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Section 8.2 - PUBLIC

Environmental Mitigation Plan

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List of Attachments

List of Acronyms

BOEM	Bureau of Ocean Energy Management
COP	Construction and Operations Plan
E-TWG	New York State Environmental Technical Working Group
EFH	Essential Fish Habitat
ESA	*Endangered Species Act*
F-TWG	New York State Fisheries Technical Working Group
GARFO	Greater Atlantic Regional Fisheries Office
MMPA	*Marine Mammal Protection Act*
NOAA	National Oceanic and Atmospheric Administration
NYSDEC	New York State Department of Environmental Conservation
NYSERDA	New York State Energy Research and Development Authority
OCS	Outer Continental Shelf
ROSA	Responsible Offshore Science Alliance
RWSC	Regional Wildlife Science Collaborative
USFWS	United States Fish and Wildlife Service

8.2 ENVIRONMENTAL MITIGATION PLAN

6.2.8.2 Proposers must include in their Proposals a detailed Environmental Mitigation Plan that describes how Proposer will mitigate adverse environmental impacts that may be caused by the Project. …
The EMP should detail, to the extent practical, specific measures the Proposer will take to avoid, minimize, and/or mitigate potential environmental impacts of the proposed Project in the categories identified below. Where specific measures are not known for a specific category of impact at the time of proposing, the EMP must describe how the Proposer will work collaboratively with the State, federal agencies, and other stakeholders to define avoidance, minimization, and mitigation measures. The EMP should provide a roadmap for the environmental work to come and provide a degree of certainty that the Proposer is committed to working collaboratively with stakeholders to develop a cost-effective and environmentally responsible Project

8.2.1 Environmental Mitigation Plan Summary

D.1 The Proposer must briefly present its philosophy and approach to avoiding, minimizing, restoring and offsetting the potential environmental impacts of the proposed Project and how the Proposer will use research, data and stakeholder feedback to support decision making with respect to site design, construction, operations and decommissioning.

Sunrise Wind and its parent companies are committed to sustainability and aim to do their utmost to protect natural ecosystems. [redacted] Ørsted will do its part to address both the climate and biodiversity crises as it advances clean energy development. To achieve this objective, Ørsted will be working with local and regional stakeholders to identify potential restoration and protection opportunities that lead to biodiversity improvements for species and habitats expected to be impacted by Ørsted's Portfolio.

The Proposer has prioritized avoiding or minimizing environmental impacts through siting, design, and real-time mitigation consistent with the Proposer's environmental stewardship approach. The Environmental Mitigation Plan, provided as Attachment 8.2-1,[1] provides additional detail on mitigation measures in effect for the Project. The Environmental Mitigation Plan was developed with input and collaboration from the New York State Energy Research and Development Authority (NYSERDA) and the New York State Environmental Technical Working Group (E-TWG). [redacted] n addition, New York State agencies have reviewed and approved the Project's Environmental Management and Construction Plan, which details environmental mitigation measures during construction in New York waters and onshore.

The Proposer has worked to minimize environmental impacts through siting of the Project components in less sensitive areas. Where environmental impacts could not be avoided, the Proposer focused on minimizing and mitigating such impacts. Mitigating impacts include efforts to restore the impacted resource and, to the extent applicable, offset the environmental impact. Early identification of potential

[redacted]

impacts was critical to increase the ability to avoid, minimize, or mitigate the impact. The Proposer worked proactively to identify impacts with stakeholders and other offshore wind projects and will continue these efforts by continuing to work with stakeholders, including federal and state agencies, Native American tribes, environmental Non-Government Organizations, and state groups such as the E-TWG. Additionally, the Proposer will support collaborative science to further understand the potential impacts of offshore wind and incorporate the results into development, design, construction, and operation of the Project in an environmentally responsible manner.

8.2.2 Communications and Collaboration

D.2 The New York State Offshore Wind Master Plan, the New York State Public Service Commission Order Establishing Offshore Wind Standard Framework for Phase 1 Procurement issued on July 12, 2018, the Order Adopting Modifications to the Clean Energy Standard issued on October 15, 2020 pursuant to Case no. 15-E-0302, and the Order on Power Grid Study Recommendations issued on January 20, 2022 pursuant to Case No. 20-E-0197, and this RFP emphasize the value of stakeholder engagement in the development of offshore wind energy Projects. Further, the Orders require Proposers to work with the State-supported Environmental Technical Working Group ("E-TWG"). Many other stakeholders are engaged in offshore wind energy development. The Proposer must describe how it will identify additional stakeholders relevant to both onshore and offshore environmental issues and describe how the Proposer intends to communicate with those stakeholders during survey work, and design, construction, operation and decommissioning of the Project. This description must account for communications with members of the E-TWG and consultations with New York State agencies during the various Project phases.

The Proposer's stakeholder engagement has included outreach to and meetings with federal and state agencies and non-regulatory stakeholders, including fishing communities, environmental groups, and local communities. See Section 2.4 of the Environmental Mitigation Plan for a more detailed summary of the Proposer's comprehensive approach to communications and collaboration and see *COP Appendix A – Agency Correspondence* for a summary of outreach with federal, state, and local agencies.

To help identify stakeholders, the Proposer completed a detailed stakeholder mapping process to consider information applicable to the Project and will continue to identify stakeholders during the project development process. The Stakeholder Engagement Plan, provided as Attachment 8.3-1 to the Proposal, addresses engagement with regulatory stakeholders.

Section 2.4 of the Environmental Mitigation Plan also includes specific provisions to coordinate with members of the E-TWG and consult with New York State agencies.

The Proposer has also developed a Public Involvement Plan, specifically for outreach to communities on Long Island where the onshore portions of the Project will be located. The Proposer has proactively reached out to local communities on Long Island through informational meetings, press releases, website promotion, and social media, and has built and will continue to build on these established relationships during the project construction process.

8.2.3 Environmental Monitoring and Research Pre-, During- and Post-Construction

D.3 Environmental research and peer-reviewed publication of research findings is key to advancing the scientific knowledge of how offshore wind energy development might affect marine ecosystems and wildlife. Proposers are encouraged to publish their own work in scientific journals or other scientifically vigorous products and to coordinate with scientists and regulators interested in investigating environmental and wind energy-related scientific questions.

Because offshore wind energy development is in early stages in the US, there is little empirical information as to the effects such development may have on ecological communities specific to the New York Bight. Transparency in new research and peer reviewed publication of results bring higher value, allowing others to build on that work. Thoughtfully planned, designed, and implemented pre-, during- and post-construction monitoring and research to understand wildlife responses and potential effects from development is key for adaptive management. Further, multiple regional sites working together and coordinating monitoring and research in a consistent manner would bring additional value to the scientific understanding of how development of offshore wind energy is affecting regional resources.

The Proposer must (to the extent possible at this stage) describe how, for large whales (particularly the North Atlantic right whale), other marine mammals, sea turtles, birds, bats, fish, sturgeon, and invertebrates, it plans to conduct scientifically sound, statistically rigorous studies to accomplish the following:

1. Establish baseline data on the presence of these types of wildlife within the area of the proposed Project (including areas where Project-related vessels would travel to reach the Project area);

8.2.3.1 Baseline Data

The Proposer is committed to collaborative studies pre-, during, and post-construction. Sections 4.1, 5.1, and 6.1 of the Environmental Mitigation Plan set forth completed and ongoing studies available to help establish baseline conditions. Specific to marine biological resources, a number of studies have been conducted in the northern Atlantic Outer Continental Shelf (OCS) by various agencies and organizations and this list will grow as additional research studies are completed supporting approved or soon-to-be approved offshore wind projects in the region. The Proposer utilized the extensive data collected by these studies to establish baseline data within the Project Area. For the purposes of the Environmental Mitigation Plan, the Project Area refers to the Offshore Wind Generation Facility within the OCS-A 0487 Lease Area, the export cable corridor, and the onshore Project facilities.

Additionally, as described in Sections 4.1.2, 5.1.2, and 6.1.2 of the Environmental Mitigation Plan, the Proposer's organization has conducted appropriate site assessment surveys to establish baseline conditions of wildlife within the Project Area in coordination with regulatory agencies and stakeholders.

8.2.3.2 Impact Monitoring

2. Assess and quantify (to the extent practical) changes attributable to Project activities; and

3. Monitor for impacts on these types of wildlife during each phase of physical work for the Project (site assessment, construction, operation, and decommissioning) to inform mitigation planning for later phases of the Project as well as for future Projects.

In the event that these activities cannot be clearly defined at this stage, the Proposer must describe how it will approach these questions and data gaps.

Proposers should identify collaborative efforts currently underway or in the planning stages to help highlight means by which the industry plans to standardize scientific methods, surveys, and monitoring plans across the region to enhance data compatibility and utility. Proposers are encouraged to reference Wildlife Data Standardization and Sharing: Environmental Data Transparency for New York State Offshore Wind Energy. The Proposer must describe how it plans to make environmental data available in accordance with Section 2.2.8 of the RFP.

To assess changes and quantify impacts attributable to the Project and monitor for impacts, the Proposer conducted several studies following a review of the literature on existing offshore wind farms (including the baseline materials described in the Environmental Mitigation Plan), regional and local stakeholder concerns, and data gaps identified by resource managers in the Project Area and the vicinity. The development of the study topics and methodologies pursuant to this Environmental Mitigation Plan has been an iterative process including input from various stakeholders and agencies from multiple states, including New York, Rhode Island, Connecticut, and Massachusetts. The Proposer will continue to maximize the impact of research efforts by collaborating with other developers implementing similar initiatives. The Proposer will utilize forums such as the E-TWG, Regional Wildlife Science Collaborative (RWSC), Responsible Offshore Science Alliance (ROSA), and Massachusetts Fisheries Working Group to facilitate communication and collaboration with other stakeholders. Surveys were conducted in order to collect sufficient baseline data prior to offshore construction and will continue throughout construction and operation of the Project.

The Proposer's organization has monitored for impacts to marine mammals and other marine wildlife during site assessment surveys completed for the Project. This monitoring will continue through construction, as described in the Marine Mammal Monitoring and Mitigation Plan, included in the COP. In addition, New York State agencies have reviewed and approved the Project's Environmental Management and Construction Plan, which details environmental mitigation measures during construction in New York waters and onshore.

The Proposer has and will continue to work with federal and state agencies to determine appropriate and practicable marine wildlife monitoring and mitigation methods during the construction, operation, and decommissioning phases of the Project. Sections 4.3, 5.3, and 6.3 of the Environmental Mitigation Plan set forth, in tabular form, potential mitigation measures through each phase of the Project.

The Proposer and its affiliates have been contributing collaboratively in support of monitoring activities and assessing impacts. The Proposer and its affiliates have and plan to continue to voluntarily report North Atlantic right whales and maintain ongoing engagement with WhaleAlert, New England Aquarium, and the National Oceanic and Atmospheric Administration (NOAA) Fisheries Greater Atlantic Regional Fisheries Office (GARFO) and Northeast Fisheries Science Center to enhance and improve on real-time sharing of information across multiple data platforms. The Proposer and its affiliates have also shared Protected Species Observer (PSO) data with New England Aquarium and NOAA Fisheries GARFO for analysis funded by the Marine Mammal Commission. Projects that the Proposer's affiliates are contributing to include projects with Stony Brook University to advance marine mammal research. Ørsted, an affiliate of the Proposer, has agreed to share physical and biological information and data collected in Ørsted-leased waters under U.S. jurisdiction with NOAA, per the Memorandum of Agreement between NOAA and Ørsted announced in March 2021. Additional details of existing collaborations are provided in Section 3.6 of the Environmental Mitigation Plan.

The Proposer will continue to make non-proprietary site and environmental data publicly available in accordance with NYSERDA's *Wildlife Data Standardization and Sharing: Environmental Data Transparency for New York State Offshore Wind*. The Proposer will set up a data portal or similar data-sharing website and a designated science coordinator will receive, process, and collaborate on requests for Project data. Additional information on data availability is provided in Section 3 of the Environmental Mitigation Plan.

8.2.4 Supporting Other Environmental Research

D.4 The selected Proposer will be required to coordinate with independent scientists supported by third parties for the purpose of research and publication in peer reviewed journals or other scientifically vigorous products. This coordination may include the provision of reasonably requested Project data, and access to the Project area to examine environmental sensitivities and/or the impacts of offshore wind energy development on the environment.

The Proposer must describe how such requests will be considered and processed, and any restrictions on data provision or access the Proposer believes may be required to protect trade secrets or maintain site security.

The Proposer shall identify ways to enhance site accessibility for the advancement of third party scientific and technological study.

The Proposer may also elect to identify a level of financial commitment that will be appropriated to leverage third-party environmental research funding, including federal or State-supported research into relevant ecological communities and the effects of offshore wind energy development. Such financial commitments will be favorably considered in the proposal review process. Funding identified here should be separate from funding allocated under Section 2.2.7 of the RFP.

The Proposer is committed to supporting third-party research associated with development of the Project and intends to take a collaborative approach to science. The Project Area will be accessible by vessels, including research vessels, for independent scientists to examine any environmental sensitivities as a result of the Project. The Proposer will consult with the E-TWG, the New York State Fisheries Technical Working Group (F-TWG), RWSC, and ROSA for recommendations on research priorities and management of third-party research. As described in Section 3 of the Environmental Mitigation Plan, the Proposer's organization will include a designated science coordinator to receive, process, and collaborate on requests for its organization's offshore wind projects. The science coordinator will consider any restrictions on data provision or access as appropriate to protect trade secrets or maintain site security.

8.2.5 Marine Mammals and Sea Turtles

D.5 The development of offshore wind energy poses some concerns about effects on marine mammals and sea turtles, primarily related to the introduction of man-made sounds, changes in ship traffic, and the long-term presence of turbines in the ocean.

Sounds resulting from bottom surveys, ships, and pile driving may risk introducing possible changes in mammal behavior, including effective habitat reduction because of sound avoidance, interruption of life-cycle activities, and injury to hearing. For some marine mammals, low-frequency sounds such as pile driving, if performed in close proximity to an animal, can potentially cause permanent damage to hearing or temporarily make it difficult for the animal to hear predators, prey, and each other.

The Proposer must provide a description of how it will work to understand and minimize the Project's risk to marine mammals and sea turtles, with special attention to highly vulnerable and endangered species such as the North Atlantic right whale. At a minimum this should consist of:

8.2.5.1 Site Characterization

1. A basic description of what is known about the proposed site in terms of marine mammal and sea turtle assemblage, temporal and spatial use of the site, and which species the Proposer believes to be of greatest concern and why;

Section 4.2 of the Environmental Mitigation Plan sets forth the number of marine mammal and sea turtle species known to occur within the north Atlantic OCS region, which includes the Project Area; the 14 species protected by the *Marine Mammal Protection Act* (MMPA) that are considered to regularly or commonly occur in the waters surrounding the Lease Area, at least seasonally; and the 9 *Endangered Species Act* (ESA)-listed species known or considered possible to occur in that region, consisting of 5 whales and 4 sea turtles. It is important to recognize when characterizing marine wildlife that they are mobile species with occurrences that vary from year to year and from season to season. Typically, the waters associated with the Project Area are used by marine mammals and sea turtles for foraging, transiting, or migrating. The presence and/or absence of marine mammals and sea turtles within these waters can be affected by a variety of parameters, including water temperature, movements or availability of prey, and human presence or disturbance.

Of all the marine mammals and sea turtle species that have the potential to occur within the Project Area, the Proposer believes, on a relative basis, that the endangered species of whales and sea turtles that may occur within the waters of the north Atlantic OCS (described in more detail in Section 4.2 of the Environmental Mitigation Plan) are of greatest concern because of their current population status and potential occurrence within the Project Area. The Marine Mammal, Sea Turtle, and ESA-Listed Fish Assessment, part of the COP, also provides additional information about species that could be affected by the Project.

8.2.5.2 Mitigation Measures

2. A description of proposed measures to minimize the impacts of sound on marine mammals and sea turtles during all phases of Project development. This should include, at a minimum:

a. Anticipated pre- and post-construction survey techniques to establish an ecological baseline and changes to that baseline within the Project site;

b. Minimum size of exclusion zone intended to be monitored during geophysical surveys and construction;

c. Planned approaches to understanding marine mammal and sea turtle presence and absence within the development site exclusion zone during site assessment and construction (e.g., a combination of visual monitoring by protected species observers and passive acoustic monitoring, the use of night vision and infra-red cameras during nighttime activities, etc.);

d. Proposed temporal constraints on construction activities and geophysical surveys with noise levels that could cause injury or harassment in marine mammals (e.g., seasonal restrictions during periods of heightened vulnerability for priority species; commencing activities during daylight hours and good visibility conditions, dynamic adjustments following the detection of a marine mammal); and

As described in Section 4.5 of the Environmental Mitigation Plan, the Proposer has engaged with the Bureau of Ocean Energy Management (BOEM), NOAA Fisheries, United States Fish and Wildlife Service (USFWS), New York State Department of Environmental Conservation (NYSDEC), and other stakeholders to identify and implement appropriate and practicable measures to avoid, minimize, and/or mitigate impacts of sound on marine mammals and sea turtles during site assessment, construction, and

operation. The Proposer has worked with BOEM and NOAA Fisheries to develop a Project-specific Mitigation and Monitoring Plan as part of the COP. In addition, New York State agencies have reviewed and approved the Project's Environmental Management and Construction Plan, which details environmental mitigation measures during construction in New York waters and onshore.

The Proposer's characterization of baseline conditions is a result of the review of extensive existing literature and reports, including the completed and ongoing studies identified in Section 4.1 of the Environmental Mitigation Plan. Informed by consultations with NOAA Fisheries, the Proposer completed an underwater acoustic assessment, as part of the COP, to evaluate potential impacts to marine mammals from noise generated during construction and operation of the Project, which included modeling of pile driving activities to occur during construction.

The results of this assessment helped to inform the Project's mitigation and monitoring plan to be implemented during construction and operation of the Project. Section 4.3 of the Environmental Mitigation Plan sets forth, in tabular form, these and other potential impacts and proposed mitigation measures through each phase of the Project.

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e. Proposed equipment and technologies the Proposer would use to reduce the amount of sound at the source, if any.

The Proposer is committed to incorporating noise attenuation technologies to reduce the sound from impact pile driving of foundations. Available technologies can create a barrier around a sound source to reduce the propagation of noise to surrounding waters. One well-known method that has been used to mitigate the noise produced by pile driving is bubble curtains. There are additional commercially viable technologies, and there are other technologies that are in the early development stage and may not be available and/or practicable for use for the Project.

The Proposer will use sound attenuation devices during all impact pile driving, including bubble curtain and/or other noise attenuation systems that will achieve, at a minimum, 10 decibels (dB) of sound attenuation. In addition, the Proposer will incorporate soft starts for impact pile driving, will use the least hammer energy possible, and will implement clearance and shutdown zones during all impact pile driving. The Proposer will also perform sound field verification during impact pile driving. These measures have been reviewed by NOAA Fisheries, who issued a draft rule on February 8, 2023, which would approve the Project's application for a Letter of Authorization pursuant to the MMPA.

See the Environmental Mitigation Plan, provided as Attachment 8.2-1, for additional details.

8.2.5.3 Ship Strike Reduction

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3. A description of how the Proposer will seek to minimize the risk of ship strikes through timing, speed restrictions (e.g., stakeholders have suggested speed restrictions of 10 knots during time periods with high densities of species of concern), use of shipping lanes, and conformance to the National Oceanic and Atmospheric Administration guidance to avoid ship collision with whales (https://www.fisheries.noaa.gov/national/endangered-species-conservation/reducing-ship-strikes-north-atlantic-right-whales).

The Proposer recognizes the importance of minimizing the risk of ship strikes. Therefore, to reduce potential risks to marine mammals to the maximum extent practicable, the Project plans to implement the mitigation measures set forth in Section 4.3 of the Environmental Mitigation Plan.

In addition to the mitigation measures detailed in Section 4.3 of the Environmental Mitigation Plan, the Proposer is evaluating other technologies to support adaptive mitigation and monitoring to increase Project flexibility through enhanced situational awareness. These technologies include autonomous real-time marine mammal acoustic detectors (i.e., buoys, gliders) and a real-time marine mammal sightings data software/platform that can share data.

8.2.6 Birds and Bats

D.6 Offshore wind energy has the potential to adversely impact birds and bats during siting, construction, and operation. Impacts include direct mortality from collisions with wind turbines and other structures, habitat loss, displacement, and sensory disturbances from sound and light. Since offshore wind is a new industry in the Atlantic and all potential impacts are not known, it is critical that current use by birds and bats is well understood before construction and use and impacts continue to be monitored during and post- construction so that unexpected impacts can be mitigated for.

The Proposer must provide a description of how it will work to understand and minimize the Project's risk to birds and bats. At a minimum this should include:

1.A description of what is known about the proposed site in terms of bird and bat assemblages, temporal and spatial use of the site by key species, and which species the Proposer believes to be of greatest concern and why;

Section 5.2 of the Environmental Mitigation Plan identifies the bird and bat species most likely to regularly occur in the area based on studies conducted by BOEM, USFWS, NYSERDA, and others. The Proposer's organization also conducted pre-construction offshore avian boat-based surveys in the Lease Area, as described in Section 5.1.2 of the Environmental Mitigation Plan. In addition to seabirds, migratory land birds and shorebirds may fly over the Lease Area during the spring and fall. Of the avian species most likely to regularly occur in the Lease Area, the Proposer believes, on a relative basis, that the ESA-listed species set forth in Section 5.2 of the Environmental Mitigation Plan are of greatest concern due to their current population status.

Eight species of bat are present in the vicinity of the Project, including both onshore and offshore areas. Bat occurrence in offshore waters appears to be relatively low, and the Proposer's organization has also collected opportunistic data of bats present in the offshore environment through installation of vessel-based acoustic bat detectors on high-resolution geophysical (HRG) and geotechnical survey vessels operating in the waters surrounding the Lease Area, as described in Section 5.1.2 of the Environmental Mitigation Plan. Of the eight species, only the northern long-eared bat (*Myotis septentrionalis*) is listed as endangered by the ESA and NYSDEC. NYSDEC has indicated that Long Island is generally an important area for the northern long-eared bat. Of the bat species that could be exposed to the Project, the Proposer believes, on a relative basis, the northern long-eared bat is of greatest concern due to being listed as endangered under the ESA.

2. The planned approach that the Proposer will use to evaluate risks to birds and bats generally, and those of greatest concern specifically;

3. Steps the Proposer will pursue to minimize risk to birds and bats (e.g., lighting); and

4. Identification of technological approaches to assess impacts or any Proposals for other research or mitigations relating to birds or bats planned or under consideration at this time.

To evaluate construction and operations and maintenance impacts on avian and bat species, the Proposer's organization completed a Project-specific Avian and Bat Risk Assessment as part of the COP, which is described in Section 5.1.2 of the Environmental Mitigation Plan. In addition, New York State agencies have reviewed and approved the Project's Environmental Management and Construction Plan, which details environmental mitigation measures during construction in New York waters and onshore.

The Project's design incorporated elements that mitigate potential risks to birds and bats through each phase of the Project, including the proposed mitigation measures set forth in tabular form in Section 5.3 of the Environmental Mitigation Plan. To minimize and mitigate impacts to bat species, particularly the northern long-eared bat, associated with the onshore portions of the Project, the Proposer has committed to limiting clearing during certain time periods of greater risk.

The Proposer is considering various approaches to post-construction monitoring to assess any Project-related impacts to bird and bat species and has developed a Project-Specific Monitoring Framework as part of the COP.

8.2.7 Fish, Invertebrates and Their Habitats

D.7 The principal potential risks of offshore wind energy development to fish, invertebrates and their habitats include possible changes to the seafloor and other habitats, increased sediment levels in the water column, noise and sensory disturbances, and direct harm to fish and invertebrate species from construction equipment, and foraging/spawning habitat loss. These changes could result in changes in predator/prey relationships, competition between species and changes to fish and invertebrate populations in and around the Project site.

The Proposer must provide a description of how it will work to understand and minimize the Project's risk to fish and invertebrates and their habitats. At a minimum this should include:

1. A basic description of what is known about the proposed site in terms of fish and invertebrate assemblage, and temporal and spatial variations in fish, invertebrates, and their habitats at the proposed site. The use of collaborative monitoring models with the fishing community is encouraged to develop trusted baseline data;

2. Identification of fish and invertebrate species the Proposer believes to be of greatest concern and why;

Section 6.2 of the Environmental Mitigation Plan identifies the fish and invertebrate species most likely to regularly occur in the area based on studies conducted by BOEM, NOAA, NYSERDA, and others. The Proposer's organization has and will continue to conduct a variety of pre-construction surveys in collaboration with the fishing community, as described in Section 6.4 of the Environmental Mitigation Plan.

This area is broadly characterized as a complex ecosystem. The vicinity of the Project Area contains Essential Fish Habitat (EFH) for several species of New England Finfish, Mid-Atlantic Finfish, invertebrates, highly migratory species, skates, and sharks, which are described in further detail in Section 6.2 of the Environmental Mitigation Plan. Virtually all coastal U.S. waters are designated as EFH for at least one managed species. Designated EFH is an indicator of underlying habitat features important to fish. EFH delineates areas where the species may occur based on known occurrence of the species or habitat features important to the species/life stage. Of the fish species that could be exposed to the Project, the Proposer believes the EFH-designated species are of greatest concern, and the Proposer has also considered potential impacts to the most valuable commercial fish and invertebrates (federally and in New York State), and threatened and endangered species.

3. The planned approach that the Proposer will use to evaluate risks and impacts to fish, invertebrates and their habitats generally, and the species or habitats of greatest concern specifically;

4. Steps the Proposer will pursue to minimize risk to fish, invertebrates and their habitats (e.g., foundation type, scour protection, cable shielding for electromagnetic fields, construction windows, siltation/turbidity controls, use of dynamic-positioning vessels and jet plow embedment, port construction and dredging); and

5. Any Proposals for other research or measures taken to reduce risk or impacts to fish, invertebrates or their habitats (e.g., ecosystem or habitat enhancements).

The Proposer's approach to evaluating risks and impacts to fish, invertebrates, and their habitats began in the pre-COP phase with the collection of baseline data to determine where sensitive areas exist. Since August 2016, the Proposer's organization has been completing geophysical, geotechnical, and benthic surveys, as well as desktop analyses, to identify areas of sensitive benthic habitat in the OCS-A 0487 Lease Area in accordance with relevant BOEM guidelines.

In addition to conducting surveys, the Proposer consulted with federal and state agencies and other stakeholders to build a baseline understanding of fisheries resources and to identify sensitive habitats and areas of particular concern in the Lease Area and along the cable route. State agencies have reviewed and approved the Project's Environmental Management and Construction Plan, which details environmental mitigation measures during construction in New York waters and onshore.

The detailed table in Section 6.3 of the Environmental Mitigation Plan includes the Proposer's approach to potential impacts to fish, invertebrates, and their habitats, and proposed mitigation measures for each stage of the Project. In addition, New York State agencies have reviewed and approved the Project's Environmental Management and Construction Plan, which details environmental mitigation measures during construction in New York waters and onshore.

The Proposer is committed to collaborative science with the commercial and recreational fishing industries pre-, during, and post- construction. Fisheries monitoring studies are being planned to assess the impacts associated with the Project on economically and ecologically important fisheries resources within the Project Area. These studies will be conducted in collaboration with the local fishing industry and will build upon monitoring efforts being conducted by affiliates of the Proposer at other wind farms in the region. A number of monitoring techniques (e.g., trawl survey, ventless trap survey, dredge survey, optical surveys) can be utilized to evaluate changes to environmental resources in the Project Area. As practicable, the survey designs used by the developer will be made compatible with other regional surveys (e.g., Northeast Fisheries Science Center trawl survey) to facilitate information integration with, and compared to, information from existing data collection efforts. The Proposer's organization is developing study topics and methodologies through an iterative process and will include input from various stakeholders and agencies from multiple states, including New York, Rhode Island, and Massachusetts. The Proposer has developed a Project-Specific Monitoring Plan as part of the COP.

8.2.8 Considerations for Subsea and Overland Cables

D.8 New York State has developed an Offshore Wind Cable Corridor Constraints Assessment (Assessment) to better understand the constraints of siting cables in New York State waters, at landfall, and along overland routes to existing points of interconnection. The potential environmental impacts of activities associated with subsea and overland cable routes should be identified.

The Proposer and its affiliates reviewed and provided comment on the draft Offshore Wind Cable Corridor Constraints Assessment (the Assessment) and considered the findings of the final Assessment when conducting detailed cable routing for the Project. In developing the cable routing the Proposer sought to avoid, minimize, and mitigate impacts to sensitive habitats and prioritized use of previously developed or disturbed areas, while also identifying a technically feasible route that considers cable burial requirements. The tables in Sections 4.3, 5.3, and 6.3 of the Environmental Mitigation Plan identify the potential impacts associated with subsea and overland cables and routes and proposed mitigation measures.

8.2.9 Additional Considerations

D.9 The Proposer must outline any additional mitigation strategies not otherwise described herein that would improve the Plan and reduce impacts on the environment.

Please see Sections 4.3, 5.3, and 6.3 of the Environmental Mitigation Plan for proposed mitigation strategies addressing the potential environmental impacts from the Project. Mitigation strategies are site-specific, suited for the local environmental conditions, and dependent on Project design and anticipated impact. Additional mitigation strategies will be incorporated based on final coordination and consultation with regulatory agencies and stakeholders.

8.2.10 Project Decommissioning

D.10 The Proposer must describe how it will develop a decommissioning plan, including coordination with environmental stakeholders, and any elements of its contemplated decommissioning plan that can be identified at this stage. Proposals demonstrating thoughtful consideration of the full life cycle of offshore wind energy projects will be considered favorably.

The Proposer will decommission the Project in accordance with a detailed Project-specific decommissioning and removal plan that will be developed in compliance with applicable laws, regulations, and generally accepted industry practices that exist at the end of the Project's operational life. This plan will account for changing circumstances during the operational phase of the Project and will reflect new discoveries, particularly in the areas of marine environment, technological change, and any relevant amended legislation. The Proposer will develop the decommissioning plan in coordination with stakeholders, including regulatory agencies, fisheries and marine stakeholders, and local communities.

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Attachment 8.2-1

Environmental Mitigation Plan

Environmental Mitigation Plan

for

Sunrise Wind

Version 2.1

Prepared Pursuant to

Section 12.06 of the Offshore Wind Renewable Energy Certificate Purchase and Sale Agreement by and Between the New York State Energy Development and Resource Authority and Sunrise Wind LLC dated October 23, 2019

for

New York State Energy Research and Development Authority

Albany, NY

Prepared by

Sunrise Wind LLC

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August 20, 2021

Record of Revision

Version No. and Revision Date	Description of changes	Revision on pages
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2.0;12/01/2020	Update based on E-TWG comments and COP application	All pages
2.1; 08/20/2021	August, 2021	Cover page

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Laura Morse **Marine Mammal and Sea Turtle Lead and Environmental Manager**	Receive, process, and disseminate scientific data collected in the Lease Area Marine mammal expert, E-TWG specialist; Member of RWSE planning group.	Phone: 857-310-8616 Email: LAURM@orsted.com
Brita Woeck **Avian Lead and Environmental Manager**	Receive, process, and disseminate scientific data collected in the relevant Lease Area(s) Lead on avian topics; E-TWG specialist.	Phone: 857-348-3274 Email: BRIWO@orsted.com
Gregory DeCelles **Fisheries Science Specialist**	Receive, process, and disseminate scientific data collected in the relevant Lease Area(s) Member of the ROSA Advisory Council and Interim Fisheries Methods Working Group	Phone: 857-408-4497 Email: GREDE@orsted.com
Jennifer Garvey **Development Manager**	New York stakeholder manager	Phone: 857-348-3258 Email: JEGAR@orsted.com
John O'Keeffe **Head of Marine Affairs**	Head for marine stakeholder communications and fisheries department; F-TWG attendee	Phone: 857-332-4485 Email: JOHNO@orsted.com

Rodney Avila **Corporate Fisheries Liaison**	Collect data about the structure of fishing communities associated with the Project area.	Phone: 857-332-4479 Email: RODAV@orsted.com

Links to project information:

Project website: https://sunrisewindny.com/

Data Portal: Under Construction

Table of Contents

1. Environmental Mitigation Plan Summary

1.1. Overall philosophy and principles

This section should describe the overall philosophy and principles the Developer will follow to avoid, minimize, restore, and off-set potential environmental impacts.

- At Orsted, we have a vision of a world that runs entirely on green energy. As one of the world's largest green energy developers, sustainability is deeply rooted in what we do and who we are as a company. As part of our overall philosophy we have built our sustainability targets around the UN's Sustainable Development Goals and assisted with writing the UN Sustainable Ocean Global Principles. Our annual Sustainability report can be found here - https://orstedcdn.azureedge.net/-/media/Annual_2018/Sustainability_report_2018.ashx?la=en&rev=ae72e27749aa4a34a5f2d91783da7431&hash=75AB7D9FEE750ED5FBB41D7CA5E32980
- All energy infrastructure is built in a unique environment where we aim to do our utmost to protect the natural ecosystems. It is central that we manage environmental impacts on these ecosystems well to acquire permission to build wind farms. In 2018, we adopted a new offshore wind biodiversity policy - (https://orstedcdn.azureedge.net/-/media/WWW/Docs/Corp/COM/Sustainability/Orsted-Offshore-Wind-Biodiversity-Policy.ashx?la=en&rev=be32532eb16a4b20b1f86eed77050e92&hash=D309C9DA9A633E1C47D168ACBD254797).
- The policy is built on our long-term experience and understanding of the biodiversity challenges we face when building offshore wind farms.
- Sunrise Wind will prioritize avoiding and/or minimizing environmental impacts through siting, design, and real time mitigation, consistent with its environmental stewardship approach under pinned by the Orsted values outlined above.
- Sunrise Wind understands and is committed to early identification of potential impacts, in order to avoid an impact, or to plan for impact mitigation.
- Sunrise Wind will address environmental impacts in siting of the Project components in accordance with all permits and approvals required for the Project, including all permits and approvals from applicable governmental and regulatory authorities charged with protecting the environment.
- Sunrise Wind recognizes the benefits of monitoring activities for this Project as well as the value of project-specific data for informing future aspirations for offshore wind development.
- Sunrise Wind will focus on restoring potentially impacted resources and, to the extent applicable, offsetting the environmental impact when environmental impacts cannot be avoided where possible within the parameters of the Project, in all instances as provided in applicable permits and approvals.

1.2. Overall approach to incorporating data and stakeholder feedback

This section should describe how the Developer will use research, data, and stakeholder feedback to update the EMP and support decision-making throughout the life cycle of the project (pre-construction, surveys, site design, construction, operations, and decommissioning).

- Sunrise Wind has and will continue to work proactively to identify impacts with stakeholders including, but not limited to, federal and state agencies, Native American Tribes, environmental Non-Government Organization ("e-NGOs"), scientific experts, and state groups like the NYSERDA Environmental Technical Working Group ("E-TWG"). This will involve regular update meetings and briefings to those stakeholders identified above. Additionally, Sunrise will endeavor to incorporate feedback from the stakeholders identified to reduce impacts where appropriate.
- Sunrise Wind has and will continue to review existing research and data, seek input from stakeholders, and conduct surveys of the Project Area, which will inform decisions made throughout the design, permitting, construction, operation, and decommissioning of the Project.
- Sunrise Wind has and will continue to review proposed survey rationales and methodologies with regulatory stakeholders, along with surveys already conducted, and seek input on survey work, as well as design, construction, and operation and decommissioning plans for the Project.
- Sunrise Wind has and will continue to host regular progress meetings with agencies (including relevant New York State Agencies) to provide status updates, planned project activities (i.e. field surveys, siting, etc.) and to solicit feedback as required in connection with permitting processes and permit requirements. Sunrise Wind will endeavor to incorporate feedback into Project plans where appropriate.
- Sunrise Wind has and will continue to support collaborative science to further understand the potential impacts of offshore wind and will take the results into account in the development, design, construction, and operation of the Project.

1.3. Existing guidance and best practices that will be followed

This section should present a list of existing guidance documents, publications, tools, and/or plans that will be followed to support the EMP. Include links, if available, for all references.

- Sunrise will follow relevant guidance documents and rely on publications, tools and/or plans to support development of the EMP in accordance with applicable permit requirements. Such guidance documents are expected to include, but not be limited to, the following documents. Data sources for resource baseline characterization are listed in the resource-specific sections below.
  Guidance Documents:
  - Draft Guidance Regarding the Use of a Project Design Envelope in a Construction and Operations Plan (BOEM 2018)
    - https://www.boem.gov/Draft-Design-Envelope-Guidance/

- Guidelines for Providing Information on Marine Mammals and Sea Turtles for Renewable Energy Development on the Atlantic Outer Continental Shelf Pursuant to 30 CFR Part 585 (Marine Mammal and Sea Turtle Guidelines; BOEM 2019)
  - https://www.boem.gov/BOEM-Marine-Mammals-and-Sea-Turtles-Guidelines/
- Guidelines for Providing Avian Survey information for Renewable Energy Development on the Atlantic Outer Continental Shelf Pursuant to 30 CFR Part 585 Subpart F (BOEM 2020)
  - https://www.boem.gov/sites/default/files/documents/newsroom/Avian%20Survey%20Guidelines.pdf
- Guidelines for Providing Information on Fisheries for Renewable Energy Development on the Atlantic Outer Continental Shelf Pursuant to 30 CFR Part 585 (BOEM 2019)
  - https://www.boem.gov/Fishery-Survey-Guidelines/
- Guidelines for Providing Benthic Habitat Survey Information for Renewable Energy Development on the Atlantic Outer Continental Shelf Pursuant to 30 CFR Part 585 (BOEM 2019)
  - https://www.boem.gov/BOEM-Renewable-Benthic-Habitat-Guidelines/
- Guidelines for Providing Archaeological and Historic Property Information Pursuant to 30 CFR Part 585 (BOEM 2020)
  - https://www.boem.gov/sites/default/files/documents/about-boem/Archaeology%20and%20Historic%20Property%20Guidelines.pdf
- Guidelines for Providing Geophysical, Geotechnical, and Geohazard Information Pursuant to 30 CFR Part 585 (BOEM 2020)
  - https://www.boem.gov/sites/default/files/documents/about-boem/GG-Guidelines.pdf
- Guidelines for Providing Information on Fisheries Social and Economic Conditions for Renewable Energy Development on the Atlantic Outer Continental Shelf Pursuant to 30 CFR Part 585 (BOEM 2020)
  - https://www.boem.gov/sites/default/files/documents/about-boem/Social%20%26amp%3B%20Econ%20Fishing%20Guidelines.pdf
- Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (NOAA Fisheries 2018)
  - https://www.fisheries.noaa.gov/resource/document/technical-guidance-assessing-effects-anthropogenic-sound-marine-mammal-hearing
- Data Gathering Process: Geotechnical Departures for Offshore Wind Energy (DNVGL 2018)
  - https://www.boem.gov/Data-Gathering-Process/
- Geophysical and Geotechnical Investigation Methodology Assessment for Siting Renewable Energy Facilities on the Atlantic OCS
  - https://www.boem.gov/G-and-G-Methodology-Renewable-Energy-Facilities-on-the-Atlantic-OCS/

- Recommendations for Mapping Fish Habitat (NOAA's National Marine Fisheries Greater Atlantic Regional Fisheries Office Habitat Conservation and Ecosystem Services Division 2020)

- Draft Proposed Guidelines for Providing Information on Lighting and Marking of Structures Supporting Renewable Energy Development (BOEM 2019)
  - https://www.boem.gov/sites/default/files/documents/renewable-energy/Lighting-and-Marking-Guidelines.pdf

Publications:

- U.S. Dept. of Energy *"Tethys"* database for offshore wind energy publications (USDOE-PNNL 2019)
  - https://tethys.pnnl.gov/
- NYSERDA Publications and Technical Reports
  - https://www.nyserda.ny.gov/About/Publications
  - https://www.nyserda.ny.gov/About/Publications/Offshore-Wind-Plans-for-New-York-State
- BOEM Renewable Energy Research (BOEM 2019)
  - https://www.boem.gov/Renewable-Energy-Environmental-Studies/
- Summary Report: Best Management Practices Workshop for Atlantic Offshore Wind Facilities and Marine Protected Species (BOEM 2018)
  - https://www.boem.gov/Final-Summary-Report-for-BMP-Workshop-BOEM/
- Development of Mitigation Measures to Address Potential Use Conflicts between Commercial Wind Energy Lessees/Grantees and Commercial Fishers on the Atlantic Outer Continental Shelf (BOEM 2013; BOEM 2014)
  - https://www.boem.gov/Draft-Report-on-Fishing-Best-Management-Practices-and-Mitigation-Measures/
  - https://www.boem.gov/OCS-Study-BOEM-2014-654/
- NYSDEC. n.d. New York Bight Whale Monitoring Program (NYSDEC n.d.)
  - https://www.dec.ny.gov/lands/84428.html
- NYSDEC. 2018. Summary Report of the New York Bight Sea Turtle Workshop (NYSDEC 2018)
  - https://www.dec.ny.gov/docs/fish_marine_pdf/dmrturtlereport.pdf

Tools:

- New York Office of Planning and Development Geographic Information Gateway
  - http://opdgig.dos.ny.gov/#/home
- Northeast Ocean Data Explorer (NROC 2019)
  - https://www.northeastoceandata.org/
- Mid-Atlantic Ocean Data Portal (MARCO 2019)
  - https://portal.midatlanticocean.org/
- BOEM/NOAA Marine Cadastre (BOEM & NOAA 2019)
  - https://marinecadastre.gov/
- NOAA Essential Fish Habitat (EFH) Data Inventory

- https://www.habitat.noaa.gov/application/efhinventory/index.html

- Ocean Biogeographic Information System (OBIS) Mapper and Protected Species Database (OBIS 2019)
  - https://mapper.obis.org/
  - https://mgel.env.duke.edu/projects-old/obis-seamap/
- NOAA-USFWS ESA inventory/mapper and Section-7 Consultation tools – Mapper and IPaC (NOAA 2019; USFWS 2019)
  - https://www.greateratlantic.fisheries.noaa.gov/protected/section7/listing/index.html
  - https://ecos.fws.gov/ipac/
- NOAA Marine Mammal Acoustic Technical Guidance (NOAA 2018)
  - https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-acoustic-technical-guidance
- NOAA Marine Mammal Annual Stock Assessments (NOAA 2019)
  - https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments
- National Oceanic Atmospheric Administration Greater Atlantic Regional Fisheries Office (NOAA GARFO). 2016. GARFO Acoustics Tool: Analyzing the effects of pile driving on ESA-listed species in the Greater Atlantic Region (webpage). National Marine Fisheries Service.
  - https://www.greateratlantic.fisheries.noaa.gov/protected/section7/guidance/consultation/index.html
- Additional sources such as Marine-Life Data and Analysis Team (MDAT; http://seamap.env.duke.edu/models/mdat/ as recommended by National Oceanic and Atmospheric Administration (NOAA) Fisheries and the Bureau of Ocean Energy Management.

Plans:

- Mid-Atlantic Regional Ocean Action Plan (MARCO 2016)
  - http://midatlanticocean.org/ocean-planning/
- Northeast Ocean Plan (NROC 2016)
  - https://neoceanplanning.org/plan/
- New York State Offshore Wind Master Plan (NYSERDA 2017), with corresponding studies/appendices listed below
  - https://www.nyserda.ny.gov/All-Programs/Programs/Offshore-Wind/Offshore-Wind-in-New-York-State-Overview/NYS-Offshore-Wind-Master-Plan
- New York State Offshore Wind Master Plan Birds and Bats Study (NYSERDA 2017)
  - https://www.nyserda.ny.gov/All-Programs/Programs/Offshore-Wind/Studies-and-Surveys
- New York State Offshore Wind Master Plan Fish and Fisheries Study (NYSERDA 2017)
  - https://www.nyserda.ny.gov/All-Programs/Programs/Offshore-Wind/Studies-and-Surveys

- New York State Offshore wind Master Plan Marine Mammals and Sea Turtle Study (NYSERDA 2017)
  - https://www.nyserda.ny.gov/All-Programs/Programs/Offshore-Wind/Studies-and-Surveys
- New York State Offshore Wind Master Plan Sand and Gravel Resources Study (NYSERDA 2017)
  - https://www.nyserda.ny.gov/All-Programs/Programs/Offshore-Wind/Studies-and-Surveys
- New York State Offshore Wind Master Plan Environmental Sensitivity Analysis (NYSERDA 2017)
  - https://www.nyserda.ny.gov/All-Programs/Programs/Offshore-Wind/Studies-and-Surveys
- New York Ocean Action Plan 2017 – 2027 (NYSDEC n.d.)
  - https://www.dec.ny.gov/lands/84428.html
- New York State (NYS). 2015. 2015 New York State Energy Plan.
  - https://energyplan.ny.gov/Plans/2015.aspx.

Other:

- New York State Fisheries Technical Working Group (NYSERDA 2019)
  - https://nyfisheriestwg.ene.com/
- New York State Environmental Technical Working Group
  - https://www.nyetwg.com/

2. Communications and Collaboration Approach

2.1. Overview and communication plan objectives

This section should provide an overview of the communication plan and objectives and its importance in environmental migration.

- Sunrise Wind has and will continue to engage with both regulatory (including federal and state agencies) and non-regulatory stakeholders (including the fishing community, environmental groups, and local communities).
- Sunrise Wind has carried out a detailed stakeholder mapping process to promote the Project's awareness of relevant inputs, even from hard to reach groups, and consideration of appropriate information that is applicable to the Project. Stakeholder mapping will be periodically updated with newly identified stakeholders during the Project lifetime.

2.2. Communication officers/positions, responsibilities, and contact information

This section will provide a list of communication officers, their role, and name and contact information. The list should provide stakeholders with an understanding of who should be called for a particular issue or question. It will also include links to the project and fisheries website so readers know where to find additional information.

Name/Title	Role/Responsibilities	Contact Information
Michael Evans **Permitting Manager**	Permitting manager for Sunrise Wind	Phone: 614-218-4286 Email: MICEV@orsted.com
Stephanie Wilson **Head of US Permitting**	Department head for Orsted US Permitting	Email: STEPW@orsted.com
Mark Gardella **Manager Offshore Wind**	Responsible for onshore permitting for Sunrise Wind	Phone: 860-665-2583 Email: mark.gardella@eversource.com
James Berg **Supervisor of Permitting for Offshore Wind**	Responsible for onshore permitting for Sunrise Wind	Phone: 860-665-3421 Email: james.berg@eversource.com
Laura Morse **Marine Mammal and Sea Turtle Lead and Environmental Manager**	Receive, process, and disseminate scientific data collected in the Lease Areas Marine mammal expert, E-TWG specialist; Member of RWSE planning group.	Phone: 857-310-8616 Email: LAURM@orsted.com

Brita Woeck **Avian Lead and Environmental Manager**	Receive, process, and disseminate scientific data collected in the relevant Lease Area(s) Lead on avian topics; E-TWG specialist	Phone: 857-348-3274 Email: BRIWO@orsted.com
Gregory DeCelles **Fisheries Science Specialist**	Receive, process, and disseminate scientific data collected in the relevant Lease Area(s) Member of the ROSA Advisory Council and Interim Fisheries Methods Working Group	Phone: 857-408-4497 Email: GREDE@orsted.com
Jennifer Garvey **Development Manager**	New York stakeholder manager	Phone: 857-348-3258 Email: JEGAR@orsted.com
John O'Keeffe **Head of Marine Affairs**	Head for marine stakeholder communications and fisheries department; F-TWG attendee	Phone: 857-332-4485 Email: JOHNO@orsted.com
Rodney Avila **Corporate Fisheries Liaison**	Collect data about the structure of fishing communities associated with the Project Area.	Phone: 857-332-4479 Email: RODAV@orsted.com

Project website: https://sunrisewindny.com/

2.3. Identification of stakeholders

This section should describe the process by which stakeholders relevant to environmental issues will be identified and classified by stakeholder group.

- Sunrise Wind is continuing to work on its engagement and consultation strategy. In developing a consultation and stakeholder strategy, Sunrise Wind has taken into account the following essential requirements:
    - the groups and individuals interested in or affected by the proposed development are identified;
    - Information issued to the public and consultees is accurate, understandable, issued at the appropriate time and does not overwhelm recipients;
    - Dialogue is held between those affected by the decisions and those responsible for making the decisions;
    - The comments provided by the public and consultees are incorporated within the final decision-making process and final decision;
    - Feedback is provided to all consultees, including the public, explaining the actions taken and how the final decision has been influenced by the process.
- Sunrise Wind has and will continue to identify stakeholders based on a detailed and overarching approach to assessing all those interested parties including information collected from the following areas:

- Commissioned studies that identify federal, state, and local permits, approvals, and consultations required for the Project;
- List of potential agencies and associated authorizations required for the Project;
- NYSERDA's recommendations;
- E-TWG and F-TWG recommendations;
- Attendees of Project open house events;
- Interest groups of potentially impacted resources;
- Recommendations provided at local community meetings;
- Prior experience during outreach for the South Fork Wind Farm Project;

2.4. Participation in stakeholder and technical working groups

2.4.1. Communication with E-TWG

This should describe the communication and collaboration approach with members of the E-TWG and consultations.

- Sunrise Wind and its affiliates have been active participants in the E-TWG and associated work groups since their inception.
- Ørsted's Laura Morse, a representative for Sunrise Wind and its affiliates, has actively participated in the organizing committees for the 2018 and 2020 State of the Science workshop, and Ørsted's Sophie Hartfield Lewis was a keynote speaker in 2018 and Ørsted's Madeline Hodge will participate in a panel on cumulative impacts in 2020.
- Sunrise Wind has dedicated Project-specific resources to the E-TWG, Liz Gowell and Michael Evans.
- Sunrise Wind has dedicated specialists contributing to the Specialist Committees, including Laura Morse on the Marine Mammal and Sea Turtle Specialist Committee and Brita Woeck on the Bird and Bat Specialist Committee.
- Sunrise Wind will continue working with the E-TWG and attend future meetings and workshops. Specifically, Sunrise Wind will participate and engage relevant stakeholders participating in the E-TWG pursuant to Section 12.04 of the OREC Agreement.

2.4.2. Communication with other New York State agencies

This should describe communication with New York State agencies during each phase of the project.

- Sunrise Wind has hosted inter-agency Project kick-off meetings with federal and New York state regulators, and federally recognized tribes. The meetings introduced the Project and team and key components.
- Sunrise Wind has hosted and will continue to host Project update meetings with federal and New York state regulators, and federally recognized tribes to provide status updates on Project activities and design.
- Sunrise Wind will continue to consult with the Consulting New York State Agencies at the request of such agencies to provide status updates on planned Project activities (i.e. field surveys, siting, etc.) and to solicit feedback.

- Sunrise Wind will continue to consult with the Consulting New York State Agencies pursuant to Section 12.03 of the OREC Agreement.

2.4.3. Communication with other stakeholder and working groups

This should describe any relevant participation with other stakeholder groups, such as international fisheries groups that would help inform the EMP.

- Sunrise Wind has developed a Community Outreach Plan for the Project to identify and engage various interests including local communities, environmental groups, fishing communities, recreational boating groups, low income populations, and labor and local business interest.
- In development of the Community Outreach Plan, Sunrise Wind has and will continue to leverage its affiliates' experience implementing successful community outreach and engagement plans for many offshore wind projects in the US, Europe, and Asia.
- Sunrise Wind has developed a Project Involvement Plan specifically for outreach to communities on Long Island where the onshore portions of the Project will be located.

2.5. Communication methods and tools by phase

This section should describe the communication and outreach methods and tools that will be employed for each stakeholder group during each phase of the project.

- Sunrise Wind will continually refine its Community Outreach Plan during each phase of the Project, subject to applicable permitting requirements.

Proposed Outreach Methods/Tools	Phase*			
	1	2	3	4
Outreach to local communities through informational meetings	X	X	X	X
Press releases	X	X	X	X
Website promotion	X	X	X	X
Social media	X	X	X	X
Notice to Mariners	X	X	X	X
**Phase: 1: Survey/Design; 2: Construction; 3: Operation; 4: Decommissioning*				

3. Supporting Other Research

3.1. Support of collaborative research

This section should describe how opportunities for developing or investing in collaborative research with the environmental industry to collect ecological data will be identified and undertaken. The description must account for the need to coordinate with members of the E-TWG during data gathering and assessment.

- Sunrise Wind is committed to supporting third party research associated with development of the Project and intends to take a collaborative approach to science. Sunrise Wind has committed to providing funds to support third party research as outlined in Section 3.5.
- Sunrise Wind will engage with the E-TWG, in accordance with Section 12.04 of the OREC Agreement, regarding potential research topics, scopes and methodologies.
- Sunrise Wind and its affiliates support, and Ørsted's Gregory DeCelles is actively involved in, the Responsible Offshore Science Alliance (ROSA), which establishes science priorities collaboratively with agencies and the fishing industry and maximizes the value of the investment spent on fisheries science.
- Sunrise Wind is employing a Science Coordinator to facilitate reasonable requests for data and other forms of participation in science initiatives designed to enhance understanding of impacts from offshore wind.

3.2. Handing/processing requests

This section should describe how requests for coordination with third-party supported scientists will be processed - including providing reasonably-requested Project data and access to the Project area for independent scientists examining environmental and fishery sensitivities and/or the impacts of offshore wind energy development on fish, invertebrates and fisheries for the purpose of publication in peer reviewed journals.

- Sunrise Wind will employ a designated Science Coordinator to receive, process and collaborate on requests for Project data.
- Sunrise Wind will establish a workspace to coordinate and facilitate data sharing.
- Sunrise Wind will coordinate with non-Project vessels, including research vessels, for independent scientists to examine any environmental sensitivities as a result of the Project.

3.3. Data availability

This section should describe how data will be made available in accordance with Section 2.2.5 of the RFP.

- Sunrise Wind will make environmental data available in accordance with Section 12.07 of the OREC Agreement which implements Section 2.2.5 of the RFP.
- Sunrise Wind will set up a data portal or similar data sharing website. This site will provide information on available non-proprietary data that is either publicly available or available

upon request. This portal is intended to integrate with existing platforms (including Northeastern Regional Association of Coastal Ocean Observing System [NERACOOS], Southeast Coastal Ocean Observing Regional Association [SERACOOS], Mid-Atlantic Coastal Ocean Observing System [MARACOOS], Northeast Regional Ocean Council [NROC], and Mid-Atlantic Ocean Data Portal [MARCO]) and will serve as :
    - A central guide to available Sunrise Wind environmental data
    - A link to portals/website where data is visualized live
    - A link to available and archived data sets or a link to request access to available data
- Sunrise Wind will use meta-data standards, where they are established, set by NOAA and NCEI for met/ocean data and biological data (https://www.ncei.noaa.gov/resources/metadata).
- Sunrise Wind will engage with U.S. Integrated Ocean Observing System (IOOS), NERACOOS, NROC and trust agencies to address any meta-data gaps and ensure future consistency of environmental data collection.
- Sunrise Wind will coordinate with NERACOOS to make available any non -proprietary data from met-ocean instruments (e.g. FLIDAR) in near real-time once deployed for use by mariners as well as the National Weather Service for forecast modelling as applicable.
- Sunrise Wind participated in a joint Regional Ocean Observing Systems (NERACOOS/MARACOOS) and Ocean Data Portals (NROC/MARCO) Coordination of data platforms webinar on October 2, 2020.

3.4. Proposed restrictions

This section should describe any restrictions on data provision or access that may be required to protect trade secrets or maintain site security.

- Sunrise Wind will use a 3rd party Science Coordinator who will in coordination with Sunrise Wind staff consider and, as appropriate, implement, any restrictions on data provision or access that Sunrise Wind believes may be required to protect trade secrets or maintain site security as part of that process.

3.5. Financial commitment for third party research

This section should provide a level of financial commitment, if elected, that will be appropriated to leverage third-party environmental research funding related to fish, invertebrates and fisheries, including federal or State-supported research. Or, if elected, provide the level of commitment to a general fund for supporting third-party research into relevant fish and invertebrate communities and associated commercial and recreational fisheries and the effects of offshore wind energy development.

- Sunrise Wind has made commitments to third-party environmental research funding for marine mammals and fisheries concerns. The details of these commitments are being finalized and will be announced at a future date.

- Sunrise Wind and its affiliates have provided funding for 10 Vemco VR16-4H tags to the University of Massachusetts Dartmouth to support telemetry research at Cox Ledge.

3.6. Proposed or existing commitments/collaborations

This section should describe proposed or existing commitments and collaborations with third-party researchers in support of monitoring activities and assessing impacts.

- Sunrise Wind and its affiliates have agreed to sharing available PSO data collected to date with New England Aquarium and NMFS GARFO for analysis funded by the Marine Mammal Commission. This data will be compared to ongoing aerial surveys conducted by New England Aquarium in the RI-MA-WEA and MA-WEA.
- Sunrise Wind's affiliates have presented some summary PSO data results and data collection methods, including data collected during geophysical and geotechnical surveys for Sunrise Wind, at the 2019 World Marine Mammal Conference, including:
    - Steckler et al., 2019: New Technology Instantly Shares Sightings to Prevent Vessel Strikes.
    - Smultea et al., 2019: Review of Night Vision Technologies for Detecting Cetaceans from Vessels at Sea
    - Smultea LLC is drafting a paper for publication with a more detailed review of thermal camera systems used during Geophysical and Geotechnical surveys and based on Orsted PSO data including Sunrise Wind data.
- Sunrise Wind and its affiliates will continue to voluntarily report any and all North Atlantic Right whales and maintain ongoing engagement with WhaleAlert, New England Aquarium (NEAQ), and NMFS GARFO and Northeast Fisheries Science Center (NEFSC) to enhance and improve on real-time sharing of information across multiple data platforms.
- Orsted's Ocean Wind project recently launched the ECO-PAM project (https://orsted-eco-pam-web-portal.srv.axds.co/). The project includes deployment of a buoy (the Martha's Vineyard Buoy) in the vicinity of the Sunrise Wind project and near real-time sightings from the buoy are directly fed to the Mysticetus data entry platform for PSOs' awareness. Currently all active real-time passive acoustic sensors (5) south of Cape Cod are funded by offshore wind developers: http://dcs.whoi.edu/.
- Sunrise Wind is developing site-specific studies which would examine fisheries and benthic resource topics, such as larval distributions, benthic habitat quality, distribution of nonindigenous/invasive species, and distribution and abundance of selected commercially and recreationally important fisheries species within the region of influence of the Project. The studies would be developed around clear research questions and testable hypotheses. The analytical methods and the data analyses will be clearly stated in the monitoring plan.
- To the extent practicable, Sunrise Wind will aim to employ techniques that integrate with ongoing data collection efforts and will consider having spatial and temporal overlap with existing surveys when possible.
- To the extent practicable, Sunrise Wind will strive to coordinate with fisheries monitoring being carried out by other developers.

- Sunrise Wind will coordinate with non-Project vessels, including research vessels, for independent scientists to examine fishery sensitivities and other environmental topics.
- Sunrise Wind will use commercial fishing vessels for the research it conducts whenever feasible, available, and appropriate.
- Sunrise Wind and its affiliates are developing additional commitments and collaborations with third-party researchers which will be announced when details of the collaborations are finalized.
- Sunrise Wind and its affiliates will share some results of monitoring completed for the Block Island Wind Farm at a future E-TWG meeting in 2021.

4. Proposed Mitigation of Impacts to Marine Mammals and Sea Turtles

4.1. Baseline characterization

4.1.1. Available information

Describe existing literature and datasets that are available for baseline characterization.

- Studies are available to assess the baseline characteristics for marine mammals and sea turtles potentially occurring within the Project Area. Such studies include, but are not limited to, the following documents. The full list of data sources used for baseline characterization is located in the Sunrise Wind Construction and Operations Plan (COP).
- NYSERDA and/or NYSDEC studies on marine wildlife and whales, including:
    - New York State Department of Environmental Conservation (NYSDEC). 2015. List of Endangered, Threatened and Special Concern Fish & Wildlife Species of New York State. Accessed July 2020.
    - New York State Department of Environmental Conservation (NYSDEC). 2020. Seagrass Management. Accessed June 2020.
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  - http://seamap.env.duke.edu/resources/dsm/references/USECGOM/AFTT_Update_2017_2018_Final_Report_v1.2_excerpt.pdf
- Other state and regional studies on marine mammals and sea turtles, including:
  - Coastal Research and Education Society of Long Island, Inc. (CRESLI). 2020. CRESLI Seal Research. Accessed August 2020.
  - https://www.cresli.org/common/news/articles/article_detail.cfm?QID=10936&clientID=12000&topicID=0&subsection=sidebar%20/.
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- Special Area Management Plan Technical Report #10. pp 337.Sunrise Wind will comply with BOEM's site characterization requirements in 30 CFR § 585.626(3).

4.1.2. Data being collected

Describe data collected, or will be collected, to support baseline characterization.

- Sunrise Wind will continue to conduct appropriate site assessment surveys to establish baseline conditions of wildlife within the Project Area.
- The surveys conducted by Sunrise Wind to support baseline characterization have included and will continue to include PSO sightings data derived from HRG and geotechnical surveys conducted in the Project Area.
- Sunrise Wind will rely on baseline data from NYSERDA's 3-year fine scale aerial survey of marine wildlife as well as the existing literature and datasets described in Section 4.1.1, and other published scientific literature.
- Sunrise Wind has completed a Project-specific Marine Mammal, Sea Turtle, and ESA-Listed Fish Assessment and a comprehensive underwater acoustic assessment to include modeling in support of evaluation of potential impacts due to noise generated during construction of the Project.
- Sunrise Wind will apply best available marine mammal densities as provided by the Duke University MDAT project.

4.1.3. Additional data being collected to address data gaps

Describe additional data that will be collected, to support baseline characterization to address data gaps.

- Sunrise Wind will continue to collect PSO sightings data derived from HRG and geotechnical surveys conducted in the relevant Lease Area(s).Sunrise Wind is considering development of potential study topics following a review of the literature on existing offshore wind farms (including the baseline materials described), regional and local stakeholder concerns, and data gaps identified by resource managers in the Project Area and vicinity. Need for additional data collection will be determined through coordination with the jurisdictional federal and state agencies through the permitting process.
- Sunrise Wind will support funding for collection of data related to the impact of noise on communication of marine and terrestrial animals for baseline characterization and impacts analysis. The details of this funding will be announced at a later date.

4.2. Species at risk

Describe which species the Proposer believes to be of greatest concern and why.

- Sunrise Wind believes, of all the marine mammals and sea turtle species that have the potential to occur within the Project Area, the five ESA-listed whales and the four ESA-listed sea turtles are of greatest concern because of their currently low population status.
- Sunrise Wind notes that 36 marine mammal species (cetaceans and pinnipeds) and five sea turtle species are known to occur within the north Atlantic OCS region. All 36 marine mammal species are protected by the Marine Mammal Protection Act (MMPA), and some

are additionally protected by the Endangered Species Act (ESA). All of the identified sea turtle species are protected by the ESA.

- Sunrise Wind identified 14 MMPA protected species considered to have regular or common occurrence in the waters surrounding the Project area, at least seasonally:
    - harbor porpoise (*Phocoena phocoena*),
    - Atlantic white-sided dolphin (*Lagenorhynchus acutus*),
    - Atlantic spotted dolphin (*Stenella frontalis*),
    - short-beaked common dolphin (*Delphinus delphis*),
    - bottlenose dolphin (*Tursiops truncatus*),
    - long-finned pilot whale (*Globicephala melas*),
    - humpback whale (*Megaptera novaeangliae*),
    - fin whale (*Balaenoptera physalus*),
    - North Atlantic right whale (*Eubalaena glacialis*),
    - sei whale (*Balaenoptera borealis*),
    - minke whale (*Balaenoptera acutorostrata*),
    - sperm whale (*Physeter catodon*),
    - harbor seal (*Phoca vitulina*), and
    - gray seal (*Halichoerus grypus*).
- Sunrise Wind identified five ESA-listed whale species known to occur within the waters of the north Atlantic OCS region:
    - North Atlantic right whale (*Eubalaena glacialis*),
    - blue whale (*Balaenoptera musculus*),
    - fin whale (*Balaenoptera physalus*),
    - sei whale (*Balaenoptera borealis*), and
    - sperm whale (*Physeter macrocephalus*)
- Sunrise Wind identified four ESA-listed sea turtle species that are considered possible to occur in the Project area:
    - Leatherback (most likely to be encountered in the waters surrounding the Lease Area and export cable);
    - Loggerhead (most likely to occur in the nearshore water surrounding the Lease Area and export cable during summer and fall);
    - Atlantic (Kemp's) ridley (documented presence in nearshore waters during summer and fall); and
    - green sea turtle (documented presence around seagrass beds in nearshore waters during the summer and fall, however, considered to be uncommon).
- The presence and/or absence of marine mammals within these waters can be affected by a variety of parameters including water temperature, movements or availability of prey, and human presence or disturbance.

4.3. Potential impacts/risks and mitigation measures by project stage

The table below should list the potential impacts to marine mammals and sea turtles and proposed mitigation measures. To this end, a description of proposed measures to minimize the impacts of sound on marine mammals and sea turtles during all phases of Project development should be included. In addition, provide a description of the anticipated pre- and post-construction survey techniques to establish an ecological baseline and changes to that baseline within the Project site; the minimum size of exclusion zone intended to be monitored during geophysical surveys and construction; planned approaches to understanding marine mammal and sea turtle presence and absence within the development site exclusion zone during site assessment and construction (e.g., a combination of visual monitoring by protected species observers and passive acoustic monitoring, the use of night vision and infra-red cameras during nighttime activities, etc.); proposed temporal constraints on construction activities and geophysical surveys with noise levels that could cause injury or harassment in marine mammals (e.g., seasonal restrictions during periods of heightened vulnerability for priority species; commencing activities during daylight hours and good visibility conditions, dynamic adjustments following the detection of a marine mammal); and proposed equipment and technologies the Proposer would use to reduce the amount of sound at the source, if any.

Potential Impacts	Proposed Mitigation Measures[1]	Phase*			
		1	2	3	4

Underwater noise impacts from geophysical survey equipment	• Exclusion and monitoring zones for marine mammals and sea turtles during all site assessment surveys, including:
	  ○ A 1,640-foot (ft) (500-meter [m]) separation distance for the North Atlantic right whale and a 328-ft (100-m) separation distance for all other marine mammal species and sea turtles.
	  ○ Pre-clearance of exclusion zones as defined by NOAA Fisheries
	  ○ Ramp-up and shut-down procedures
	• A visual monitoring program conducted by NOAA Fisheries-approved PSOs
	• Environmental training for all vessel personnel regarding animal identification and protocol when sightings occur
	• Require Project vessels to comply with NOAA ship speed regulations and BOEM lease conditions specific to vessel speeds
	• Tow passive acoustic monitoring equipment (PAM) during geophysical surveys, pursuant to regulatory concurrence for current approved surveys** Use of night vision binoculars and infrared technology during period of poor visibility
		X	X	X	

[1] All proposed mitigation measures are subject to applicable regulatory processes and applicable permit requirements. This list of proposed mitigation measures is a good faith statement of currently anticipated mitigation measures. Actual mitigation measures will be pursuant to applicable permits and may vary from this list.

Underwater noise impacts from construction and installation activities	• The Project will implement the following mitigation measures, pursuant to ongoing dialogue with BOEM and NOAA Fisheries. Each of these methods and tools has been successfully applied by Orsted, Sunrise Wind, and/or its affiliates in support of geophysical surveys and/or the construction and operation of offshore wind projects across the globe. A protected species mitigation and monitoring plan (PSMMP) will be developed in phases and will describe these measures and will be included within the Incidental Harassment Authorization (IHA) and further expanded as for the COP: ○ Exclusion and monitoring zones ○ Ramp-up/soft-start procedures ○ Shutdown procedures (if technically feasible) ○ Qualified and NOAA Fisheries-approved protected species observers (PSOs) ○ Noise attenuation technologies ○ Passive Acoustic Monitoring systems (fixed and mobile) ○ Reduced visibility monitoring tools/technologies (e.g., night vision, infrared and/or thermal cameras) ○ Adaptive vessel speed reductions ○ Utilization of software to share visual and acoustic detection data between platforms in real time. • Use of passive acoustic monitoring equipment (PAM) to measure the sound field during foundation installation, pursuant to regulatory concurrence • Committed to noise attenuation technologies to reduce sound from pile driving of foundations, pursuant to regulatory concurrence • Will evaluate attenuation of noise from a range of methods and will assess their effectiveness, commercial viability, safety risk, and practicability • Has conducted an underwater acoustic assessment in support of evaluation of potential impacts to marine mammals due to noise generated during construction and operation of the Project, particularly with		X		

	regard to pile driving activities. The assessment followed NOAA Fisheries' 2018 revised Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (NOAA Construction and Operations Plan Fisheries 2018a) and NOAA Fisheries' Greater Atlantic Regional Fisheries Office tool for assessing the potential effects to ESA-listed fish and sea turtles exposed to elevated levels of underwater sound from pile driving. Potential zones of influence described in this assessment will be reflected in the proposed mitigation measures in the mitigation and monitoring plan.				

Vessel strikes on marine mammals and sea turtles	• Provide training for all vessel personnel regarding animal identification and protocol when sightings occur
	• Training for personnel onboard Project vessels will include marine mammal sighting and reporting that will stress individual responsibility for marine mammal awareness and protection.
	• Use of trained Protected Species Observers (PSOs) as required by the Project-specific Protected Species Mitigation and Monitoring Plan (PSMMP)
	• Require Project vessels to comply with NOAA ship speed regulations and BOEM lease conditions specific to vessel speeds:
	  ○ 10 knots for vessels 65 ft (19.8 m) or greater during the period of November 1 through April 30.
	  ○ 10 knot (<18.5 km per hour [km/h]) speed restrictions in any Dynamic Management Area (DMA)
	Or will implement alternative mitigation measures pursuant to engagement with BOEM and NOAA Fisheries
	• Require operational automatic identification system (AIS) on all vessels associated with the construction, O&M, and decommissioning of the Project, pursuant to USCG and AIS carriage requirements. AIS will be used to monitor the number of vessels and traffic patterns for analysis and compliance with vessel speed requirements.
	• Adhere to NOAA Fisheries Operational Guidelines when in sight of marine mammals (NOAA Fisheries & NOS 2013), unless doing so would compromise human or environmental health and safety of Project personnel
	• Adhere to NOAA Fisheries' Vessel Strike Avoidance Measures and Reporting for Mariners (NOAA Fisheries 2008).
	• Support the Whale Alert network to enhance awareness of and reduce the risk of ship
			X	X	X

	strikes in the maritime community (http://www.whalealert.org/)				
Direct or indirect effects from changes in water quality due to contamination or spills	• Require all construction and O&M vessels to 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.			X	X
Indirect or direct impacts from EMF during operation	• Cable shielding as well as cable burial, where feasible, will limit EMF exposure.			X	
Phase: 1: Survey/Design; 2: Construction; 3: Operation; 4: Decommissioning* * NOAA Fisheries has determined, and best available science supports, that for towed-PAM, its utility in further reducing impact for Orsted's HRG activities is very limited and that the proximity to propeller noise and low frequency engine noise can mask the low frequency sounds emitted by baleen whales, including right whales.*					

4.4. Monitor for impacts during each phase

Describe how potential impacts will be monitored on these types wildlife during each phase of physical work for the Project (site assessment, construction, operation, and decommissioning) to inform mitigation planning for later phases of the Project as well as for future Projects.

4.4.1. Pre/Post Monitoring to assess and quantify changes

Describe how changes to environmental resources will be quantified using statistically sound methods

- Sunrise Wind is considering development of study topics and methodologies for pre- and post-construction monitoring of marine mammals and sea turtles. A decision to undertake pre- during and post-construction monitoring would be based on requirements from federal and state agencies. Sunrise Wind proposes to undertake a strategic process to develop methodologies and study topics, based on requirements from federal and state agencies, and utilizing a scientific advisory committee composed of technical experts, to provide objective scientific guidance for Project consideration. The final plans would be subject to additional review and input by federal and state parties during the regulatory review processes for the Project.
- Sunrise Wind will evaluate other technologies to support adaptive mitigation and monitoring to increase Project flexibility through enhanced situational awareness, including:

- autonomous real time marine mammal acoustic detectors (i.e., buoys and gliders); and
- real time marine mammal sightings data software/platform to share data.

4.4.2. Address data gaps

Describe how data gaps will be addressed.

- Sunrise Wind will work with stakeholders, including regulatory agencies and local groups, in the design phase of the Project to identify data gaps to be addressed through surveys or permitting applications.
- Sunrise Wind will work with regulatory agencies when developing the monitoring and mitigation plan in an effort to address existing data gaps through pre- and post-construction monitoring in accordance with applicable permit requirements.

4.5. Strategies for developing alternate protocols

Describe the process for determining when mitigation strategies are insufficient and under what conditions they might elect to rehabilitate or restore impacted marine mammals and sea turtles in an alternative location.

- Sunrise Wind will work with federal and state agencies to determine appropriate and practicable marine wildlife monitoring and mitigation methods during the construction, operation, and decommissioning phases of the Project.
- Sunrise Wind will continue to engage with BOEM, NOAA Fisheries, USFWS, and other stakeholders to identify and implement appropriate and practicable measures to avoid, minimize, and/or mitigate impacts throughout all phases of the Project as required by applicable permits.
- Following identification of potential impacts, Sunrise Wind will work with regulators to establish processes for evaluating the effectiveness of selected mitigation strategies. Additionally, it will coordinate with federal and state agencies to identify additional mitigation strategies or potential modifications to selected mitigation measures that may be implemented in the event the base mitigation strategies are determined to be insufficient by relevant regulatory agencies.

5. Proposed Mitigation of Impacts to Birds and Bats

5.1. Baseline characterization

Describe how baseline data will be established on the presence of bird and bat assemblages, temporal and spatial use of the site by key species within the area of the proposed Project.

5.1.1. Available information

Describe existing literature and datasets that are available for baseline characterization.

- Studies are available to assess the baseline characteristics for birds and bats potentially occurring within the Project Area. Such studies include, but are not limited to, the following documents. The full list of data sources used for baseline characterization is located in the Sunrise Wind COP.
    - NYSERDA and/or NYSDEC studies on marine wildlife and birds and bats;
        - Jennings, K. 2018. Presentation: 2018 Long Island Colonial Waterbird & Piping Plover Update. Harbor Herons & Other Waterbirds of the Greater NY/NJ Harbor Working Group (December 11, 2018). Prepared by New York State Department of Environmental Conservation.
        - NYSERDA. 2017. New York State Offshore Wind Master Plan: Birds and Bats Study. NYSERDA Report 17-25q.
            - https://www.nyserda.ny.gov/All-Programs/Programs/Offshore-Wind/About-Offshore-Wind/Master-Plan
        - NYSERDA. 2017. New York State Offshore Wind Master Plan: Cable Landfall Permitting Study. NYSERDA Report 17-25q.
            - https://www.nyserda.ny.gov/All%20Programs/Programs/Offshore%20Wind/About%20Offshore%20Wind/Master%20Plan
        - Normandeau and APEM. 2019. Remote Marine and Onshore Technology Digital Aerial Baseline Survey of Marine Wildlife in Support of Offshore Wind Energy. Prepared for New York State Energy Research and Development Authority.
            - https://remote.normandeau.com/portal_data.php?pj=6&public=1
    - BOEM and USFWS studies on marine species, seabirds, and bats;
        - Dowling, Z., P.R. Sievert, E. Baldwin, L. Johnson, S. von Oettingen, and J. Reichard. 2017. Flight Activity and Offshore Movements of Nano-Tagged Bats on Martha's Vineyard, MA. OCS Study BOEM 2017-054. U.S. Department of the Interior, Bureau of Ocean Energy Management, Sterling, VA. 39 pp.
        - Johnson, J.A., J. Storrer, K. Fahy, and B. Reitherman. 2011. Determining the Potential Effects of Artificial Lighting From Pacific Outer Continental Shelf (POCS) Region Oil and Gas Facilities on Migrating Birds. OCS Study BOEMRE2011-047. US Department of the Interior, Bureau of Ocean Energy Management, Regulations and Enforcement, Camarillo, CA, 20+ pp.
        - Loring, P.H., J.D. McLaren, P.A. Smith, L.J. Niles, S L. Koch, H.F. Goyert, H. Bai. 2018. Tracking movements of threatened migratory rufa Red Knots in U.S. Atlantic Outer Continental Shelf Waters. Sterling (VA): US Department of the

Interior, Bureau of Ocean Energy Management. OCS Study BOEM 2018-046. 145 p.

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- Published data of bats in offshore and nearshore environments:
  - Cryan, P.M. and A.C. Brown. 2007. Migration of bats past a remote island of fers clues toward the problem of bat fatalities at wind turbines. Biological Conservation 139:1-11.Hatch, S.K., E.E. Connelly, T.J. Divoll, I.J. Stenhouse, and K.A. Williams. 2013. Offshore observations of eastern red bats (Lasiurus borealis) in the Mid-Atlantic United States using multiple survey methods. PLoS ONE 8: e83803.
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  - Stantec. 2018. Long Island Roost Study: Northern Long-eared Bats. Prepared for Cassadaga Wind LLC. August 22, 2018. 21 pp + appendices.
- Agency coordination and communication:.
  - USFWS. 2020. Information for Planning and Consultation, Letter Re: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project. March 11, 2020.New York Natural Heritage Program (NYNHP). 2020. Letter, Re: Sunrise Offshore Wind Farm. March 27, 2020.

5.1.2. Data collected

Describe data collected, or will be collected, to support baseline characterization.

- Sunrise Wind will continue to conduct appropriate site assessment surveys to establish baseline conditions of wildlife within the Project Area. The surveys conducted by Sunrise Wind or its affiliates to support baseline characterization of birds and bats include:
  - Biodiversity Research Institute (BRI). 2018. Assessment of the Potential Effects of the Bay State Wind Offshore Wind Farm on Birds: Lease Area OCS-A 0500. Report to Tetra Tech Inc. Biodiversity Research Institute, Portland, ME. 229 pp.
- 10 offshore avian boat-based surveys (conducted every 2 weeks) of a relevant Lease Area between June and October 2017 in an effort to fill a data gap for roseate terns. Over 6,500 birds from 31 species were observed in the Lease Area. Two common terns (*Sterna hirundo*) and one unidentified tern were observed, however no roseate terns were observed.
  - Bay State Wind. 2019. Construction and Operations Plan, Volume II: Site Characterization and Assessment of Impact-Producing Factors and List of References. Submitted to BOEM March 15, 2019, Revised June 28, 2019.
  - Stantec Consulting Services Inc. (Stantec) 2016. Vessel-based Acoustic Bat Monitoring: Block Island Wind Farm, Rhode Island. Prepared for: Deepwater Wind Block Island, LLC. October 5, 2016.
  - Stantec. 2018. Vessel-based Acoustic Bat Monitoring: South Fork Wind Farm and South Fork Export Cable. Prepared for: Deepwater Wind Block Island, LLC. March 19, 2018.

  - Stantec. 2018. 2017 Acoustic Monitoring: Block Island Wind Farm, Rhode Island. Prepared for: Deepwater Wind Block Island, LLC. March 19, 2018.
  - Stantec. 2019. Draft Seacor Supporter Vessel-Based Acoustic Bat Monitoring. South Fork Wind Farm. Prepared for Deepwater Wind South Fork, LLC.
  - Stantec. 2019. Draft Fugro Discovery Vessel-Based Acoustic Bat Monitoring. South Fork Wind Farm. Prepared for Deepwater Wind South Fork, LLC.
  - Stantec. 2019. Draft Conti Vessel-Based Acoustic Bat Monitoring. South Fork Wind Farm. Prepared for Deepwater Wind South Fork, LLC.
  - Stantec. 2020. Draft Fugro Discovery Vessel-based Acoustic Bat Survey Sunrise Wind Farm. Prepared for Sunrise Wind LLC.
  - Stantec. 2020. Draft 2019 Fugro Discovery Vessel-based Acoustic Bat Survey Revolution Wind Farm. Prepared for Revolution Wind, LLC.
  - Stantec. 2020. Draft Fugro Enterprise and Fugro Searcher Vessel-Based Acoustic Bat Survey Sunrise Wind Farm. Prepared for Sunrise Wind LLC.
- Sunrise Wind will also rely on baseline data from NYSERDA's aerial baseline survey of the NY Offshore Planning Area as well as the existing literature and datasets described in Section 5.1.1, and other published scientific literature.
- Sunrise Wind has completed a Project-specific Avian and Bat Risk Assessment to evaluate Project construction and operations and maintenance impacts on avian and bat species.
- Sunrise Wind may conduct additional avian surveys within New York state nearshore waters, including nesting bird surveys along the landing location on Long Island, pending consultation with state and federal wildlife agencies and applicable permit requirements.
- Sunrise Wind will conduct bat surveys for the onshore areas of the Project, if appropriate, pending consultation with state and federal wildlife agencies and applicable permit requirements.

5.1.3. Additional data being collected to address data gaps

Describe additional data collected that will be collected, to support baseline characterization to address data gaps.

- Sunrise Wind may conduct additional avian surveys to be conducted onshore, including nesting bird surveys along the landing location on Long Island, pending consultation with state and federal wildlife agencies and applicable permit requirements.
- Sunrise Wind will conduct a pre-construction bat survey for the onshore areas of the Project, if appropriate, pending consultation with state and federal wildlife agencies and applicable permit requirements.
- Sunrise Wind has completed a pre-construction avian and bat risk assessment to assess construction and operation impacts. Baseline data for the assessment included, but was not limited to, data sources described in Section 5.1.1 and 5.1.2. The avian and bat risk assessment covers:
  - Marine birds (petrels and shearwaters, loons and grebes, gannets, cormorants, sea ducks, skuas and jaegers, kittiwakes and gulls, terns and skimmers, and alcids)

- Coastal birds (shorebirds, waterfowl [geese, bay ducks, dabblers], and wading birds)
- Land birds (raptors and passerines, woodpeckers and game birds)
- Cave-dwelling bats (*Myotis, Perimyotis*, and *Eptesicus species*)
- Migratory tree-roosting bats (*Lasiurus* and *Lasionycteris* species)
- Sunrise Wind is developing a post-construction monitoring plan for the Project (described further in Section 5.4.1) which will identify data gaps unique to the region and Project area that will be addressed through monitoring.

5.2. Species at risk

Describe which species the Proposer believes to be of greatest concern and why.

- Sunrise Wind identified the following ESA-listed bird species at greatest risk/concern:
  - northwestern Atlantic Ocean population of Roseate Tern (only species observed by Veit et al (2016 study in relevant Lease Area(s)));
  - Atlantic Coast population of the piping plover (*Charadrius melodus*); and
  - rufa subspecies of red knot (*Calidris canutus rufa*).
- Sunrise Wind identified the northern long-eared bat, which is listed as threatened by the ESA and NYSDEC, as of greatest concern.
  - Ahlen et al (2009) shows evidence of bats visiting wind farms located relatively close to shore (2.5 to 4.3 mi [4 to 7 km]) in Europe, however, the Project is located 18.9 mi from Martha's Vineyard and 30.5 mi from Montauk, New York.
  - Bat occurrence in offshore waters appears to be relatively low, with highest activity exhibited by migratory tree bat species.
  - Migratory tree bat activity would be limited to migration period (May, August, September).
  - NYSDEC has indicated that Long Island is generally an important area for the northern long-eared bat.
- Sunrise Wind has identified the following avian species to likely be present in the Project Area based on observations made during the Bay State Wind boat-based surveys (BRI 2018), MassCEC aerial surveys (Veit et al. 2016), and NYSERDA survey (Normandeau and APEM 2019):
  - 2 species of loon;
  - 2 species of grebes;
  - 9 species of petrels and shearwaters;
  - 2 species of wading birds;
  - 2 species of swans and geese;
  - 1 species of gannet;
  - 1 species of cormorants;
  - 7 species of ducks
  - 7 species of sea ducks;
  - 2 species of raptors;
  - 11 species of shorebirds and phalaropes;
  - 4 species of skuas and jaegers;

- 10 species of gulls;
- 6 species of terns and skimmers;
- 6 species of auks;
- 1 species of nightjars; and
- 4 species of passerines;

5.3. Potential impacts/risks and mitigation measures by project stage

The table below should list the potential impacts and mitigation measures to understand and minimize the Project's risk to birds and bats. At a minimum this should include the steps the Proposer will pursue to minimize risk to birds and bats (e.g. lighting); and identification of technological approaches to assess impacts or any Proposals for other research or mitigations relating to birds or bats planned or under consideration at this time.

Potential Impacts	Proposed Mitigation Measures[2]	Phase*			
		1	2	3	4
Collision risk to birds and bats	• Wind Turbine Generators (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 given that many seabirds fly below this height • Committed to an indicative layout scenario with Project structures sited in an east-west/north-south oriented grid with 1.15- by 1.15-mi (1- by 1-nm; 1.85- by 1.85-km) spacing that aligns with other proposed adjacent offshore wind projects in the RI-MA WEA and MA WEA. This wide spacing of WTGs may allow avian and bat species to avoid individual WTGs and minimize risk of potential collision. • Sunrise Wind will take measures to reduce perching opportunities at operating turbines, if appropriate based on further consultations with state and federal agencies. • Sunrise Wind will use ADLS or related means (e.g., dimming or shielding) to limit visual impact, pursuant to approval by the FAA and BOEM and commercial and technical feasibility at the time of FDR/FIR approval, and dialogue with stakeholders. In addition to limiting visual impact, reducing lighting will		X	X	

[2] All proposed mitigation measures are subject to applicable regulatory processes and applicable permit requirements. This list of proposed mitigation measures is a good faith statement of currently anticipated mitigation measures. Actual mitigation measures will be pursuant to applicable permits and may vary from this list.

Potential Impacts	Proposed Mitigation Measures[2]	Phase*			
		1	2	3	4
	also reduce the potential for impacts to birds and bats that can be attracted to light sources. • 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 avian and bat species. • The Project onshore cables will not include any overhead utility lines, thus minimizing potential impacts to birds and bats associated with collision with overhead lines. • Sunrise Wind will document any dead (or injured) birds or bats found incidentally on vessels and structures during construction, O&M, and decommissioning and provide an annual report to BOEM and USFWS.				
Displacement of birds and bats from habitat in offshore environment	• Committed to an indicative layout scenario with Project structures sited in an east-west/north-south oriented grid with 1.15- by 1.15-mi (1- by 1-nm; 1.85- by 1.85-km) spacing that aligns with other proposed adjacent offshore wind projects in the RI-MA WEA and MA WEA. This wide spacing of WTGs may reduce risk of barrier effects and/or displacement.			X	
Habitat impacts, including breeding and nesting areas - Birds	• Project has sited onshore facilities and associated work spaces on previously disturbed lands (e.g. roadways, ROWs, developed industrial/commercial areas) to the extent reasonably feasible, thereby minimizing impacts to undisturbed avian habitat. • Onshore vegetation clearance and cable landing activity, where reasonably practicable, will occur outside the breeding or nesting periods. If not reasonably practicable, the area will be surveyed prior to clearance, and Sunrise Wind will work with state and federal agencies to develop construction monitoring and impact minimization plans.		X	X	X

Potential Impacts	Proposed Mitigation Measures[2]	Phase*			
		1	2	3	4
	• The distance of the Project offshore (greater than 15 mi [13 nm, 24.1 km]) avoids coastal and nearshore areas, which are areas that are known to concentrate birds, particularly shorebirds and sea ducks. • An Invasive Species Management Plan will be implemented to manage the spread of invasive plant species that could negatively impact native plants and impact avian habitat. • Accidental spill or release of oils or other hazardous materials will be managed offshore through an Emergency Response Plan /Oil Spill Response Plan and onshore through a Spill Prevention Control and Countermeasure Plan. • Will take measures to reduce perching opportunities (e.g., install anti-perching devices), if appropriate based on further consultations with state and federal agencies.				
Habitat impacts, including breeding and nesting areas - Bats	• Onshore Project facilities are primarily sited within previously disturbed and developed areas (e.g., roadways, ROWs, developed industrial/commercial areas) to the extent feasible, thereby minimizing impacts to undisturbed bat habitat. • The distance of the Project offshore (greater than 15 mi [13 nm, 24.1 km]) avoids coastal and nearshore areas, which are areas where bats typically occur. • Will work with USFWS and NYSDEC and endeavor to employ protection measures for the northern long-eared bat, including: o from November 1 to March 31, no cutting of trees within a quarter mile of a hibernaculum; o from April 1 to October 31, no cutting of known and documented roost trees within five miles of known hibernacula, and no cutting of trees within 150 feet of a documented summer occurrence; and o from April 1 to October 31, no cutting of trees within a quarter mile of a		X	X	X

Potential Impacts	Proposed Mitigation Measures[2]	Phase*			
		1	2	3	4
	hibernaculum unless for protection of human life and property. 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. • An Invasive Species Management Plan will be implemented to manage the spread of invasive plant species that could negatively impact native plants and impact bat habitat. • Accidental spill or release of oils or other hazardous materials will be managed offshore through an Emergency Response Plan /Oil Spill Response Plan and onshore through a Spill Prevention Control and Countermeasure Plan.				
**Phase: 1: Survey/Design; 2: Construction; 3: Operation; 4: Decommission*					

5.4. Monitor for impacts during each phase

Describe how potential impacts will be monitored on these types of wildlife during each phase of physical work for the Project (site assessment, construction, operation, and decommissioning) to inform mitigation planning for later phases of the Project as well as for future Projects.

5.4.1. Pre/Post Monitoring to assess and quantify changes

Describe how changes to environmental resources will be quantified using statistically sound methods

- Sunrise Wind and its affiliates have conducted a pre-construction offshore avian and bat boat-based surveys, which are described in Section 5.1.2.
- Sunrise Wind has completed an avian and bat risk assessment to assess construction and operation impacts, as described in Section 5.1.3.
- Sunrise Wind anticipates additional pre-construction avian surveys to be conducted onshore, including nesting bird surveys at the landing location on Long Island, and surveys for bat species for the onshore portions of the Project, if appropriate, pending consultation with state and federal wildlife agencies and applicable permit requirements.
- Sunrise Wind is developing an avian post-construction monitoring plan for the Project that will summarize the approach to monitoring; describe overarching monitoring goals and objectives; identify the key avian species, priority questions, and data gaps unique to the region and Project area that will be addressed through monitoring; and describe methods and time frames for data collection, analysis, and reporting. Post-construction monitoring will assess impacts of the Project with the purpose of filling select information gaps and supporting validation of the avian risk assessment completed for the Project. Focus may be

placed on improving knowledge of ESA-listed species occurrence and movements offshore, avian collision risk, species/species group displacement, or similar topics. Where possible, monitoring conducted by Sunrise Wind will build on and align with post-construction monitoring conducted by the other Orsted/Eversource offshore wind projects in the Northeast region. Sunrise Wind will engage with state and federal agencies and eNGOs to identify appropriate monitoring options and technologies, and to facilitate acceptance of a final plan.

5.4.2. Address data gaps

Describe how data gaps will be addressed.

- Sunrise Wind will work with stakeholders, including regulatory agencies and local groups, in the design phase of the Project to identify data gaps to be addressed through surveys or permitting applications.
- Sunrise Wind will work with regulatory agencies when developing the monitoring and mitigation plan in an effort to meet existing data gaps through pre- and post-construction monitoring in accordance with applicable permitting requirements.

5.5. Strategies for developing alternate protocols

Describe the process for determining when mitigation strategies are insufficient and under what conditions they might elect to rehabilitate or restore impacted birds and bats in an alternative location.

- Following identification of potential impacts, Sunrise Wind will work with regulators to establish processes for evaluating the effectiveness of selected mitigation strategies. Additionally, it will coordinate with federal and state agencies to identify additional mitigation strategies or potential modifications to selected mitigation measures that may be implemented in the event the base mitigation strategies are determined to be insufficient by relevant regulatory agencies.

6. Proposed Mitigation of Impacts to Fish, Invertebrates, and their Habitats

6.1. Baseline characterization

Describe what is known about the proposed site in terms fish and invertebrate assemblage, and temporal and spatial variations in fish, invertebrates and their habitats at the proposed site. The use of collaborative monitoring models with the fishing community is encouraged to develop trusted baseline data.

6.1.1. Available information

Describe existing literature and datasets that are available for baseline characterization.

- Studies are available to assess the baseline characteristics for fish, invertebrates and their habitats occurring within the Project Area. Such studies include, but are not limited to, the following documents. The full list of data sources used for baseline characterization is located in the Sunrise Wind COP.
    - NYSERDA and/or NYSDEC studies on marine wildlife;
        - New York State Department of Environmental Conservation (NYSDEC). 2008. Coastal Fish & Wildlife Habitat Assessment Form – Carmans River. December 15.
            - https://www.dos.ny.gov/opd/programs/consistency/Habitats/Long Island/Carmans_River.pdf.
        - NYSERDA. 2017a. New York State Offshore Wind Master Plan: Fish and Fisheries Study. NYSERDA Report 17-25q.
            - https://www.nyserda.ny.gov/All-Programs/Programs/Offshore-Wind/About-Offshore-Wind/Master-Plan
    - BOEM studies on marine habitats and lobsters and crabs;
        - Collie, J.S. and J.W. King. 2016. Spatial and Temporal Distributions of Lobsters and Crabs in the Rhode Island Massachusetts Wind Energy Area. U.S. Dept. of the Interior, Bureau of Ocean Energy Management, Atlantic OCS Region, Sterling, Virginia. OCS Study BOEM 2016-073.
    - Guida, V., A. Drohan, H. Welch, J. McHenry, D. Johnson, V. Kentner, J. Brink, D. Timmons, and E. Estela-Gomez. 2017. Habitat Mapping and Assessment of Northeast Wind Energy Areas. Sterling, VA: US Department of the Interior, Bureau of Ocean Energy Management. OCS Study BOEM 2017-088. 312 p.NOAA and Northeast Fisheries Science Center studies and stock assessment reports, including:
        - Cargnelli, L.M., S.J. Griesbach, P.L. Berrien, W.W. Morse, and D.L. Johnson. 1999a. Essential fish habitat source document: Haddock, Melanogrammus aeglefinus, life history and habitat characteristics. NOAA Tech Memo NMFS-NE-128. 31 p.
        - Cargnelli, L.M., S.J. Griesbach, D.B. Packer, P.L. Berrien, D.L. Johnson, and W.W. Morse. 1999b. Essential Fish Habitat Source Document: Pollock,

Pollachius virens, Life History and Habitat Characteristics. NOAA Tech Memo NMFS-NE-131. 38 p.

- Cargnelli, L.M., S.J. Griesbach, D.B. Packer, P.L. Berrien, W.W. Morse, and D.L. Johnson. 1999c. Essential Fish Habitat Source Document: Witch Flounder, Glyptocephalus cynoglossus, Life History and Habitat Characteristics. NOAA Tech Memo NMFS-NE-139. 38 p.
- Cargnelli, L.M., S.J. Griesbach, D.B. Packer, and E. Weissberger. 1999d. NOAA Tech Memo NMFS-NE-142.22 p.
- Cargnelli, L.M., S.J. Griesbach, D.B. Packer, and E. Weissberger. 1999e. Essential Fish Habitat Source Document: Ocean Quahog, Arctica islandica, Life History and Habitat Characteristics. NOAA Tech Memo NMFS-NE-148. 20 p.
- National Oceanic and Atmospheric Administration (NOAA). 2009. Consolidated Atlantic Highly Migratory Species Fishery Management Plan, Amendment 1, Chapter 5.
- National Marine Fisheries Service (NOAA Fisheries). 2017. Amendment 10 to the 2006 Consolidated Atlantic Highly Migratory Species Fishery Management Plan: Essential Fish Habitat. Office of Sustainable Fisheries, Atlantic Highly Migratory Species Management Division. 442 p. Accessed July 2019.
  - https://www.habitat.noaa.gov/application/efhinventory/docs/a10_hms_efh.pdf.
- National Marine Fisheries Service (NOAA Fisheries). 2019. 2019 Stock Assessment and Fishery Evaluation Report for Atlantic Highly Migratory Species.
  - https://www.fisheries.noaa.gov/resource/document/2019-stock-assessment-and-fishery-evaluation-report-atlantic-highly-migratory.
- National Marine Fisheries Service (NOAA Fisheries). 2020a. Essential Fish (EFH) Habitat Mapper. Accessed June 2020.
  - https://www.fisheries.noaa.gov/resource/map/essential-fish-habitat-mapper.
- NOAA Fisheries. 2020. Species Directory. Accessed June 2020.
  - https://www.fisheries.noaa.gov/species-directory
- Northeast Fisheries Science Center (NEFSC). 2016. 61st Northeast Regional Stock Assessment Workshop (61st SAW) Assessment Summary Report. Northeast Fisheries Science Center Reference Document 16-13. 26 p. Accessed June 2020.
  - https://www.nefsc.noaa.gov/publications/crd/crd1613/crd1613.pdf
- Northeast Fisheries Science Center (NEFSC). 2017a. Operational Assessment of 19 Northeast Groundfish Stocks, Updated Through 2016.

Northeast Fisheries Science Center Reference Document 17-17. 259 p. Accessed June 2020.
- https://www.nefsc.noaa.gov/publications/crd/crd1717/.

- Northeast Fisheries Science Center (NEFSC). 2017b. 62nd Northeast Regional Stock Assessment Workshop (62nd SAW) Assessment Report. Northeast Fisheries Science Center Reference Document 17-03. 822 p. Accessed June 2020.
  - https://www.nefsc.noaa.gov/publications/crd/crd1703/.
- Northeast Fisheries Science Center (NEFSC). 2017c. Scup Stock Assessment Update for 2017. Accessed June 2020.
  - https://static1.squarespace.com/static/511cdc7fe4b00307a2628ac6/t/596fb26bc534a5fa937b2c07/1500492396171/5Scup_2017_Assesssment_Update.pdf.
- Northeast Fisheries Science Center (NEFSC). 2017d. 63rd Northeast Regional Stock Assessment Workshop (63rd SAW) Assessment Report. Northeast Fisheries Science Center Reference Document 17-10. 409 p. Accessed June 2020.
  - https://www.nefsc.noaa.gov/publications/crd/crd1710/.
- Northeast Fisheries Science Center (NEFSC). 2018a. 65th Northeast Regional Stock Assessment Workshop (65th SAW) Assessment Summary Report. Northeast Fisheries Science Center Reference Document 18-08. 38 p. Accessed June 2020.
  - https://www.nefsc.noaa.gov/publications/crd/crd1808/.
- Northeast Fisheries Science Center (NEFSC). 2018b. 64th Northeast Regional Stock Assessment Workshop(64th SAW) Assessment Summary Report. Northeast Fisheries Science Center Reference Document 18-03. 27 p. Accessed June 2020.
  - https://www.nefsc.noaa.gov/publications
- Northeast Fisheries Science Center (NEFSC). 2020. Operational assessment of the black sea bass, scup, bluefish, and monkfish stocks, updated through 2018. NEFSC Ref Doc 20-01; 160 p. Available from:
  - http://www.nefsc.noaa.gov/publications/

- Additional state and regional studies and other published data for the waters of the northeast Atlantic related to of offshore wind development:
- Atlantic States Marine Fisheries Commission (ASMFC). 2012. Habitat Addendum IV to Amendment 1 to the Interstate Fishery Management Plan for Atlantic Sturgeon. Accessed July 2020.
  - http://www.asmfc.org/uploads/file/sturgeonHabitatAddendumIV_Sept2012.pdf
- Atlantic States Marine Fisheries Commission (ASMFC). 2017. 2017 Atlantic Sturgeon Benchmark Stock Assessment and Peer Review Report. Accessed July 2020.

    - http://www.asmfc.org/uploads/file//59f8d5ebAtlSturgeonBenchmarkStockAssmt_PeerReviewReport_2017.pdf.
- Atlantic States Marine Fisheries Commission (ASMFC). Species. Accessed July 2020.
    - http://www.asmfc.org/fisheries-management/program-overview
- Atlantic Sturgeon Status Review Team. 2007. Status Review of Atlantic Sturgeon (Acipenser oxyrinchus oxyrinchus). Accessed July 2020.
    - https://www.nao.usace.army.mil/Portals/31/docs/civilworks/JamesRiver/NMFS_Atlantic_sturgeon_status_review_2007.pdf
- Breece, M., Fox, D.A., Dunton, K.J., Frisk, M.G., Jordaan, A., and Oliver, M.J. 2016. Dynamic seascapes predict the marine occurrence of an endangered species. Methods in Ecology and Evolution.
- Collette, B.B. and G. Klein-MacPhee, ed. 2002. Bigelow and Schroeder's Fishes of the Gulf of Maine. 3rd Edition. Washington, DC: Smithsonian Institution Press.
- Dadswell, Michael. 2006. A Review of the Status of Atlantic Sturgeon in Canada, with Comparisons to Populations in the United States and Europe. Fisheries. 31. 218-229. 10.1577/1548-8446(2006)31[218:AROTSO]2.0.CO;2.
- Dimond J. and E. Carrington E. 2007. Temporal variation in the symbiosis and growth of the temperate scleractinian coral Astrangia poculata. Mar Ecol Prog Ser 348:161-172.
- Dunton, Keith J., Adrian Jordaan, Kim A. McKown, David O. Conover, and Michael G. Frisk. 2010. Abundance and distribution of Atlantic sturgeon (*Ascipenser oxyrinchus*) within the Northwest Atlantic Ocean, determined from five fishery-independent surveys. Fishery Bulletin, 108: 450-466.
- Dunton, K.J., Chapman, D., Jordaan, A., Feldheim, K., O'Leary, S.J., McKpwn, K.A., and Frisk, M.G. 2012. Genetic mixed-stock analysis of Atlantic Sturgeon *Ascipenser oxyrinchus oxyrinchus* in a heavily exploited marine habitat indicates the need for routine genetic monitoring. Journal of Fish Biology, 80: 207-217.
- Dunton, Keith J., Adrian Jordaan, David O. Conover, Kim A. McKown, Lisa A. Bonacci, and Michael G. Frisk. 2015. Marine Distribution and Habitat Use of Atlantic Sturgeon in New York Lead to Fisheries Interactions and Bycatch, Marine and Coastal Fisheries: Dynamics, Management, and Ecosystem Science. 7:1, 18-32.
- Gotceitas, V. and J.A. Brown. 1993. Substrate selection by juvenile Atlantic cod (Gadus morhua): effects of predation risk. Oecologia 93: 31-37.
- Greene, J.K., Anderson, M.G., Odell, J., and Steinberg, N., eds. 2010. The Northwest Atlantic Marine Ecoregional Assessment: Species, Habitats and Ecosystems. Phase One. The Nature Conservancy, Eastern U.S. Division, Boston, MA.
- Griswold, C.A. and J. Prezioso. 1981. In-situ observations on reproductive behavior of the long- finned squid, Loligo pealei. Fishery Bulletin 78: 945–947.
- Ingram, E.C., Cerrato, R.M., Dunton, K.J., and Frisk, M.G. 2019. Endangered Atlantic Sturgeon in the New York wind energy area: implications of future development in an offshore wind energy site. Scientific Reports, Nature Research, 9:12432.

- International Commission for the Conservation of Atlantic Tunas (ICCAT). 2014. Report of the 2014 ICCAT East and West Atlantic Skipjack Stock Assessment Meeting. Accessed July 2019.
  - https://www.iccat.int/Documents/Meetings/Docs/2014_SKJ_ASSESS_ENG.pdf.
- International Commission for the Conservation of Atlantic Tunas (ICCAT). 2016a. Report of the 2016 ICCAT North and South Atlantic Albacore Stock Assessment Meeting. Accessed July 2019.
  - https://www.iccat.int/Documents/Meetings/Docs/2016_ALB_REPORT_ENG.pdf
- International Commission for the Conservation of Atlantic Tunas (ICCAT). 2016b. Report of the 2016 ICCAT Yellowfin Tuna Stock Assessment Meeting. Accessed July 2019.
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- Studies that Sunrise Wind and its affiliates have conducted in the Project Area and surrounding waters of the north Atlantic as outlined in Section 6.1.2.Additionally, there are several fishery-independent trawl surveys that have collected information from the Lease Area and surrounding waters which can be used to characterize the baseline for fish and invertebrate communities. For example, there are biannual trawl surveys conducted by the NOAA Northeast Fisheries Science Center and the Northeast Area Monitoring and

Assessment Program (NEAMAP). The New York State Department of Environmental Conservation also conducts a near shore tawl survey from Breezy to Block Island Sound.

6.1.2. Data being collected

Describe data collected, or will be collected, to support baseline characterization.

- Since August 2016, Sunrise Wind and its affiliates have been completing geophysical, geotechnical, and benthic surveys, as well as desktop analyses, to identify areas of sensitive benthic habitat in the Project area in accordance with the relevant BOEM guidelines.
- Sunrise Wind has and will continue to conduct appropriate site assessment surveys to establish baseline conditions of wildlife within the Project Area.
- Sunrise Wind has and will continue to conduct high resolution geophysical surveys (HRG) and geotechnical surveys in the Project Area in accordance with BOEM's *Guidelines for Providing Geophysical, Geotechnical, and Geohazard Information Pursuant to 30 CFR Part 585* (BOEM 2020).
- Sunrise Wind has completed several surveys to characterize the benthic habitat in the Project Area. The survey protocols were reviewed in several rounds and meetings by federal and state agencies, including BOEM, NOAA, NPS, NYSDEC, NYSDOS, NYSERDA, and RI and MA state agencies, and feedback was incorporated into the survey plan. The surveys included:
    - Benthic habitat surveys, consisting of Sediment Profile Imaging (SPI) and Plan View (PV) images throughout the Project area and grab samples in New York State waters, to characterize the benthic habitat in the Lease Area and along the export cable in accordance with BOEM's *Guidelines for Providing Benthic Habitat Survey Information for Renewable Energy Development on the Atlantic Outer Continental Shelf Pursuant to 30 CFR Part 585* (BOEM 2019);
    - A targeted video survey of habitat areas of interest within the Lease Area based on benthic habitat survey results and geophysical survey results; and
    - A submerged aquatic vegetation survey in the intracoastal waterway north of Fire Island.
- Sunrise Wind will complete comprehensive benthic habitat mapping which will integrate the results of the benthic surveys and final geophysical data in accordance with NOAA's *Recommendations for Mapping Fish Habitat* (NOAA's National Marine Fisheries Greater Atlantic Regional Fisheries Office Habitat Conservation and Ecosystem Services Division 2020)
- Sunrise Wind has utilized the benthic survey information collected by affiliates of Sunrise Wind for the South Fork Wind Project, Revolution Wind Project, Bay State Wind Project, and Block Island Wind Farm to provide additional information on the regional benthic environment of the Northwest Atlantic Outer Continental Shelf off Southern New England. These surveys include:

- Bay State Wind LLC. 2019. Construction and Operations Plan, Bay State Offshore Wind Farm. Submitted to Bureau of Ocean Energy Management. Submitted by Bay State Wind LLC. Submitted March 2019, Revised July 2019.
- Deepwater Wind South Fork, LLC. 2019. Construction and Operations Plan, 30 CFR Part 585. Submitted to Bureau of Ocean Energy Management. Submitted by Deepwater Wind South Fork, LLC. Submitted June 2018, Revised September 2018, Revision 2 Submitted May 2019.
- DWW Rev I, LLC. 2020. Construction and Operations Plan, Revolution Wind Farm. Prepared by VHB, Providence, RI. Submitted to the Bureau of Ocean Energy Management, Sterling, VA. March 2020.CoastalVision and Germano & Associates. 2010. Sediment Profile & Plan View Imaging Report: Evaluation of Sediment and Benthos Characteristics along Potential Cable Routes and Turbine Locations for the Proposed Block Island Wind Farm. Report prepared for Deepwater Wind, Providence, RI.

- Sunrise Wind has completed a Project-specific Essential Fish Habitat Assessment that describes the species and life stages with designated EFH that may occur within the Project Area and assesses the potential impacts from construction and operation and maintenance of the Project on EFH.
- Sunrise Wind will incorporate additional data from the Massachusetts Division of Marine Fisheries (MADMF) and other agencies that have proposed conducting regional studies on the impacts of offshore wind development along the northern Atlantic OCS.

6.1.3. Additional data being collected to address data gaps

Describe additional data collected that will be collected, to support baseline characterization to address data gaps.

- Sunrise Wind will continue consulting with federal and state agencies and other stakeholders (universities, commercial and recreational fishermen, etc.) to build a baseline understanding of fisheries resources and to identify sensitive habitats and areas of particular concern in the Lease Area.
- Sunrise Wind has completed benthic surveys in the Project Area and Sunrise Wind's affiliates have completed benthic surveys in the region, as outlined in Section 6.1.2, to address data gaps related to the benthic habitats existing in the Project Area and regional environment of the Northwest Atlantic Outer Continental Shelf off Southern New England.
- Sunrise Wind has identified potential Project site-specific studies relevant to fisheries and benthic resources to include larval distributions, benthic habitat quality, distribution of nonindigenous/invasive species, and distribution and abundance of selected commercial fisheries species within the region of influence of the Project. These study topics were selected following a review of the literature on existing offshore wind farms, regional and local stakeholder concerns, and data gaps. Fisheries monitoring will be performed in accordance with Guidelines for Providing Information on Fisheries for Renewable Energy Development on the Atlantic Outer Continental Shelf Pursuant to 30

CFR Part 585 (BOEM 2019). As the timeline allows, the monitoring will commence at least two years prior to offshore construction. Monitoring will continue during construction, and at least two years of post-construction monitoring will be carried out, in accordance with applicable permitting requirements.

6.2. Species at risk

Describe which species the Proposer believes to be of greatest concern and why.

- Sunrise Wind identified the following essential fish habitat (EFH) species with various life stages that may occur or are expected to occur within the Project Area to be of greatest concern. These species include:
    - **New England Finfish**: American Plaice (*Hippoglossoides platessoides*); Atlantic Cod (*Gadus morhua*); Atlantic Herring (*Clupea harengus*); Atlantic Wolffish (*Anarhichas lupus*); Haddock (*Melanogrammus aeglefinus*); Monkfish (*Lophius americanus*); Ocean Pout (*Zoarces americanus*); Offshore Hake (*Merluccius albidus*); Pollock (*Pollachius virens*); Red Hake (*Urophycis chuss*); Silver Hake (*Merluccius bilinearis*); White Hake (*Urophycis tenuis*); Windowpane Flounder (*Scophthalmus aquosus*); Winter Flounder (*Pseudopleuronectes americanus*); Witch Flounder (*Glyptocephalus cynoglossus*); Yellowtail Flounder (*Limanda ferruginea*)
    - **Mid Atlantic Finfish**: Atlantic Butterfish (*Peprilus triacanthus*); Atlantic Mackerel (*Scomber scombrus*); Black Sea Bass (*Centropristis striata*); Bluefish (*Pomatomus saltatrix*); Scup (*Stenotomus chrysops*); Summer Flounder (*Paralichthys dentatus*)
    - **Invertebrates**: Atlantic Sea Scallop (*Placopecten magellanicus*); Atlantic Surfclam (*Spisula solidissima*); Longfin Inshore Squid (*Doryteuthis pealeii*); Northern Shortfin Squid (*Illex illecebrosus*); Ocean Quahog (*Arctica islandica*)
    - **Highly Migratory Species**: Albacore Tuna (*Thunnus alalonga*); Bluefin Tuna (*Thunnus thynnus*); Skipjack Tuna (*Katsuwonus pelamis*); Yellowfin Tuna (*Thunnus albacares*)
    - **Skates**: Barndoor Skate (*Dipturis laevis*); Little Skate (*Leucoraja erinacea*); Winter Skate (*Leucoraja ocellate*).
    - **Sharks:** Basking Shark (*Cetorhinus maximus*); Blue Shark (*Prionace glauca*); Common Thresher Shark (*Alopias vulpinus*); Dusky Shark (*Carcharhinus obscurus*); Porbeagle Shark (*Lamna nasus*); Sandbar Shark (*Carcharhinus plumbeus*); Sand Tiger Shark (*Carcharias Taurus*); Shortfin Mako Shark (*Isurus oxyrinchus*); Smoothhound Shark Complex (Atlantic stock) (*Mustelus canis*); Spiny Dogfish (*Squalus acanthias*); Tiger Shark (*Galeocerdo cuvier*); and White Shark (*Carcharodon carcharias*)
- Sunrise Wind identified the following five ESA listed fish species that may occur within the Project Area as also of greatest concern due to their listed status:
    - Atlantic Sturgeon (*Acipenser oxyrinchus oxyrinchus*);
    - Giant Manta Ray (*Manta birostris*);
    - Oceanic Whitetip Shark (*Carcharhinus longimanus*);
    - Shortnose Sturgeon (*Acipenser brevirostrum*); and
    - Cusk (*Brosme brosme*)

6.3. Potential impacts/risks and mitigation measures by project stage

The table below should list the potential impacts to fish, invertebrates, and their habitats and proposed mitigation measures. To this end, this section should describe how the Developer will minimize risk to fish, invertebrates and their habitats (e.g., foundation type, scour protection, cable shielding for electromagnetic fields, construction windows, siltation/turbidity controls, use of dynamic-positioning vessels and jet plow embedment).

Potential Impacts	Proposed Mitigation Measures[3]	Phase*			
		1	2	3	4
Micro-siting conflicts with habitats and fishery resources	• Conducting geophysical and geotechnical surveys, benthic surveys, and desktop analyses to inform site design and layout • Seeking input from regulatory, the fishing industry, and maritime industry to locate foundations and cable routes in the least impactful manner that is practicable • Project infrastructure will be sited to avoid and minimize impacts to sensitive habitats (e.g., hard bottom habitats) to the extent practicable.	X			
Temporary, alteration of the seabed and localized increases in noise and turbidity	• To the extent feasible, installation of the Project cables will be buried using equipment such as mechanical plow, jet plow, and/or mechanical cutter. These equipment options would result in less habitat modification than dredging options. The feasibility of cable burial equipment will be determined based on an assessment of seabed conditions and the Cable Burial Risk Assessment. • A plan for vessels will be developed prior to construction to identify no-anchorage areas to avoid documented sensitive resources. • DP vessels will be used for installation of the Project cables to the extent practicable. DP vessels minimize seafloor impacts, as compared to use of a vessel relying on multiple anchors. • Mobile fish and invertebrates are expected to temporarily leave the area in response to		X		X

[3] All proposed mitigation measures are subject to applicable regulatory processes and applicable permit requirements. This list of proposed mitigation measures is a good faith statement of currently anticipated mitigation measures. Actual mitigation measures will be pursuant to applicable permits and may vary from this list.

Potential Impacts	Proposed Mitigation Measures[3]	Phase*			
		1	2	3	4
	construction or decommissioning activity. Soft-start/ramp up procedures utilized for pile driving for marine mammals and sea turtles are expected to benefit fish and invertebrates and allow them to temporarily leave the area of activity. Because identical or similar habitat is widely available in the immediate area as identified in Project surveys and existing studies, the temporary displacement is not considered significant. • Committed to noise attenuation technologies to reduce sound from pile driving of foundations, pursuant to regulatory requirements • Time of year in-water restrictions on construction will be employed to the extent feasible to avoid or minimize direct impacts on species of concern, such as Atlantic sturgeon or winter flounder, during construction.. Time of year restrictions will be pursuant to regulatory requirements. 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 appropriate construction monitoring and impact minimization plans.				
Changes to water quality from accidental spills and/or releases, and erosion and run-off during onshore construction	• Require all construction and O&M vessels to 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. • Implementation of a Stormwater Pollution Prevention Plan (SWPPP), including erosion and sedimentation control BMPs and revegetation measures, to minimize potential water quality impacts from construction and O&M of the onshore portions of the Project. • Implementation of an Erosion and Sediment Control Plan through the SWPPP • Accidental spill or release of oils or other hazardous material will be managed onshore		X	X	X

Potential Impacts	Proposed Mitigation Measures[3]	Phase*			
		1	2	3	4
	through implementation of a Spill Prevention, Control, and Countermeasure (SPCC) Plan • Accidental spill or release of oils or other hazardous materials will be managed offshore through an Emergency Response Plan/ an Oil Spill Response Plan (OSRP) •				
Long-term changes to seabed, and habitat	• Populations of benthic organisms would not be significantly diminished by the small area of sea floor that will be disturbed by the Project construction • Use of horizontal direction drill at the landfall to minimize impacts to sensitive shoreline vegetation and shellfish resources. • 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.		X	X	
Colonization of encrusting invertebrates on wind turbine generators (WTG), which will quickly lead to the development of biogenic habitat and associated communities centered on the structures	• The shift toward a structure-based community may be considered desirable by some user groups, including commercial and recreational fishermen, because it supports higher trophic level fish that are of commercial and recreational value (e.g. Reubens et al., 2013).		X	X	X
Distribution of mobile species, including lobsters, groundfish, and pelagic predators	• Within several months of completion of construction, the abundance and distribution of benthic invertebrates is expected to return to pre-construction conditions (e.g., Roach, M. 2019) • Methods under evaluation to limit impacts, pursuant to regulatory concurrence, include: o Micrositing WTG and export cable locations to avoid sensitive habitats where feasible; o Burying cables wherever feasible using the most appropriate tools and methods; o Conducting pre- and post- construction fisheries monitoring surveys;		X	X	X

Potential Impacts	Proposed Mitigation Measures[3]	Phase*			
		1	2	3	4
	○ Slow start (ramp up) of pile driving equipment; ○ Emplacement of scour protection; and ○ Reduction of marine debris; and ○ Time of Year (TOY) restrictions.				
EMF impacts during operation	• Cable shielding as well as cable burial, where feasible, will limit EMF exposure.			X	
**Phase: 1: Survey/Design; 2: Construction; 3: Operation; 4: Decommission*					

6.4. Monitor for impacts during each phase

Describe how potential impacts will be monitored on these types of fish and invertebrates during each phase of physical work for the Project (site assessment, construction, operation, and decommissioning) to inform mitigation planning for later phases of the Project as well as for future Projects.

6.4.1. Pre/Post Monitoring to assess and quantify changes

Describe how changes to environmental resources will be quantified using statistically sound methods.

- Sunrise Wind and its affiliates has and will continue to conduct pre-construction studies to supplement existing baseline information that contribute to evaluating the long-term impacts.
- Sunrise Wind will conduct a pre-construction water quality assessment and has conducted sediment transport assessment to determine the spatial and temporal impacts of potential increased sediment within the water column and identify which species may be affected by these changes during construction.
- Sunrise Wind has conducted a pre-construction EMF analysis to determine the EMF exposure levels fisheries resources would experience. The EMF analysis indicated that EMF strong enough to potentially disturb marine life are not likely to extend more than a few feet into the water column. EMF modeling results and the results of previous scientific studies suggest that EMF will be below levels detectable by finfish but may be detectable by elasmobranchs and some invertebrate species. Detection of EMF is not expected to induce population level changes.
- Sunrise Wind is committed to collaborative science with the commercial and recreational fishing industries prior to, during, and following construction. Fisheries monitoring studies are being planned to assess the impacts associated with the Project on economically and ecologically important fisheries resources within the Project Area. 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. A number of monitoring techniques (e.g., trawl survey, ventless trap survey, dredge survey, optical surveys) can be utilized to evaluate changes to environmental resources in the

Project area. As practicable, the survey designs used by the developer will be made compatible with other regional surveys (e.g., NEFSC trawl survey) to facilitate information integration with, and compared to, information from existing data collection efforts. Sunrise Wind is developing study topics and methodologies through an iterative process and will include input from various stakeholders and agencies from multiple states, including New York, Rhode Island, and Massachusetts. Sunrise Wind will examine fisheries and benthic resource topics such as larval distributions, benthic habitat quality, distribution of nonindigenous/invasive species, distribution and abundance of selected commercial fisheries species, and impacts to resources from climate change within the region of influence of the Project. As the timeline allows, surveys will commence at least 2 years prior to offshore construction and will be conducted in order to collect sufficient pre-construction baseline data. Surveys will continue throughout construction and operation of the Project, in accordance with applicable permitting requirements. The research question(s), hypotheses, sampling design, and statistical analyses will be clearly described for each survey. The sampling designs for the monitoring surveys (e.g., Before-After-Control-Impact, or Before-After-Gradient) will be based on published methodologies that have been used to investigate the impacts associated with offshore wind development. Monitoring guidance being developed through the ROSA 'Interim Fisheries Methods Working Group' (of which Gregory DeCelles is an active member) will also be considered in the design and implementation of fisheries monitoring studies.

6.4.2. Address data gaps

Describe how data gaps will be addressed.

- Sunrise Wind has and will continue to work with stakeholders, including regulatory agencies and local groups, in the design phase of the Project to identify data gaps to be addressed through surveys or permitting applications in accordance with applicable permitting requirements.
- Sunrise Wind will work with regulatory agencies when developing the monitoring and mitigation plan in an effort to meet existing data gaps through pre- and post-construction monitoring in accordance with applicable permitting requirements.

6.5. Strategies for developing alternate protocols

Describe the process for determining when mitigation strategies are insufficient and under what conditions they might elect to rehabilitate or restore impacted fisheries in an alternative location or when the provision of compensation of some form may be appropriate.

- Sunrise Wind has and will continue to engage the fishing community and other relevant stakeholders including Federal and State agencies regarding mitigation measures that should be implemented to reduce potential impacts to both biological and socioeconomic resources.

7. Project Decommissioning

7.1. Potential impacts on marine wildlife, birds, bats, and fisheries

This section should describe potential impacts to marine mammals, sea turtles, birds, bats, and fisheries and habitats from decommissioning the project, based on available information and relevant experience (if any).

- In March 2017, Ørsted became the first developer to decommission an offshore wind project, the Vindeby Offshore Wind Farm near Lolland, Denmark (Vindeby Project).
- Sunrise Wind waste handling processes during decommissioning will focus on re-use or recycling, with disposal as the last option.
- Sunrise Wind anticipates that impacts to marine mammals, sea turtles, birds, bats and fisheries would be expected to be similar to the construction phase but to a lesser extent.

7.2. Approach for developing plan and coordination with stakeholders

This section should describe how a decommissioning plan will be developed to identify and mitigate potential impacts, including coordination with stakeholders, and any elements of its contemplated decommissioning plan that can be identified at this stage.

- Sunrise Wind understands that all facilities will need to be removed to a depth of 15 ft (4.6 m) below the mudline, unless otherwise authorized by BOEM (30 CFR § 585.910(a)).
- Sunrise Wind will decommission the Project in accordance with a detailed Project-specific decommissioning and removal plan that will be developed in compliance with applicable laws, regulations, and generally accepted industry practices that exist at the end of the Project's operational life. This plan will account for changing circumstances during the operational phase of the Project and will reflect new discoveries particularly in the areas of marine environment, technological change, and any relevant amended legislation.
- Sunrise Wind will develop the decommissioning plan in coordination with stakeholders including regulatory agencies, fisheries and marine stakeholders, and local communities.

8. Additional Considerations

8.1. Additional mitigation strategies and EMP refinement

This section should describe any additional mitigation strategies not otherwise described herein that would improve the Plan and reduce impacts on the fishing community. In addition, describe how the EMP will be updated and refined based on additional information and stakeholder feedback.

- Sunrise Wind will update and refine the EMP, pursuant to Section 12.06 of the OREC Agreement, as outreach with stakeholders, including regulatory agencies and local communities and groups, continue and as information on the Project Area is collected through additional survey work and development of permit applications and permits.

8.2. Process for updating the EMP

This section should describe how feedback from the fishing industry stakeholders, F-TWG, and other agencies and working groups will be incorporated and updated in the EMP.

- Sunrise Wind anticipates that stakeholder feedback will play an integral role in shaping study scopes and protocols to support environmental assessments, as well as mitigation measure that may be needed in response to assessment findings.
- Updates to the EMP are anticipated on an ad-hoc basis in connection with milestone events, such as preparation for permitting filings or finalization of study plans.
- Updates to the EMP are intended to reflect the results of iterative exchanges with members of the E-TWG, F-TWG, and relevant stakeholders.