours to NMFS. • BOEM and NMFS will be notified within 24 hours if any evidence of an injured or dead sea turtle or ESA-listed fish species during construction activity is observed. • An injured or dead ESA or marine mammal species (reporting requiring immediate response) must be reported to BSEE at protectedspecies@bsee.gov. • Any NARW sightings will be reported as soon as possible, and no later than within 24 hours, to the NMFS RWSAS hotline or via the Whale Alert Application.	Marine Mammals, Sea Turtles, ESA-listed Fish	BOEM, BSEE, and NMFS
Report of activities and observations	• Sunrise Wind will provide NMFS and BSEE at OSWsubmittals@bsee.gov with a report within 90 calendar days following the completion of construction and HRG surveys, including a summary of the activities and an estimate of the number of marine mammals taken during these activities. During construction, weekly reports briefly summarizing sightings, detections, and activities will be provided to NMFS and BOEM on the Wednesday following a Sunday-Saturday period.	Marine Mammals	BOEM, BSEE, and NMFS
Report information	• Data on all protected-species observations will be recorded and based on standards of marine mammal observer collection data by the PSOs. This information will include dates, times, and locations of survey operations; time of observation, location and weather; details of marine mammal sightings (e.g., species, numbers, behavior); and details of any observed taking (e.g., behavioral disturbances or injury). • All vessels will utilize a standardized data entry format. • A QA/QC'd database of all sightings and associated details (e.g., distance from vessel, behavior, species, group size/composition) within and outside of the designated shutdown zones, monitoring effort, environmental conditions, and Project-related activity will be provided after field operations and reporting are complete. This database will undergo thorough quality checks and include all	Marine Mammals	BOEM, BSEE, and NMFS

Measure Number / Name	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[1]
	variables required by the NMFS-issued Incidental Take Authorization (ITA) and BOEM Lease OCS-A 0487 and will be required for the Final Technical Report due to BOEM and NMFS. • During construction, weekly reports briefly summarizing sightings, detections and activities will be provided to NMFS and BOEM on the Wednesday following a Sunday-Saturday period. • Final reports will follow a standardized format for PSO reporting from activities requiring marine mammal mitigation and monitoring. • An annual report summarizing the prior year's activities will be provided to NMFS and to BOEM on April 1 every calendar year summarizing the prior year's activities. • Interim, annual, and final PSO monitoring reports must be submitted to BSEE at OSWsubmittals@bsee.gov.		
BOEM PDCs/BMPs			
BOEM PDCs/BMPs	• Lessees and grantees must evaluate marine mammal use of the proposed project area and must design the project to minimize and mitigate the potential for mortality or disturbance. The amount and extent of ecological baseline data required shall be determined on a project basis.	Marine Mammals, Sea Turtles, ESA-listed Fish	BOEM, BSEE, and NMFS
BOEM PDCs/BMPs	• Vessels related to project planning, construction, and operation shall travel at reduced speeds when assemblages of cetaceans are observed. Vessels also shall maintain a reasonable distance from whales, small cetaceans, and sea turtles, and these shall be determined during site-specific consultations.	Marine Mammals, Sea Turtles, ESA-listed Fish	BOEM, BSEE, and NMFS
BOEM PDCs/BMPs	• Lessees and grantees must minimize potential vessel impacts to marine mammals and turtles by having project-related vessels follow the National Marine Fisheries Service (NMFS) Regional Viewing Guidelines while in transit. Operators must undergo training on applicable vessel guidelines.	Marine Mammals, Sea Turtles, ESA-listed Fish	BOEM, BSEE, and NMFS
BOEM PDCs/BMPs	• Lessees and grantees shall take efforts to minimize disruption and disturbance to marine life from sound emissions, such as pile driving, during construction activities.	Marine Mammals, Sea Turtles, ESA-listed Fish	BOEM, BSEE, and NMFS
BOEM PDCs/BMPs	• Lessees and grantees shall avoid and minimize impacts to marine species and habitats in the project area by posting a qualified observer on site during construction activities. These observers are approved by NMFS.	Marine Mammals, Sea Turtles, ESA-listed Fish	BOEM, BSEE, and NMFS

Measure Number / Name	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[1]
BOEM PDCs/BMPs	• The applicant shall develop an anchoring plan to ensure anchoring is avoided and minimized in complex habitats during construction and O&M of the project. This plan should delineate areas of complex habitat around each turbine and cable locations, and identify areas restricted from anchoring. The habitat maps and inshore maps delineating complex habitat adjacent to the O&M facility should be provided to all cable construction and support vessels to ensure no anchoring of vessels is done within or immediately adjacent to these complex habitats. The anchoring plan should be provided to USFWS prior to BOEM approval.	Benthic habitat, EFH, invertebrates, and finfish	BOEM and USFWS

Table H - 2 Potential Mitigation and Monitoring Measures Analyzed

No.	Proposed Project Phase	Mitigation & Monitoring Measures	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[3]
BOEM OCS Study 2020-039 – Radar Systems Mitigations to Operations					

1	O&M	Mitigation for ARSR-4 and ASR-8/9 radars	Operational mitigations identified for impacts on ARSR-4 and for ASR-8/9:
			• Passive aircraft tracking using ADS-B or signal/transponder
			• Increasing aircraft altitude near radar
			• Sensitivity time control (range-dependent attenuation)
			• Range azimuth gating (ability to isolate/ignore signals from specific range-angle gates)
			• Track initiation inhibit, velocity editing, plot amplitude thresholding (limiting the amplitude of certain signals)
			• Modification mitigations for ARSR-4 and for ASR-8/9 systems:
			  ○ Utilizing the dual beams of the radar simultaneously
			  ○ In-fill radars
				Other Uses – Radar	BOEM and BSEE

2	O&M	Mitigation for oceanographic high frequency radars	To mitigate operational impacts on oceanographic high-frequency radars, the following options have been identified:
			• Data sharing from turbine operators to include the following:
			  ○ Sharing real-time telemetry of surface currents and other oceanographic data measured at locations in the Project with radar operators into the public domain
			  ○ Sharing time-series of blade rotation rates, nacelle bearing angles, and other information about the operational state of each of the Project's turbines with radar operators to aid interference mitigation
			• Wind farm curtailment/curtailment agreement
			Additional modifications identified for oceanographic high-frequency radar systems to mitigate impacts:
			• Signal processing enhancements
			• Antenna modifications
				Other Uses – Radar	BOEM and BSEE

[3] BOEM and BSEE are in the process of transferring enforcement authorities from BOEM to BSEE.

No.	Proposed Project Phase	Mitigation & Monitoring Measures	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[3]
3	O&M	Mitigation for NEXRAD weather radar systems	Operational mitigations to NEXRAD weather radar systems include: • Wind farm curtailment/curtailment agreement Research is being conducted to determine whether impacts on weather radar can be mitigated by using phased array radars to achieve a null in the antenna radiation pattern in the direction of the wind turbine.	Other Uses – Radar	BOEM and BSEE
BOEM-proposed Bird and Bat Mitigation Measures					
1	O&M	Adaptive mitigation for birds and bats	Sunrise Wind developed a Post-construction Avian and Bat Monitoring Framework that summarizes the approach to monitoring; describes overarching monitoring goals and objectives; identifies the key bat species, prioritizes questions, and data gaps unique to the region and Project Area that will be address through monitoring; and describes methods and time frames for data collection, analysis, and reporting. Sunrise Wind will engage with federal and state agencies and eNGOs to identify appropriate monitoring options and technologies, and to facilitate acceptance of the final plan. If the reported post-construction bird and bat monitoring results indicate bird and bat impacts deviate substantially from the impact analysis included in this EIS, then Sunrise Wind must make recommendations for new mitigation measures or monitoring methods.	Birds and Bats	BOEM, BSEE, and USFWS
2	O&M	Bird deterrents	Install bird deterrent devices to minimize bird attraction to operating turbines and on the OSS, where appropriate and where Sunrise Wind determines such devices can be safely deployed.	Birds	USFWS
DOD-proposed Measures					
1	O&M	Fiber-optic sensing technology	Distributed fiber-optic sensing (DOFS) technology proposed for the wind energy project or associated transmission cables would be reviewed by the DOD to ensure that DOFS is not used to detect sensitive data from DOD activities, conduct any other type of surveillance of U.S. Government operations, or to otherwise pose a threat to national security.	Other Uses	BOEM, BSEE, and DOD
NHPA Section 106 Mitigation Measures					
1	C	Avoid or mitigate impacts on	Sunrise Wind must avoid any identified archaeological resource or TCP, including avoidance of 50-meter buffers for identified archaeological resources. If Sunrise Wind cannot avoid the resource, it must perform additional investigations for the purpose of	Cultural Resources	BOEM, BSEE, NYSDEC, NYSHPO

No.	Proposed Project Phase	Mitigation & Monitoring Measures	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[3]
		identified archaeological resources	determining eligibility for listing in the NRHP. Of those resources determined eligible, BOEM would require Phase III data recovery investigations for the purposes of resolving adverse effects per 36 CFR 800.6. If Sunrise Wind determines it cannot avoid an archaeological resource or TCP after the ROD has been issued, additional Section 106 consultation will be required.		
2	C	Archaeological monitoring and unanticipated discovery plans	Implementation of archaeological monitoring and unanticipated discoveries plans for terrestrial and submerged archaeology, which include training and orientation for construction staff, designation of a Cultural Resources Compliance Manager, and unanticipated discovery procedures and contacts, to reduce potential impacts on any previously undiscovered archaeological resources (if present) encountered during construction.	Cultural Resources	BOEM, BSEE, NYSDEC, NYSHPO
3	Prior to C	Historic Properties Treatment Plans	BOEM, with the assistance of Sunrise Wind, will develop and implement one or multiple Historic Property Treatment Plans in consultation with consulting parties who have demonstrated interest in specific historic properties and property owners to address impacts on archaeological resources and ancient submerged landforms if they cannot be avoided. Historic Properties Treatment Plans will also provide details and specification for actions consisting of mitigation measures to resolve adverse visual effects and cumulative adverse visual effects on Eight Historic Lighthouses in RI and MA, The Scrubby Neck Schoolhouse, Town of West Tisbury, Dukes County, MA, Ancient Submerged Landform WEA_P-22, Outer Continental Shelf, The Gay Head Light, Town of Aquinnah, Dukes County, MA, The Block Island Southeast Lighthouse, NHL, Town of New Shoreham, Washington County, RI, The Chappaquiddick Island TCP and the Vineyard Sounds & Moshup'd Bridge TCP, Dukes County, MA and the Outer Continental Shelf, Seven Historic Properties, Town of Chilmark, Dukes County, MA, Twenty-Eight Historic Properties, Town of New Shoreham, Washington County, RI, Ten Historic Properties, Town of Aquinnah, Dukes County, MA	Cultural Resources	BOEM, BSEE, NYSDEC, NYSHPO
4	Prior to C	Funding compensatory mitigation to resolve adverse effects	Funding from Sunrise Wind could be applied to compensatory mitigation actions such as prepare a public interpretive/educational video to communicate the risks and hazards posed by climate change to historic lighthouses.	Cultural Resources	BOEM, BSEE, NYSDEC, NYSHPO

No.	Proposed Project Phase	Mitigation & Monitoring Measures	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[3]
		on Eight Historic Lighthouses in RI and MA			
5	Prior to C	Funding compensatory mitigation to resolve adverse effects of Scrubby Neck Schoolhouse	Funding from Sunrise Wind could be applied to compensatory mitigation actions such as funding to the Town of West Tisbury for preparation of SR/NR nomination.	Cultural Resources	BOEM, BSEE, NYSDEC, NYSHPO
6	Prior to C	Funding compensatory mitigation to resolve adverse effects of Ancient Submerged Landform WEA_P-22,	Funding from Sunrise Wind could be applied to compensatory mitigation actions such as	Cultural Resources	BOEM, BSEE, NYSDEC, NYSHPO
7	Prior to C	Funding compensatory mitigation to resolve adverse effects on The Gay Head Light	Funding from Sunrise Wind could be applied to compensatory mitigation actions such as Funding for on-going physical restoration projects.	Cultural Resources	BOEM, BSEE, NYSDEC, NYSHPO
8	Prior to C	Funding compensatory mitigation to	Funding from Sunrise Wind could be applied to compensatory mitigation actions such as fund preparation of an augmented reality/virtual reality experience showing changes to property over time. Fund the capital restoration projects that enhance long-term	Cultural Resources	BOEM, BSEE, NYSDEC, NYSHPO

No.	Proposed Project Phase	Mitigation & Monitoring Measures	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[3]
		resolve adverse effects on Block Island Southeast Lighthouse	preservation of the property, and fund the implementation of hazard mitigation projects identified through recent planning efforts.		
9	Prior to C	Funding compensatory mitigation to resolved adverse effects on the Cappaquiddick Island TCP and the Vineyard Sounds & Moshup's Bridge TCP, MA and Outer Continental Shelf	Funding from Sunrise Wind could be applied to compensatory mitigation actions such as Coastal Hazard and Climate Change mitigation planning to address ricks to culturally significant elements of the TCP and their associated traditional practices, including habitat restoration.	Cultural Resources	BOEM, BSEE, NYSDEC, NYSHPO
10	Prior to C	Funding compensatory mitigation to resolve adverse effects on Vineyard Sounds and Moshup's Bridge TCP, MA and Outer	Funding from Sunrise Wind could be applied to compensatory mitigation actions such as funding for scholarships to Mashpee/Aquinnah Tribal members enrolling in accredited colleges or professional training programs for marine sciences, marine construction, geophysics, geology, history, anthropology, environmental sciences, or indigenous studies. Funding from Sunrise Wind could be applied to compensatory mitigation actions such as funding for an oral history project to document the WTGH/A and Mashpee traditions associated with culturally significant finfish, shellfish, marine mammals, and plants at risk due to climate change.	Cultural Resources	BOEM, BSEE, NYSDEC, NYSHPO

No.	Proposed Project Phase	Mitigation & Monitoring Measures	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[3]
		Continental Shelf			
11	Prior to C	Funding compensatory mitigation to resolve adverse effects on Seven Historic Properties, Town of Chilmark, MA	Funding from Sunrise Wind could be applied to compensatory mitigation actions such as funding to the Sheriff's Meadow Foundation for physical restoration work at the Captain Samuel – Captain Mitchell West House or landscape restoration at the associate Quansoo Farm.	Cultural Resources	BOEM, BSEE, NYSDEC, NYSHPO
12	Prior to C	Funding compensatory mitigation to resolve adverse effects on Twenty-Eight Historic Properties, Town of New Shoreham, RI	Funding from Sunrise Wind could be applied to compensatory mitigation actions such as investigations to identify engineering solutions for specific at-risk properties, including historic roadways, breakwaters, stone walls or cultural features that contribute to the historic setting of individual properties and districts. Funding from Sunrise Wind could be applied to compensatory mitigation actions such as implementation of resilience projects to mitigate coast hazards to specific historic properties or significant cultural features contributing to the historic maritime setting of districts or buildings. Funding from Sunrise Wind could be applied to compensatory mitigation actions such as feasibility studies to assess relocation of at-risk historic buildings to BI Trust or Town Lands and public interpretation.	Cultural Resources	BOEM, BSEE, NYSDEC, NYSHPO
13	Prior to C	Funding compensatory mitigation to resolve adverse effects on Ten Historic Properties, Town of Aquinnah, MA	Funding from Sunrise Wind could be applied to compensatory mitigation actions such as oral history project to document the association of the historic property with the WTGH/A and significance of the Shops in sharing Tribal Traditions with visitors to Aquinnah. Funding from Sunrise Wind could be applied to compensatory mitigation actions such as investigations to identify engineering solutions for specific at-risk properties, including historic roadways, breakwaters, stone walls or other cultural features that contribute the historic setting of individual properties and districts. Funding from Sunrise Wind could be applied to compensatory mitigation actions such as town wide historic resources survey to update 1984 inventory and incorporate additional	Cultural Resources	BOEM, BSEE, NYSDEC, NYSHPO

No.	Proposed Project Phase	Mitigation & Monitoring Measures	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[3]
			information relating got the historic maritime contexts for properties located along shorelines and inland waters.		
BOEM-proposed Mitigation and Monitoring Measures in the NMFS BA					
1	C, O&M, D	Marine debris awareness training	The Lessee must 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 shall 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 will 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 • Recordkeeping and the availability of records for inspection by DOI. By January 31 of each year, the Lessee must submit to DOI an annual report that describes its marine trash and debris awareness training process, number of people trained, estimated related costs, and certifies that the training process has been followed for the previous calendar year. The Lessee would send the reports via email to BOEM (at renewable_reporting@boem.gov) and to BSEE (at marinedebris@bsee.gov).	ESA-listed Fish, Marine Mammals, Sea Turtles	BOEM and BSEE
2	C and post-C	Incorporate LOA requirements	The measures required by the final MMPA LOA would be incorporated into COP approval, and BOEM and/or BSEE will monitor compliance with these measures.	Marine Mammals	BOEM and BSEE

No.	Proposed Project Phase	Mitigation & Monitoring Measures	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[3]
3	C, post-C monitoring	PAM Plan	BOEM, BSEE, and USACE shall ensure that Sunrise Wind prepares a PAM Plan that describes all proposed equipment, deployment locations, detection review methodology and other procedures, and protocols related to the required use of PAM for monitoring. This plan must be submitted to NMFS, BOEM and BSEE (at OSWsubmittals@bsee.gov) for review and concurrence at least 90 days prior to the planned start of pile driving.	ESA-listed Fish, Marine Mammals, Sea Turtles	BOEM, BSEE, and NMFS
4	C	Pile driving monitoring plan	BOEM shall ensure that Sunrise Wind prepare and submit a *Pile Driving Monitoring Plan* to NMFS and BSEE (at OSWsubmittals@bsee.gov) for review and concurrence at least 90 days before start of pile driving. The plan shall detail all plans and procedures for sound attenuation as well as for monitoring ESA-listed whales and sea turtles during all impact and vibratory pile driving. The plan shall also describe how BOEM, BSEE, and Sunrise Wind would determine the number of whales exposed to noise above the Level B harassment threshold during pile driving with the vibratory hammer to install the cofferdam at the sea to shore transition. Sunrise Wind must obtain NMFS' concurrence with this plan prior to starting any pile driving.	Marine Mammals, Sea Turtles	BOEM, BSEE, and NMFS
5	C	PSO Coverage	BOEM, BSEE, and USACE shall ensure that PSO coverage is sufficient to reliably detect marine mammals and sea turtles at the surface in clearance and shutdown zones to execute any pile driving delays or shutdown requirements. 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 would be deployed. Determinations prior to construction would be based on review of the *Pile Driving Monitoring Plan*. Determinations during construction would be based on review of the weekly pile driving reports and other information, as appropriate.	Marine Mammals, Sea Turtles	BOEM, BSEE, and USACE
6	C	Sound field verification	BOEM, BSEE, and USACE shall ensure that if the clearance and/or shutdown zones are expanded, PSO coverage is sufficient to reliably monitor the expanded clearance and/or shutdown zones. Additional observers shall be deployed on additional platforms for every 1,500 m that a clearance or shutdown zone is expanded beyond the distances modeled prior to verification.	ESA-listed Fish, Marine Mammals, Sea Turtles	BOEM, BSEE, and USACE
7	C	Shutdown zones	BOEM, BSEE, and USACE may consider reductions in the pre-start clearance and/or shutdown zones based on the sound field verification measurements. BOEM and BSEE	Marine Mammals, Sea Turtles	BOEM, BSEE, and USACE

No.	Proposed Project Phase	Mitigation & Monitoring Measures	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[3]
			shall ensure that Sunrise Wind submits a Sound Field Verification Plan for review and approval at least 90 days prior to the planned start of pile driving.		
8	C	Monitoring zone for sea turtles	BOEM, BSEE, and USACE shall ensure that Sunrise Wind monitors the full extent of the area where noise would exceed the 175 dB rms threshold for sea 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.	Sea Turtles	BOEM, BSEE, and USACE
9	C, O&M, D	Look out for sea turtles and reporting	Between June 1 and November 30, Sunrise Wind shall 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 in (e) below can be implemented. a. The trained lookout would monitor https://seaturtlesightings.org/ 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. b. The trained lookout would maintain a vigilant watch and monitor a Vessel Strike Avoidance Zone (500 m) 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. c. If a sea turtle is sighted within 100 m 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 m at which time the vessel may resume normal operations. If a sea turtle is sighted within 50 m 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.	Sea Turtles	BOEM, BSEE, and USACE

No.	Proposed Project Phase	Mitigation & Monitoring Measures	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[3]
			d. 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. e. 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. f. 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 must be reported to NMFS and BSEE within 24 hours. g. If a vessel is carrying a PSO or trained lookout for the purposes of maintaining watch for North Atlantic right whales, an additional lookout is not required and this PSO or trained lookout must maintain watch for whales and sea turtles.		
10	C, post-C monitoring	Sampling gear	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.	ESA-listed Fish, Marine Mammals, Sea Turtles	BOEM and BSEE
11	C, post-C monitoring	Gear identification	To facilitate identification of gear on any entangled animals, all trap/pot gear used in the surveys would be uniquely marked to distinguish it from other commercial or recreational gear. Using yellow and black striped duct tape, place a 3-foot-long mark within 2 fathoms of a buoy. In addition, using black and white paint or duct tape, place 3 additional marks on the top, middle and bottom of the line. These gear marking colors are proposed as they are not gear markings used in other fisheries and are therefore distinct. Any changes in marking would not be made without notification and approval from NMFS.	ESA-listed Fish, Marine Mammals, Sea Turtles	BOEM, BSEE, and NMFS

No.	Proposed Project Phase	Mitigation & Monitoring Measures	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[3]
12	C, post-C monitoring	Lost survey gear	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 (OSWIncidentReporting@bsee.gov) 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.	ESA-listed Fish, Marine Mammals, Sea Turtles	BOEM, BSEE, and NMFS
13	C, post-C monitoring	Training	At least one of the survey staff onboard the trawl surveys and ventless trap surveys would have completed NEFOP observer training (within the last 5 years) or other training in protected species identification and safe handling (inclusive of taking genetic samples from Atlantic sturgeon). Reference materials for identification, disentanglement, safe handling, and genetic sampling procedures would be available on board each survey vessel. BOEM and BSEE would ensure that Sunrise Wind prepares a training plan that addresses how this requirement would be met and that the plan is submitted to NMFS in advance of any trawl or trap surveys. This requirement is in place for any trips where gear is set or hauled.	ESA-listed Fish	BOEM, BSEE, and NMFS
14	C, post-C monitoring	Sea turtle disentanglement	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 STDN Disentanglement Guidelines at https://www.reginfo.gov/public/do/DownloadDocument?objectID=102486501 and the procedures described in "Careful Release Protocols for Sea Turtle Release with Minimal Injury" (NOAA Technical Memorandum 580; https://repository.library.noaa.gov/view/noaa/3773).	Sea Turtles	BOEM, BSEE, and NMFS
15	C, post-C monitoring	Sea turtle/ Atlantic sturgeon identification and data collection	Any sea turtles or Atlantic sturgeon 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.	ESA-listed Fish, Sea Turtles	BOEM, BSEE, and NMFS

No.	Proposed Project Phase	Mitigation & Monitoring Measures	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[3]
			a. The Sturgeon and Sea Turtle Take Standard Operating Procedures would be followed (https://media.fisheries.noaa.gov/dammigration/sturgeon_&_sea_turtle_take_sops_external.pdf). b. 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). c. Genetic samples would be taken from all captured Atlantic sturgeon (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 https://media.fisheries.noaa.gov/dammigration/sturgeon_genetics_sampling_revised_june_2019.pdf). i. 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. ii. 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: https://www.fisheries.noaa.gov/new-england-midatlantic/consultations/section-7-take-reporting-programmaticsgreater-atlantic). d. All captured sea turtles and Atlantic sturgeon 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		

No.	Proposed Project Phase	Mitigation & Monitoring Measures	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[3]
			each incidental take. A NMFS Take Report Form would be filled out for each individual sturgeon and sea turtle (download at: https://media.fisheries.noaa.gov/2021-41507/Take%20Report%20Form%2007162021.pdf?null) and submitted to NMFS as described below.		
16	C, post-C monitoring	Sea turtle/ Atlantic sturgeon handling and resuscitation guidelines	Any sea turtles or Atlantic sturgeon 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: a. Priority would be given to the handling and resuscitation of any sea turtles or sturgeon 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. b. 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: https://media.fisheries.noaa.gov/dammigration/sea_turtle_handling_and_resuscitation_measures.pdf). 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. c. 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. d. Attempts would be made to resuscitate any Atlantic sturgeon that are unresponsive or comatose by providing a running source of water over the gills as described in the	ESA-listed Fish, Sea Turtles	BOEM, BSEE, and NMFS

No.	Proposed Project Phase	Mitigation & Monitoring Measures	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[3]
			Sturgeon Resuscitation Guidelines (https://media.fisheries.noaa.gov/dammigration-miss/Resuscitation-Cards-120513.pdf). e. 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 Atlantic sturgeon would be retained on board the survey vessel for transfer to an appropriately permitted partner or facility on shore as safe to do so. f. Any live sea turtles or Atlantic sturgeon 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.		
17	C, post-C monitoring	Take notification	GARFO PRD would be notified as soon as possible of all observed takes of sea turtles, and Atlantic sturgeon occurring as a result of any fisheries survey. Specifically: a. GARFO PRD would be notified within 24 hours of any interaction with a sea turtle or sturgeon (nmfs.gar.incidental-take@noaa.gov and BSEE at protectedspecies@bsee.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 e-mail would transmit a copy of the NMFS Take Report Form (download at: https://media.fisheries.noaa.gov/2021-07/Take%20Report%20Form%2007162021.pdf?null) 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. b. At the end of each survey season, a report 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	ESA-listed Fish, Sea Turtles	BOEM, BSEE, and NMFS

No.	Proposed Project Phase	Mitigation & Monitoring Measures	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[3]
			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.		
18	C, O&M, D	Monthly/ annual reporting requirements	BOEM and BSEE would ensure that Sunrise Wind submits regular reports (in consultation with NMFS) necessary to document the amount or extent of take that occurs during all phases of the proposed action. Details of reporting would be coordinated between Sunrise Wind, NMFS, BOEM and BSEE. All reports would be sent to: nmfs.gar.incidental-take@noaa.gov and BSEE at OSWsubmittals@bsee.gov.	ESA-listed Fish, Marine Mammals, Sea Turtles	BOEM, BSEE, and NMFS
19	C	Nighttime pile driving monitoring plan	BOEM would require Sunrise Wind to submit a nighttime pile driving monitoring plan for NMFS and BOEM review and approval six months prior to initiating impact pile driving activities. The purpose of the plan is to demonstrate that Sunrise Wind can meet the visual monitoring criteria for the Level A harassment zone(s)/mitigation and monitoring zones plus an agreed upon buffer zone (these combined zones are referred to henceforth as the nighttime clearance and shutdown zones) with the technologies Sunrise Wind is proposing to use for monitoring during nighttime impact pile driving. The buffer zone distance and visual monitoring criteria will be developed by NMFS and BOEM and detailed in the Final EIS. Poor/low visibility conditions (instances where clearance and shutdown zones cannot be effectively monitored) applicable to daytime pile driving would also apply to nighttime pile driving. If during nighttime pile driving, undetected animals are found in the clearance and/or shutdown zones, nighttime impact pile driving activities would cease as soon as possible in consideration of human safety, and NMFS, BOEM and BSEE would be notified immediately. Since no Level A Harassment Takes are anticipated (with the exception of coastal bottlenose dolphins, gray seals, and harbor seals), nighttime impact pile driving would not restart until approval is provided by NMFS, BOEM and BSEE. The nighttime pile driving monitoring plan would include the following components: identification of night vision devices (e.g., mounted thermal/IR camera systems, hand-held or wearable NVDs, IR spotlights) that would be used to detect protected marine mammal and turtle species relative to the nighttime clearance and shutdown zones; discussion of the efficacy (range and accuracy) of each device proposed for nighttime	Marine Mammals, Sea Turtles	BOEM, BSEE, and NMFS

No.	Proposed Project Phase	Mitigation & Monitoring Measures	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[3]
			monitoring, including an assessment of the results of the Thayer Mahan Field Trial, and only devices that meet the visual monitoring criteria as demonstrated by Thayer Mahan Field Trial to be capable of detecting marine mammals and sea turtles to the maximum extent of the nighttime clearance and shutdown zones would be acceptable for nighttime monitoring (use of devices not assessed in the Thayer Mahan Field Trial would not be permitted); procedures and timeframes for notifying NMFS, BOEM and BSEE of Sunrise Wind's intent to pursue nighttime impact pile driving; and, reporting procedures, contacts, and timeframes. The nighttime pile driving monitoring plan would be reviewed and approved by both NMFS and BOEM. Factors for approval will be developed by NMFS and BOEM and provided in the Final EIS. If the nighttime pile driving monitoring plan is not approved, impact pile driving may commence only during daylight hours and no earlier than one hour after civil sunrise. Impact pile driving may not be initiated any later than 1.5 hours before civil sunset and may continue after dark only when the installation of that pile began during daylight hours and must proceed for human safety or installation feasibility reasons. If the monitoring plan is approved, in addition to impact pile driving commencing during daylight hours, new piles may be initiated outside of the previously defined daylight hours (one hour after civil sunrise to 1.5 hours before civil sunset) to meet schedule requirements.		
BOEM-proposed Measures from the Data Collection and Site Survey Activities for Renewable Energy on the Atlantic OCS BA					
1	C, O&M, D	Data Collection BA BMPs	BOEM and BSEE would ensure that all Project Design Criteria and Best Management Practices incorporated in the Atlantic Data Collection consultation for Offshore Wind Activities (June 2021) shall be applied to activities associated with the construction, maintenance and operations of the Sunrise Wind project as applicable.	ESA-listed Fish, Marine Mammals, Sea Turtles	BOEM and BSEE
NMFS-proposed Measures to Minimize Impacts on Benthic Habitat					
			To be determined during consultation and will be updated prior to FEIS		

No.	Proposed Project Phase	Mitigation & Monitoring Measures	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[3]
Other Agency-proposed Mitigation Measures					
1	C, O&M	Compensation for gear loss and damage	The lessee shall implement a gear loss and damage compensation program consistent with BOEM's draft guidance for Mitigating Impacts to Commercial and Recreational Fisheries on the Outer Continental Shelf Pursuant to 30 CFR 585 or as modified in response to public comment.	Commercial and Recreational Fisheries	BOEM and BSEE
2	C, O&M	Compensation for lost fishing income	The lessee shall 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.	Commercial and Recreational Fisheries	BOEM and BSEE
3	O&M	Mobile gear friendly cable protection measures	Cable protection measures should reflect the pre-existing conditions at the site. This mitigation measure chiefly ensures that seafloor cable protection does not introduce new hangs for mobile fishing gear. Thus, the cable protection measures should be trawl-friendly with tapered/sloped edges. If cable protection is necessary in "non-trawlable" habitat, such as rocky habitat, then the lessee should consider using materials that mirror the benthic environment.	Commercial and Recreational Fisheries	BOEM, BSEE, DOI
4	C, O&M	Vessel speed restriction	All vessels, regardless of size, would comply with a 10-knot speed restriction in any SMA, DMA, or Slow Zone.	Marine Mammals, Sea Turtles	BOEM and BSEE
5	C	Safety zone during cable installation	BOEM and BSEE would ensure that Sunrise Wind coordinates with the U.S. Coast Guard in advance of export cable installation to develop a navigation safety plan, which may include: establishing a safety zone around the cable laying vessel(s); monitoring plan; mitigation plan; schedule; private aids to navigation; and, local notice to mariners.	Navigation and Vessel Traffic	BOEM and BSEE
6	O&M	Cable maintenance plan	BOEM and BSEE would ensure that Sunrise Wind develops a cable maintenance and monitoring plan that outlines a process for identifying when cable burial depths reach unacceptable risks, requires prompt remediation of exposed and shallow-buried cable segments, and includes review to address repeat exposures.	Navigation and Vessel Traffic	BOEM and BSEE
7	Pre-C, C, O&M, D	Coordination with federally	No later than 90 calendar days after COP approval, the Lessee would contact the federally recognized tribal nations in government-to-government consultations with BOEM for the Project in order to solicit their interest in participating as active monitors		BOEM and BSEE

No.	Proposed Project Phase	Mitigation & Monitoring Measures	Description	Resource Area Mitigated	BOEM's Identification of the Anticipated Enforcing Agency[3]
		recognized tribal nations	on board vessels during construction and/or maintenance activities, participate in postmortem examinations of mortality events as a result of these activities, or have open access to the following: reports generated as a result of the Fisheries Monitoring Plan; reports of NARW sightings; injured or dead protected species reporting (sea turtles and NARW); NARW PAM monitoring; PSO reports (e.g., pile-driving reports); pile driving schedules and changes to them. At a minimum, the Lessee must offer access to the following federally recognized tribal nations: Delaware Nation; Delaware Tribe of Indians; Stockbridge-Munsee Community Band of Mohican Indians; and Wampanoag Tribe of Gay Head (Aquinnah). The Lessee must provide, in a manner suitable to the tribal nations, access to non-proprietary, non-confidential business information to any federally recognized tribal nation no later than 30 days after the information becomes available.		
8	Pre-C, C	Safety Plan, Communications Plan, and Noise Mitigation Measures	BOEM and BSEE will ensure that Sunrise Wind coordinates with the National Park Service and Fire Island National Seashore in advance of construction activities for the development of the Project's Safety Plan, Communications Plan, and Noise Mitigation Measures for construction activities that could adversely impact NPS areas and noise sensitive areas adjacent to construction activities such as the Otis Pike Fire Island High Dune Wilderness. These plans will consider measures and BMPs included in: US Department of the Interior Director's Order #47: Soundscape Preservation and Noise Management, effective December 1, 2000; NPS Soundscape Management Policy 4.9, effective 2006; and The 1964 Wilderness Act, that states that federal agencies like the NPS are responsible for preserving the wilderness character of wilderness areas, including Opportunities for Solitude or Primitive and Unconfined Recreation.	Noise, Recreation and Tourism	NPS

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