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CERTIFICATE OF THE SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS
ON THE
DRAFT ENVIRONMENTAL IMPACT REPORT

PROJECT NAME	: Vineyard Wind Connector
PROJECT MUNICIPALITY	: Barnstable, Yarmouth, State/Federal Waters
PROJECT WATERSHED	: Cape & Islands
EEA NUMBER	: 15787
PROJECT PROPONENT	: Vineyard Wind
DATE NOTICED IN MONITOR	: May 9, 2018

The Vineyard Wind project is proposed in response to the clean energy mandate of Chapter 188 of the Acts of 2016 (An Act to Promote Energy Diversity) and associated Request for Proposals (RFP). The RFP was issued by energy distribution companies, in coordination with the Department of Energy Resources (DOER), to solicit long-term contracts to satisfy the policy directives encompassed within Section 83C of the Act and to assist the Commonwealth with meeting its Global Warming Solution Act (GWSA) goals. Subsequent to the filing of the Draft Environmental Impact Report (DEIR), Vineyard Wind was selected to advance to contract negotiations for 800 megawatts (MW) of wind energy.

The DEIR contains a detailed project description, assessment of impacts, alternatives analysis and identifies measures to avoid, minimize and mitigate project impacts. It identifies the Proponent's extensive consultation with federal, state and local agencies and officials and to stakeholders and the public. In light of the selection of Vineyard Wind to proceed through the procurement process, I have concluded that an additional procedural review step, preparation of a Supplemental DEIR (SDEIR), will serve the shared interests of the Commonwealth and project Proponent in a robust and transparent review while providing a clear process and timeframe for action. The Massachusetts Environmental Policy Act (MEPA; M.G.L. c. 30, ss. 61-62I) regulations provide for this procedural step only upon a

determination that the DEIR is inadequate. Therefore, given the evolving circumstance of the conclusion of the aforementioned procurement and selection of this project, as Secretary of Energy and Environmental Affairs, I hereby determine that the DEIR submitted on this project does not adequately and properly comply with the MEPA and its implementing regulations (301 CMR 11.00), notwithstanding the responsiveness of the DEIR.

This determination is based on the Commonwealth's interest in and obligation to provide a rigorous, robust and transparent environmental review process for the largest single procurement of offshore wind by any state in the nation. This interest is shared by the Proponent, state agencies, municipalities and the public. MEPA review is intended to maximize consistency between Agency Actions, and to facilitate coordination of all environmental and development review and permitting processes of the Commonwealth. For a project such as Vineyard Wind which requires significant federal, state, regional and local review and approval processes, MEPA review can serve to streamline and strengthen subsequent permitting and review to the benefit of the public, permitting agencies and project proponents by providing a comprehensive overview of the project, alternatives, potential environmental impacts and measures to avoid, minimize and mitigate Damage to the Environment.

Project Description

The purpose of the Vineyard Wind Project is to generate and distribute Offshore Wind Energy Generation[1] to Massachusetts in accordance with An Act to Promote Energy Diversity (the Act). The Act was promulgated as part of a strategy to meet the Commonwealth's Greenhouse Gas (GHG) reduction and energy goals. The project proposes to construct an offshore wind project located in the federally designated Wind Energy Area (WEA) which is under the jurisdiction of the Bureau of Ocean Energy Management (BOEM). The WEA is located in federal waters to the south of Martha's Vineyard. Vineyard Wind will deliver 800 MW of energy to the New England energy grid via submarine export cables that will make landfall in Massachusetts. The DEIR indicates that the Vineyard Wind project would offset carbon dioxide (CO_2) emissions by approximately 1,680,000 tons per year (tpy).

For the purpose of MEPA review, the portion of Vineyard Wind subject to state jurisdiction is referred to as the Vineyard Wind Connector and the "Project". Major elements of Vineyard Wind include a wind turbine array, offshore electrical service platforms (ESPs), offshore submarine transmission cables, onshore underground transmission cables, and an onshore substation. Up to three offshore export cables will be installed to distribute the energy to the New England bulk power grid. The Project includes offshore transmission cables in state waters, onshore cables and a substation. The DEIR presents two alternative offshore cable corridors (a Western cable corridor and an Eastern cable corridor) which will make landfall at one of two potential sites in Massachusetts. The Western cable corridor includes variations that extend through Muskeget Channel to the west and the east; the Eastern cable corridor would extend through the east of Muskeget Channel. Approximately 19 to 21 miles of the transmission lines will be located in state waters. New Hampshire Avenue in Yarmouth is the preferred landing site. Covell's Beach in Barnstable is an alternative landing site.

[1] Chapter 188 of the Acts of 2016 defines Offshore Wind Energy Generation as offshore electric generating resources derived from wind that: (1) are Class I renewable energy generating sources, as defined in section 11F of Chapter 25A of the General Laws; (2) have a commercial operations date on or after January 1, 2018, that has been verified by DOER; and (3) operate in a designated WEA for which an initial federal lease was issued on a competitive basis after January 1, 2012.

Each 10-inch diameter offshore export cable will be comprised of a three-core 220 kilovolt (kV) alternating current (AC) cable for power transmission bundled with a fiber optic cable. The cables are proposed to be buried approximately five to eight feet below the seafloor using jetting, jet-plow, plow, or mechanical trenching. Where burial is not possible due to subsurface conditions, it will be laid on the ocean floor and covered by rock or concrete mattresses. Within the transition zone between Nantucket Sound and land, Horizontal Directional Drilling (HDD) or open trenching will be used to install the cable.

The Preferred Route (6 miles long) for the onshore cable extends from Yarmouth to Barnstable; the Noticed Alternative (5.4 miles long) is located exclusively within Barnstable. The substation is proposed on land adjacent to the Eversource 115 kV Switching Station in Barnstable.

The DEIR indicates that Vineyard Wind will include two 200-MW offshore cables and one 400-MW offshore cable. If developed in phases, the first 400 MW would be installed with two 200-MW offshore cables, and the second 400 MW would be installed with a single 400-MW cable; the second 400 MW of capacity will require an interlink with the initial phase. The Proponent has not indicated whether its selection to provide 800 MW may affect phasing and or the number of cables. The Proponent has indicated that installation of two 400 MW cables is feasible.

Project Area

Both cable corridors extend through Nantucket Sound. A portion of the cable route within state waters lies within the Cape and Islands Ocean Sanctuary (CIOS) and the Massachusetts Ocean Management Plan (OMP) planning area. The Western cable corridor to the preferred landing site will extend through approximately 21 miles of state waters, while the Eastern cable corridor to the preferred landing will extend through approximately 19 miles of state waters.

The substation is proposed within a 6.35-acre site that is zoned for industrial use. It is located on Independence Drive within the Independence Park commercial/industrial area. The majority of the site is wooded and includes some limited parking areas and a small building. The site is bordered to the north by the Barnstable Switching Station, to the west by the former Cape Cod Times building, to the south by Independence Drive, and to the east by a 150- to 200-foot wide electric transmission corridor. The surrounding area has been zoned, permitted and developed or is proposed to be developed with residential, commercial, and recreational uses. A residential neighborhood is located approximately 2,000 feet from the site. Onshore transmission lines are proposed primarily within paved roadways and other existing rights of way (ROW) in Yarmouth and Barnstable.

According to the Massachusetts Natural Heritage and Endangered Species Program (NHESP), portions of the project area are mapped as Priority and Estimated Habitat for rare species including Roseate Tern (*Sterna dougallii*)[2], Common Tern (*Sterna hirundo*), Least Tern (*Sternula antillarum*), Water-willow Borer Moth (*Papaipema sulphurata*), Scarlet Bluet (*Enallagma pictum*), and Piping Plover (*Charadrius melodus*).[3] North Atlantic Right Whale (*Eubalaena glacialis*), Humpback Whale (*Megaptera novaeangliae*), marine birds such as Long-tailed Duck , Northern Gannet, Razorbill,

[2] Species also federally protected pursuant to the U.S. Endangered Species Act (ESA, 50 CFR 17.11).
[3] Ibid.

Wilson's Storm Petrel, fulmars, loons, scoters, and shearwaters, and Loggerhead (*Caretta caretta*) and Leatherback (*Dermochelys coriacea*) sea turtles have been observed throughout Nantucket Sound.

The Massachusetts Division of Marine Fisheries (DMF) indicates that the cable routes will pass through areas of commercial and recreational fishing and habitat for a variety of invertebrate and finfish species, including channeled whelk (*Busycotypus canaliculatus*), knobbed whelk (*Busycon carica*), longfin squid (*Doryteuthis pealeii*), summer flounder (*Paralichthys dentatus*), windowpane flounder (*Scophthalmus aquosus*), scup (*Stenotomus chrysops*), surf clam (*Spisula solidissima*), sea scallop (*Argopecten irradians*), quahog (*Mercenaria mercenaria*), horseshoe crabs (*Limulus polyphemus*), and blue mussel (*Mytilus edulis*). Blue mussel and kelp (*Saccharina latissima*) aquaculture operations are also located within Horseshoe Shoals (a subtidal area of Nantucket Sound).

Lewis Bay supports a variety of marine resources including winter flounder (*Pseudopleuronectes americanus*), horseshoe crabs, and shellfish. Sections of the Lewis Bay shoreline are mapped soft shell clam (*Mya arenaria*), American oyster (*Crassostrea virginica*), and quahog habitat. Oyster aquaculture grants are present along the eastern shoreline. Most of Lewis Bay is identified as bay scallop habitat and it supports a seasonal bay scallop fishery. Covell's Beach is mapped as a horseshoe crab nesting beach and waters offshore of the beach are mapped as surf clam habitat. Waters offshore of portions of Covell's Beach and the entrance channel to Lewis Bay contain mapped eelgrass (*Zostera marina*) habitat.

The Massachusetts Board of Underwater Archaeological Resources (BUAR) has identified Nantucket Sound as an area of high sensitivity that is rich in submerged ancient Native American cultural resources and shipwrecks. A number of properties included in the Massachusetts Historical Commission (MHC) Inventory of Historic and Archaeological Assets of the Commonwealth (Inventory) and State and National Registers are located along the onshore segment of the transmission route. Both the Preferred Route and Noticed Alternative extend through and are adjacent to archaeological sites.

In addition, portions of the project area include land held in accordance with Article 97 of the Amendments of the Constitution of the Commonwealth (Article 97) and land permanently protected through a conservation restriction (CR).

Environmental Impacts and Mitigation

As noted previously, Vineyard Wind is proposed to provide 800 MW of clean, renewable energy. The DEIR indicates it will offset 1.68 million tpy of GHG emissions and improve the resiliency of energy infrastructure. As an offshore wind energy development, the project does include unavoidable environmental impacts.

Potential environmental impacts[4] within Massachusetts include alteration of up to 8.3 acres of land, creation of up to 0.6 acres of impervious area, and alteration to wetland resource areas. Based on information in the DEIR regarding the Preferred Alternative, the project will impact Land Under the Ocean (LUO), of which some portion will be Land Containing Shellfish, associated with installation of the submarine cable, dredging of sand waves, and installation of the cofferdam at the end of the

[4] Certain impacts identified in the DEIR are associated with the Vineyard Wind Connector only, while others are associated with elements of the project under state and federal jurisdiction.

preferred landfall site. Installation of the land-based section of the transmission line will alter approximately 19,350 sf of Land Subject to Coastal Storm Flowage (LSCSF) and 5,600 sf of Riverfront Area (RFA). Open-cut trenching at the preferred landfall site will alter approximately 500 sf of Coastal Beach. The project proposes dredging of approximately 122,919 cubic yards (cy) within state waters and 192,948 cy total from the Wind Development Area based on the Western Offshore Export Cable Corridor (west through Muskeget Channel).

The submarine cable will be installed using jetting, jet-plow, or mechanical trenching to minimize the area of dredging and direct seafloor impact. HDD will be used for the transition to landfall to avoid impacts to coastal wetland resource areas along the alternate landfall site (Covell's Beach). HDD will also be considered for the preferred landfall site. Areas of Coastal Beach, RFA, and LSCSF impacted during construction will be restored. The project will be required to comply with management standards in the OMP to minimize impacts to marine resources. Best management practices (BMPs) will be employed during the construction period. The substation will include full containment for any components containing dielectric fluids including transformers and capacitor banks.

Permits and Jurisdiction

The Project is subject to a Mandatory EIR because it requires Agency Action and it will alter ten or more acres of other wetlands (LUO) pursuant to 301 CMR 11.03(3)(a)(1)(b) of the MEPA regulations. The project also exceeds ENF thresholds at 301 CMR 11.03(3)(b)(3) for dredging of 10,000 or more cy of material and at 301 CMR 11.03(7)(b)(4) for construction of electric transmission lines with a capacity of 69 or more kV that are over one mile in length. The Project may exceed the ENF threshold at 301 CMR 11.03(2)(b)(2) for disturbance of greater than two acres of designated priority habitat that results in a take of a state-listed rare species. Depending on the on-shore transmission route selected, the Project may also exceed ENF thresholds at 301 CMR 11.03(1)(b)(3) for conversion of land held for natural resources purposes in accordance with Article 97 to any purpose not in accordance with Article 97; and 301 CMR 11.03(1)(b)(5) for release of an interest in land held for conservation purposes.

The Project will require a Section 401 Water Quality Certification (WQC), a Chapter 91 (c. 91) License, and Approval of Easement pursuant to 310 CMR 22.00 from the Massachusetts Department of Environmental Protection (MassDEP); review under the Massachusetts Endangered Species Act (MESA) by NHESP; review under the OMP and Ocean Sanctuaries Act; a Non-Vehicular Access Permit, Road Crossing Permits, and a Rail Division Use and Occupancy License from the Massachusetts Department of Transportation (MassDOT); and Approval under MGL Chapter 164 Sections 69J and 72, and Chapter 40A Section 3 Zoning Exemption from the Energy Facility Siting Board (EFSB) and the Department of Public Utilities (DPU). Consistent with the request for proposals issued pursuant to Section 83 of Chapter 169 of the Acts of 2008 (An Act Relative to Green Communities), as amended by Chapter 188 of the Acts of 2016, the distribution companies must submit any long-term contract proposed to the DPU for review and approval. The Project also requires a Federal Consistency review by the Massachusetts Office of Coastal Zone Management (CZM). The Project is subject to the MEPA GHG Emissions Policy and Protocol (the Policy) and it may require Authorization from the State Legislature in accordance with Article 97.

The Project will require Orders of Conditions from Conservation Commissions in Edgartown, Yarmouth, and Barnstable, and potentially, Nantucket and Mashpee (or in the case of an appeal, Superseding Orders of Conditions from MassDEP).

Vineyard Wind and elements of the Vineyard Wind Connector require approvals from BOEM[5]; an Individual Permit from the U.S. Army Corps of Engineers (ACOE) under Section 404 of the Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act (RHA); review from U.S. National Marine Fisheries Service (NMFS), U.S. Coast Guard (USCG), and Federal Aviation Administration (FAA); consultation with and Field Investigation Permits from MHC in accordance with Section 106 of the National Historic Preservation Act (NHPA) of 1966 and M.G.L. Chapter 9, Sections 26-27C; a Special Use Permit from BUAR; Development of Regional Impact (DRI) review from the Cape Cod Commission (CCC) and Martha's Vineyard Commission (MVC); and a National Pollutant Discharge Elimination System (NPDES) Construction General Permit and Outer Continental Shelf Air Permit from the U.S. Environmental Protection Agency (EPA).

Because the Proponent is not seeking Financial Assistance, MEPA jurisdiction extends to those aspects of the Project that are within the subject matter of required or potentially required Agency Actions that are likely, directly or indirectly, to cause Damage to the Environment. The subject matter of the EFSB/DPU approvals and the c. 91 License are sufficiently broad such that jurisdiction is functionally equivalent to full scope jurisdiction and extends to all aspects of the Project that are likely, directly or indirectly, to cause Damage to the Environment.

Review of the DEIR

To support meaningful agency and public review of the project and assessment of alternatives to avoid, minimize and mitigate impacts in state waters, the DEIR was required to: provide a description and plans of Vineyard Wind and project elements in federal and state waters; identify baseline environmental conditions; and identify environmental impacts to federal and state resources as well as cumulative impacts. The DEIR includes information provided in the RFP regarding environmental impacts associated with siting, development and operations in federal jurisdiction (i.e., Section 7 of the RFP Response, Attachment M).

The DEIR describes onshore and offshore site conditions. It characterizes offshore baseline environmental conditions using previous data and survey information, including 2017 surveys. It generally identifies environmental impacts and potential measures to avoid, minimize and mitigate impacts for the Project.

It identifies the Project's potential impacts on land alteration, wetland resources, benthic conditions in Nantucket Sound, and temporary impacts associated with the construction period. It indicates that the potential landfall site at Great Island (Variant 4) was eliminated based on environmental resource and property rights issues.

The DEIR provides plans that identify impacts to wetlands and coastal resources; the area of land disturbance; the location and proposed conditions of the substation, cables, and interconnection to the

[5] During its review, BOEM must comply with its obligations under the National Environmental Policy Act (NEPA), the NHPA, the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA), the Migratory Bird Treaty Act (MBTA), the Clean Air Act (CAA), and the Endangered Species Act (ESA). BOEM will coordinate/consult with other Federal agencies including NMFS, United States Fish and Wildlife Service (USFW), EPA, and USGC). BOEM will also coordinate with the State pursuant to the Coastal Zone Management Act (CZMA).

transmission system; and stormwater management measures. It provides a noise analysis for the substation.

The DEIR identifies jurisdictional areas; State, federal and local permitting and review requirements; and provides an update on the status of each of these pending actions. It includes an assessment of the Project's consistency with certain State and regional policies and plans including the OMP, the CCC Regional Plan and the MVC Island Plan.

Additional geophysical surveys for the Western Corridor and its variants are underway. The Survey and Sampling Plan was finalized in consultation with the Massachusetts Ocean Management Team (OMT) and BOEM (Attachment D). The DEIR indicates that results from the 2017 and 2018 surveys will be used to confirm whether the Western Corridor is technically feasible, and if so, that will be the Proponent's preferred route for the offshore export cables. The Proponent indicates that the Western Corridor will likely avoid and minimize potential impacts because it is shorter and more direct and designed to avoid "special, sensitive or unique resources" (SSU), as defined in the OMP, to the extent possible.

Federal Consistency

CZM review will extend to the overall Vineyard Wind project. The DEIR was required to provide context and information regarding cumulative impacts of the entire project to support meaningful review and, in particular, to support Federal Consistency Review by CZM. As previously mentioned, the DEIR includes a brief description of the activities proposed in federal waters. The DEIR focuses on impacts within state jurisdiction and provides an impact analysis for certain activities within federal waters such as dredging. The Proponent submitted a CZM Consistency Statement on April 6, 2018. The Proponent consulted with CZM regarding its comment letter and evaluation of impacts and the DEIR is generally responsive to comments from CZM on the ENF; however, additional detailed information is necessary to support the selection of the Preferred Route, in particular because it includes the greatest length of cable in state waters and through hard/complex seafloor resources.

Ocean Management Plan

The project is subject to review under the Massachusetts OMP.[6] The OMP identifies and maps important ecological resources that are key components of the State's estuarine and marine ecosystems - defined as SSUs - and identifies key areas of water-dependent uses including commercial and recreational fishing and navigation. The OMP contains siting and management standards applicable to specific ocean-based activities to protect SSU resources and water-dependent uses. For cable projects, the OMP identifies the applicable SSUs as core habitat areas for the North Atlantic Right Whale and Humpback Whale, areas of hard/complex seafloor, intertidal flats, and eelgrass. SSU resources potentially impacted by the Project are primarily areas of hard/complex seafloor, eelgrass and right whale core habitat. OMP maps also depict areas of Sea duck core habitat, Concentrated Recreational Fishing, Concentrated Commerce Traffic, Concentrated Commercial Fishing Traffic and Concentrated Recreational Boating.

[6] The OMP was developed pursuant to the Oceans Act (Chapter 114 of the Acts of 2008) in 2009 and was updated in 2015.

The siting standards of the OMP and its implementing regulations (301 CMR 28.00) presume that a project alternative located outside mapped SSU resources is a less environmentally damaging practicable alternative than a project located within a mapped SSU resource. The OMP management standards require a demonstration that the project has undertaken all practicable measures to avoid damage to SSU resources, that there will be no significant alteration of SSU resource values or interests, and that the public benefits of the project outweigh the public detriments posed by impacts to SSU resources. The DEIR provides a discussion of the Project's consistency with the management standards. Additional analysis is required in the SDEIR specifically regarding identification of constraints, reviewing alternatives that would avoid SSUs (including alternative interconnection points from federal to state waters), providing sufficient details of existing and proposed conditions along the proposed cable route, and identifying environmental impacts of the project and mitigation measures.

The DEIR documents benthic conditions along the cable route and provides the results of surveys conducted in 2017 (Attachment L) including video, multi-beam and side-scan sonar, bathymetry, sub-bottom profiling, vibracore sampling, benthic grab samples, and sediment grabs. The survey data was used to establish boundaries of hard/complex bottom habitat areas to determine impacts to SSUs and to provide a comparison to post-construction conditions. The Proponent consulted with CZM and DMF regarding the survey methodology, data collection and presentation of the data. Additional analysis is necessary to further characterize offshore cable corridors and resources.

The OMP includes mapped areas of commercial and recreational fishing and navigation in Nantucket Sound that could be affected by the project. The DEIR describes potential impacts from cable installation, including navigation, fishing and the placement of fixed or mobile fishing gear. During the construction and installation phase, a project Marine Coordinator will manage all construction vessel logistics, liaise with USCG, port authorities, and others, and coordinate with fisherman and other mariners.

The DEIR indicates that the Proponent has actively consulted with DMF, the Massachusetts Lobstermen's Association (MLA), New England Fisheries Management Council (NEFMC), and a number of other fisheries groups and individuals to consider design and construction measures to minimize interference with fishing activity and impacts to fish habitat. The DEIR indicates that these consultations will continue. The Proponent consulted with the shellfish constables of Yarmouth and Barnstable regarding shellfish resources and aquaculture operations to avoid interference with shellfish relay or aquaculture operations. The DEIR indicates that aquaculture operations are well removed from the cable route in Lewis Bay. The Proponent has communicated directly with shellfish licensees and aquaculture grant holders in Yarmouth and will continue this consultation. The DEIR provides an update on these consultations. The DEIR includes a Fisheries Communications Plan (Attachment N) for alerting mariners of the location and timing of activities in Nantucket Sound.

CZM has indicated that additional information is necessary to demonstrate consistency with performance standards of the OMP.

Alternatives Analysis

The DEIR includes an alternatives analysis for offshore and onshore routing, landfall sites, and construction methodology and identifies criteria employed to evaluate alternatives. In addition to the Preferred Alternative as described herein, the DEIR considers the No-Build Alternative, transmission

alternatives (voltage, cable type, and interconnection locations), and geographic routing alternatives for onshore and offshore transmission. The DEIR was required to include conceptual plans, a summary of potential environmental impacts, and a supporting narrative for each of the alternatives identified in the ENF and Certificate on the ENF. The DEIR provides a majority of this information for the preferred cable corridors and onshore routes; however, additional quantification and comparison of impacts is necessary. The DEIR does not describe how alternative phasing could be developed to avoid and minimize environmental impacts.

The No-Build Alternative, non-transmission alternatives, sources of power other than wind, and load management were dismissed because they would not meet the project goal of providing a commercially sustainable wind energy project in response to the 83C legislative requirements nor advance the Commonwealth's goals for offshore wind generation as mandated by the Act.

The project includes high-voltage alternating current (HVAC) technology which was selected instead of high-voltage direct current (HVDC) based on its flexibility, reliability and reduced costs. The Proponent indicates that HVAC technology will support expansion of transmission cables and substation capacity and avoids costs associated with converter stations necessary at both cable termini. The DEIR dismisses further evaluation of HVDC based on higher costs and system complexity and long lead time for HVDC platforms (48 to 54 months).

In considering alternative geographic routes, the Proponent delineated a Study Area that included all of southeastern Massachusetts and eastern Rhode Island. The DEIR analyzes the following onshore interconnection points: Kent County Substation in Rhode Island, Brayton Point in Somerset, Pine Street Substation in New Bedford, Canal Station in Sandwich (three distinct routes), Falmouth Tap Switching Station, Falmouth Substation, Bourne Substation, Mashpee Substation, West Barnstable Substation, Barnstable Switching Station (preferred), and Pilgrim Station in Plymouth.

Based on the selection of HVAC technology, the DEIR asserts that the maximum cable length from the federal lease area to the interconnection point could not exceed 62 miles without requiring an expensive mid-way reactor station. Seven interconnection points that exceeded the 62-mile total cable length restriction were eliminated. The following interconnection points were considered further: Falmouth Substation (35 miles of cable); Mashpee Substation (45 miles of cable); West Barnstable Substation (47 miles of cable); and Barnstable Switching Station (49 miles of cable). The DEIR indicates that only the West Barnstable Substation and Barnstable Switching Station could accommodate 400 MW and 800 MW of capacity and include an acceptable cable length. The Barnstable Switching Station was deemed preferable based on an Independent System Operators of New England (ISO-NE) Feasibility Study which determined that transmission system upgrades are not necessary to accommodate the interconnection for 800 MW and installation activities could be completed within the project schedule.

The Proponent identified 50 potential landfall sites along the south of Cape Cod and on the east coast of Buzzards Bay, which were narrowed down to eight based on cable lengths, interconnections points, and other constraints. The DEIR provides a narrative comparing the eight landfall sites located in the Towns of Mashpee, Barnstable, and Yarmouth. The Proponent selected New Hampshire Avenue as the landfall site for the Preferred Route and Covell's Beach as the landfall site for the Noticed Alternative based on suitability criteria including sufficient space to accommodate the cable transition.

The DEIR advances analysis of two offshore submarine transmission routes (Western and Eastern Corridors) including nearshore variants, two landing/interconnection sites, and two onshore transmission routes (Preferred Route and Noticed Alternative) including onshore variants. The routes initiate at the wind turbine array and follow the same northerly route before diverging at the boundary with state waters through the CIOS. The offshore routes then continue separately through a pocket of federal waters in Nantucket Sound before re-entering state waters and making landfall at one of two potential landfall sites.

As discussed above, the offshore cable routes would pass through mapped SSUs, including right whale core habitat and areas of hard/complex seafloor. The DEIR was required to provide additional analysis demonstrating that no less environmentally damaging alternatives exists and how additional surveys may provide more accurate characterization or delineation of SSU resources. Information from the 2017 surveys is included in the DEIR.

The DEIR indicates that the preliminary corridors recommended in the OMP, which are in presumptive compliance with the siting standards, are not suitable for the Project because water depths within these mapped corridors are frequently too shallow and the mapped corridors do not minimize onshore and overall routing distances and associated impacts. The DEIR evaluates and dismisses routing via the Nantucket Offshore Export Cable Corridor to the New Hampshire Avenue landfall site because it would increase the length of the export cable (69 miles), would require an expensive onshore route across Nantucket with two additional landfalls and would require HDD.

The DEIR indicates that the offshore route identification occurred through consultation with the OMT and consideration of factors including OMP guidelines, bathymetric data, navigation corridors, and a preliminary geophysical survey in 2017 along approximately 125 miles of potential offshore route segments. The DEIR maintains that both offshore routes are feasible, avoid core habitat mapped for whales, avoid mapped eelgrass habitat, and minimize impacts to mapped SSU areas. The routes have generally equivalent impacts. The DEIR indicates that the Western Corridor and Easter Corridor would be located along 1.7 miles and 0.4 miles of mapped hard/complex bottom, respectively.

Offshore installation of up to three cables for the majority of the route is anticipated to use simultaneous lay-and-bury via jet plow. The DEIR indicates that other methods may be required in areas of hard bottom or other challenging conditions and provides information regarding cable installation methods. Target burial depth will be approximately five to eight feet below stable seabed. Jet-plowing, plowing, and mechanical trenching will create a three to six-foot wide trench. Where subsurface conditions prevent burial of the cable it will be placed on the seafloor and covered with protective material. The DEIR describes potential impacts from offshore cable installation associated with the six-foot-wide trench (direct), 20-foot-wide corridor for the cable installation tool which will move along the seafloor on skids or tracks (temporary), sediment dispersion, dredging through sand waves, sidecasting of sediment, anchoring, and cable protection. The DEIR does not identify where certain installation methods will be used.

Open trench installation is proposed at the preferred New Hampshire Avenue landfall site. HDD is proposed at Covell's Beach where the Proponent has determined that it is necessary to avoid impacts to sensitive resources or recreational interests. The DEIR provides an analysis of both technologies at the New Hampshire Avenue landfall site.

Onshore routes considered by the Proponent and described in the DEIR include: the Preferred Route, four variants of the Preferred Route, the Noticed Alternative, and a variant of the Noticed Alternative.

Wetlands and Water Quality

Vineyard Wind includes work within wetland resource areas and activities that trigger Federal, State and local wetland permitting jurisdiction, each with its own performance standards and regulations. The Conservation Commissions of Yarmouth, Barnstable, and Edgartown and potentially Nantucket and Mashpee will review the project to determine its consistency with the Wetlands Protection Act (WPA), the Wetlands Regulations (310 CMR 10.00), and associated performance standards, including the stormwater management standards (SMS). MassDEP will also review the Project to determine its consistency with the 401 WQC (314 CMR 9.00) and c. 91 regulations (310 CMR 9.00). Finally, ACOE review will determine its consistency with Section 404 of the Federal CWA and Section 10 of the RHA.

The DEIR describes impacts to onshore and offshore resource areas in Massachusetts including certain impacts within federal waters (discussion of seafloor impacts and dredging).[7] Plans delineate applicable resource area and buffer zone boundaries including Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) floodplain elevations and depict project elements in relation to wetland resource areas and any associated buffer zones. The DEIR describes the methodology for quantifying impacts from cable installation on LUO.

Potential maximum area of seafloor (LUO) impacts associated with installation of three cables are summarized in the following table (Table 4-3 of the DEIR summarizes individual impacts to LUO for each corridor).

Project Activity	State Waters (acres)	Total (State and Federal Waters) (acres)	Notes
Cable installation (trench)	50	97	6-foot-wide trench
Cable installation (jet-plow skids)	116	227	20-foot-wide corridor less the overlapping 6-foot-wide trench
Dredging of sand waves	36	63	65-foot-wide centered on cable less the 20-foot wide jet plow impacts
Sidecast from dredging	105	180	130-foot-wide corridor
Anchoring	5.6	N/A	Conservative estimate based on half the length (11.7 miles) of the longest offshore corridor route in state waters
Cable Protection	40	N/A	Up to 3.7 miles (only required in state waters)

The DEIR indicates that mitigation for unavoidable impacts to LUO will be determined in accordance with the OMP pursuant to 301 CMR 28.06 of the OMP.

Onshore, the Project will impact approximately 1,500 sf of Coastal Beach (open trenching at New Hampshire Avenue), up to 19,350 sf of LSCSF, and 5,600 sf of RFA for installation of the

[7] Certain impacts were disaggregated into those under MEPA jurisdiction and those under federal jurisdiction.

transmission cable. The DEIR indicates that construction monitoring and mitigation will be designed to restore Coastal Beach.

Dynamic positioning vessels will be used for cable installation. Shallow water and strong currents may preclude its use in some areas. The DEIR provides a discussion on potential anchoring. Where it is precluded, anchoring will be necessary. Anchoring impacts would be associated with disturbance of the substrate resulting in localized mortality of infauna and anchor sweeps across the seafloor. The DEIR indicates that mid-line anchor buoys, where feasible and safe, could minimize potential impacts. Anchoring will be contained within the installation corridor, although additional width may be required in Muskeget Channel and Lewis Bay.

The DEIR includes a sediment dispersion modeling study of offshore cable installation activities (Attachment H) and provides a brief discussion of the results. The study concluded that total suspended solids (TSS) concentrations of 10 milligrams per liter (mg/L) above ambient conditions were limited to within approximately 3,445 feet of the route centerline. The DEIR asserts that increased turbidity and possible siltation during cable installation will be minor and of short duration and acknowledges that resettlement of sediment may cause mortality of benthic fauna particularly sessile and attached organisms proximate to the route. In addition, dredging of sand waves will directly impact organisms within and adjacent to the dredge footprint. The Proponent developed a Benthic Habitat Monitoring Plan (Attachment D) that is intended to document habitat and benthic community disturbance and recovery associated with project construction and installation. The benthic survey is proposed to begin in 2019 or 2020. The Proponent has indicated that the plan may be amended to include the Sand Lance as requested by DMF.

The DEIR estimates that cable burial may not be achievable for up to 3.7 miles of the corridor. Hand-jetting may be used in very limited instances (e.g., the crossing of the existing Nantucket offshore cable, and at the seaward entry to the HDD conduit offshore from the New Hampshire Avenue Landfall Site, if HDD is used); the DEIR indicates that hand jetting is not viable for work in more extensive hard bottom areas, however, a mechanical trencher may be needed to achieve the desired burial depth. Where armoring cannot be avoided, the DEIR briefly describes alternative cable protection methods including rock placement (rock damps), concrete mattresses, and protective cable shells (Uraduct/half-shell or similar). The DEIR does not propose specific mitigation measures to offset conversion of benthic habitat.

The DEIR provides an analysis of HDD and open-trench installation alternatives in the transition zone between offshore and onshore cabling at the landfall sites. The DEIR evaluates both technologies for New Hampshire Avenue; HDD would be employed at Covell's Beach. Open-trench is identified as the preferred method for the New Hampshire Avenue site because cable burial depth would be three to five times greater using HDD and deeper burial depths cause a cable to operate at a higher temperature (open trench would result in a better cable rating); shorter construction timeline; and lower costs. At Covell's Beach, only HDD is proposed to avoid impacts to the nearshore area, tidal zone, beach, and coastal dunes.

The three offshore export cables would transition to up to nine onshore transmission cables. The cables will be pulled through the proposed underground duct bank (one cable per conduit) onshore. The DEIR describes construction staging for both methods at the New Hampshire Avenue and for HDD at Covell's Beach.

Onshore cable will be installed via open trenching through existing roadways and ROWs. The project will add up to 0.6 acres of new impervious area associated with foundations, containment sumps, a small control building, and potentially paved access driveway and parking areas at the proposed substation site. The proposed substation will be equipped with full containment (110 percent) for any components containing dielectric fluids, including all transformers and capacitor banks; no equipment will contain polychlorinated biphenyls (PCBs). Erosion and sedimentation BMPs will be installed to protect wetland resource areas and other sensitive areas during construction. Following construction, the project will restore any disturbed areas. The Proponent will prepare a Stormwater Pollution Prevention Plan (SWPPP) in accordance with the NPDES Permit.

The DEIR describes the proposed stormwater management system for the substation and addresses how it will be designed to comply with the SMS, including the use of BMPs to improve stormwater quality and to maintain pre-development peak flow rates and volumes. The DEIR includes a Stormwater Management Report (Attachment O). The onshore segment of the Project is proposed within or proximate to the Zone I and Zone II of public water supplies, which are considered Critical Areas. The proposed stormwater management system will include grass water quality swales, sediment forebays, a deep sump catch basin, and an infiltration basin. The DEIR indicates that the stormwater management system will comply with the SMS.

Waterways

The submarine cable will be located within flowed tidelands of Nantucket Sound and Lewis Bay and will be subject to licensing under c. 91 and the Waterways Regulations. The DEIR describes the landward extent of c. 91 jurisdiction. According to the DEIR, the Project area does not include any filled or landlocked tidelands. The DEIR discusses the Project's consistency with the applicable c. 91 regulations.

As a facility generating electricity from wind power which requires an EIR pursuant to 310 CMR 9.12(2)(e), MassDEP shall find the project to be water-dependent based on a comprehensive alternatives analysis demonstrating that the facility requires direct access to or location in tidal waters and cannot reasonably be located or operated away from tidal waters. For projects subject to an EIR, the alternatives analysis must be provided during MEPA review so that I may make a finding regarding water-dependency. The DEIR includes information intended to document that the project is a water-dependent facility in accordance with the Waterways Regulations (310 CMR 9.00) and describes why the project cannot be reasonably located away from tidal waters.

The proposed offshore export cables will require approximately 122,919 cy of dredging within state waters and 192,948 cy in state and federal waters to a target depth of six feet (up to 15 feet). The DEIR indicates that these dredged corridors will be approximately 65 feet wide for each of the three cables and the installation corridor has been reduced to approximately 2,600 feet (810 meters) wide. Additional information necessary to evaluate impacts of dredging and consistency with c. 91 will be addressed in the SDEIR.

Marine Resources and Rare Species

The cable routes extend through diverse marine environments within the Outer Continental Shelf, Nantucket Sound, and the CIOS. As noted by the NHESP, CZM, and DMF, the area includes

habitat and prey species important for rare species, including several state- and federally-listed terns (Roseate, Common, and Least), Piping Plover, as well as shellfish and finfish species that are important to the commercial and recreational fishing industries. The critically endangered North Atlantic Right Whales transit through this area and have been observed in areas outside of the Core Habitat SSU.

While the DEIR includes information about existing conditions along and adjacent to the proposed cable route, additional information regarding potential impacts to rare species, marine species, and their habitat is necessary.

The DEIR did not identify the direct and indirect impacts of the project on state-listed and migratory birds in the project area. The Proponent consulted with the NHESP in March 2018 and submitted an Avian Risk Study and other materials from the federal Construction and Operations Plan (COP). According to the DEIR, NHESP expressed concerns regarding potential impacts to rare and endangered shorebirds including Roseate Tern, Common Tern, and Least Tern associated with their spring and fall migrations as well as construction and operational impacts to their nesting and foraging habitats. NHESP has also expressed concern about potential project impacts to Sand Lance, which is an important food source of these avian species, particularly the Roseate Tern. The Proponent is consulting with DMF regarding incorporation of the Sand Lance into the Benthic Habitat Monitoring Plan.

The DEIR assesses the impacts of the installation, operations and maintenance of the cables on commercial and recreational fishing and navigation. It indicates that the planned burial depth of the offshore cables will allow continued use of mobile fishing gear. Cable protection, such as rock dumps or concrete mattresses, may be required in areas where conditions do not support subsea installation. The DEIR indicates the Proponent will select and design protection to minimize impacts to fishing and other gear and to avoid impacts to navigation. The DEIR indicates there will be minimal impacts associated with the operations and maintenance of the cable. It describes cable repair activities in the event of a cable fault.

The DEIR includes an Electric and Magnetic Field (EMF) Analysis (Attachment F). Magnetic field (MF) modeling for both the offshore and onshore cables was performed for 800 MW of output and factored in charging currents. Calculations indicate that modeled operational MF values for onshore route segments installed under roadways, bike paths and offshore routes are far below the 2,000-milligauss (mG) health-based guideline issued by the International Commission on Non-Ionizing Radiation Protection (ICNIRP). The modeling indicates that the depth to which the cable is buried is a key factor for reducing the MF. This assessment is primarily based upon human health-based guidelines for public exposure to MF.

The DEIR also references several studies on the impacts of EMF on marine organisms and states that there is little evidence that EMF negatively impacts fish or invertebrates and that this is the subject of on-going research. According to a recent BOEM study, electric cables did not constitute a barrier to movements across the cable for either lobsters or skates, although some behavioral changes were observed. According to comments CZM, DMF and NHESP, more studies on the potential effects of cable magnetic fields on behavior of marine species, including on free ranging (rather than captive) organisms may be necessary as the project progresses through environmental review and permitting.

Climate Change

Executive Order 569: Establishing an Integrated Climate Change Strategy for the Commonwealth (EO 569) was issued on September 16, 2016. EO 569 recognizes the serious threat presented by climate change and directs agencies within the administration to develop and implement an integrated strategy that leverages state resources to combat climate change and prepare for its impacts. The Order seeks to ensure that Massachusetts will meet GHG emissions reduction limits established under the GWSA of 2008. The project is proposed to provide significant air quality and GHG emission benefits to comply with the GWSA, particularly in light of the loss of zero carbon nuclear power plants[8] in New England.

The GHG Policy and requirements to analyze the effects of climate change through EIR review is an important part of this statewide strategy. These analyses advance proponents' understanding of a project's contribution and vulnerability to climate change.

Greenhouse Gas (GHG) Emissions

This Project is subject to review under the May 5, 2010 MEPA GHG Policy because it exceeds thresholds for a mandatory EIR. The construction phase emissions of regulated pollutants will be offset during the operational phase by annual emissions reductions associated with on the New England power grid of 1,680,887 tpy of CO_2, 1,077 tpy of nitrogen oxides (NO_X), and 880 tpy of sulfur dioxide (SO_2).[9]

Line losses will be minimized primarily by optimizing the length of the overall offshore and onshore routes. Line losses will also be avoided by transmitting power from the offshore ESPs to the point of interconnection at 220 kV, which is identified as the highest practical voltage based on commercially-available offshore cable technology. The DEIR indicates that the Proponent is optimizing equipment sizing, selection, and configuration at the offshore and onshore substations, and locating the onshore substation adjacent to the point of interconnection at the Barnstable Switching Station. The DEIR indicates that the project will minimize construction period CO_2 emissions, and, also those from operations and maintenance activities, through the use of ultra-low sulfur fuels, limiting engine idling time, minimizing fuel use through efficient construction, and use of engines manufactured to Tier 4 federal emission standards or best available control technology (BACT).

The project will avoid impacts associated with the leakage of Sulfur Hexafluoride (SF6) gas, a potent GHG, by constructing a conventional air insulated substation (AIS) design which does not use SF6. The Proponent expects little to no leakage of SF6, based on the purchase and maintenance of equipment with leakage guarantees and pressure monitoring; breakers will be continuously monitored. Upon equipment removal, the Proponent will be responsible for the secure storage, reuse, recycling, or destruction of the SF6.

The DEIR indicates that the only enclosed structure on the proposed substation site will be a pre-fabricated windowless single-story 1,210-sf building that will be conditioned to protect sensitive electronic equipment. It is expected that energy from the offshore wind array will be used to condition

[8] Decommissioning of Pilgrim and Vermont Yankee, and retirements of Yankee Rowe and Maine Yankee in the 1990s.
[9] The displacement analysis uses Northeast Power Coordinating Council (NPCC) New England air emissions data from EPA's Emissions & Generation Resource Integrated Database (eGRID) assuming an annual capacity factor of 45 percent and total project delivery of 800 MW.

the enclosure more than 95 percent of the time; therefore, the DEIR does not include a GHG emissions analysis for this building.

Climate Change Adaptation and Resiliency

The DEIR indicates that only the landfall sites at New Hampshire Avenue and Covell's Beach and nearby stretches of onshore routing are within existing FEMA flood zones. The proposed substation is not located within a flood zone.

The DEIR evaluates the Project's vulnerability to sea level rise by using data from the CCC's Sea Level Rise Viewer, a web mapping application that shows potential sea level rise increments (one to six feet); Sea, Lake, and Overland Surges from Hurricanes (SLOSH) zones; FEMA FIRMs; and town-identified critical facilities. The model reflects rising water levels (i.e., bathtub approach); it does not incorporate storm surge. The analysis used sea level rise scenarios of one foot and three feet and a 30-year projected lifespan. The DEIR indicates that a scenario involving 6 feet of sea level rise would correspond to a period spanning 100 years. A one-foot rise in sea level would not result in any inundation of the onshore cable route or substation site. A three-foot rise in sea level would potentially inundate two small areas of the onshore export cable route: a small area on South Sea Avenue where water may cross the existing road, and the western side of the New Hampshire Avenue landfall site.

The SLOSH model[10] estimates and models storm surge heights under different circumstances using variables such as storm size, wind speed, track, and pressure. Hurricane storm surge inundation can be expected to occur along portions of the Preferred Route and Noticed Alternative. This inundation is constrained to the southern portions of these routes; no hurricane storm surge inundation would be expected at the proposed substation site. The DEIR indicates that the heavily-insulated onshore cable, which will be buried within an underground concrete duct bank, will be designed to withstand wet conditions and would not be affected by these scenarios.

The DEIR evaluates trends related to shoreline change to assess the vulnerability of infrastructure (transition vault and manholes) proposed at landfall sites where offshore export cables will transition to onshore export cables. The Project is not anticipated to cause long-term erosion or accretion at the landfall sites. To ensure that proposed onshore infrastructure (e.g., manholes and associated electrical infrastructure) will not cause or be vulnerable to shoreline erosion, the Proponent performed a shoreline change analysis at both landfall sites. Based on these analyses, the DEIR concludes that the landfall sites associated with the Preferred Route and Noticed Alternative demonstrate relatively static or accreting shorelines. The vulnerability to shoreline change over the life of the project is low.

Land Alteration

The Project will alter up to approximately 8.3 acres of land associated with trenching (1.7 acres for the Preferred Route and 2.3 acres for the Noticed Alternative) and construction of the substation (six acres) on previously undeveloped land. Land disturbance associated with trenching was based on the length along the utility ROW (1.2 miles for the Preferred Route and 1.6 miles for the Noticed Alternative) and the average width of that trench (approximately 12 feet). Minor clearing of vegetation may be needed along the rail ROW and utility ROW. If the bike path variant is selected, clearing will be

[10] The National Hurricane Center provides inputs for the SLOSH model.

conducted consistent with that proposed by MassDOT for the bike path corridor. The DEIR does not identify measures to reduce the amount of land alteration and clearing.

Article 97 and Conservation Land

The DEIR describes land protected by Article 97 and conservation restrictions (CR) along the onshore export cable routes. The Preferred Route does not require crossings of any public open space, CR, or recreation land protected by Article 97. Variant 2 (Utility ROW) and Variant 3 (Bike Path) of the Preferred Route would each require underground crossing(s) of land protected by Article 97.

In Variant 2 (Utility ROW), the proposed duct bank would cross a parcel of land subject to a 1988 CR held by the Town of Barnstable. The DEIR asserts that it would be constructed within a utility easement developed with overhead electric transmission lines which dates to 1968 and explicitly permits underground transmission lines. The DEIR indicates that the utility easement pre-dates the placement of the CR and, therefore, proposed transmission use within the utility ROW does not require legislative authorization pursuant to Article 9.

The Noticed Alternative and its Variant include underground crossings of Article 97 land at the Covell's Beach landfall site. The Noticed Alternative would also include underground crossing of two parcels of land (west of the Barnstable Switching Station) acquired by the Town of Barnstable for conservation/open space purposes and managed by the Barnstable Conservation Commission. Four parcels to the immediate west of those parcels would also be crossed within an existing utility ROW, and are subject to an Amended and Restated Development Agreement with the CCC dated December 1, 2016. This Development Agreement requires the property owner to grant certain other CRs that may affect these parcels. As of March 2018, land records do not indicate that restrictions have been conveyed. The route in this location would be constructed within a utility easement developed with overhead electric transmission lines which dates to 1968 and explicitly permits underground transmission lines. The DEIR maintains that because the utility easement pre-dates the acquisition of the property for conservation purposes, permitted transmission use within the ROW does not require Article 97 approval.

A change in use of Article 97 land requires legislative authorization and compliance with the Executive Office of Energy and Environmental Affairs (EEA) Article 97 Land Disposition Policy (Article 97 Policy). A primary goal of the Policy is to ensure no net loss of Article 97 lands under the ownership and control of the Commonwealth. Allowances are made within the Policy for exceptional dispositions. The DEIR describes the project's consistency with the Article 97 Policy. It indicates that the area of the potential disposition is limited and located entirely underground. It identifies benefits of the co-location of Variant 3 with the proposed bike path. HDD would be used at Covell's Beach to avoid permanent impacts to land and public recreation. Appropriate mitigation or compensation would be provided for the easement. In addition, the provision of renewable energy will meet an important public purpose and provide environmental and economic benefits.

Variants 2 and 3 of the Preferred Route would cross parcels subject to CRs, however, the DEIR claims that an amendment to a CR only appears to be required for Variant 3. The argument for Variant 2 is similar to that presented earlier regarding Article 97 land where an existing utility easement dates to 1968 and explicitly permits underground transmission lines. With regard to Variant 3 (Bike Path), the two parcels located in Yarmouth and subject to Article 97 are also subject to a CR held by the Trustees

of Yarmouth Conservation Trust (TYCT). An easement allowing use of the parcels would require a release or modification of the CR because it prohibits utility installation. The DEIR describes the requirements for amending the easement.

Traffic and Transportation

The Project requires a Non-Vehicular Access Permit, Road Crossing Permits, and a Rail Division Use and Occupancy License from MassDOT. All onshore export cables will be buried within concrete duct banks, primarily within paved public roadway layouts with some shorter stretches in existing utility transmission ROW, a MassDOT-owned railroad ROW, and potentially along the bike path corridor proposed by MassDOT (Variant 3). The majority of these roads are maintained by the Towns of Yarmouth or Barnstable. The Preferred Route will cross State highways at three locations: an open trench crossing of Route 28 in Yarmouth, and two crossings beneath bridge spans of Route 6 at Willow Street in Yarmouth and Mary Dunn Road in Barnstable.

Traffic impacts are limited to the construction period. The DEIR indicates that the Proponent will continue to work closely with the municipalities and MassDOT to develop Traffic Management Plans (TMPs) to evaluate construction-related traffic impacts, maintain safe and efficient access for all modes of travel in the vicinity of access points to the ROW, and propose mitigation including night work, signage, and similar measures. The DEIR provides an outline of the TMPs and describes potential construction sequencing and traffic impacts, particularly on local roadways in Yarmouth and Barnstable. Specifically, the Proponent has worked with officials from the Town of Yarmouth to refine TMPs for Higgins Crowell Road near the Yarmouth Police Station and the Small Elementary School. The DEIR includes Draft TMPs for these locations and at State road crossings (Attachment E).

The TMPs will be submitted for review and approval by the municipalities. The TMPs will be adapted and revised to address unanticipated changes in construction prior to implementation of construction changes. The Proponent will provide funding to municipalities to hire a construction monitor to evaluate compliance with TMPs and coordinate with municipalities and residents regarding concerns during construction.

The DEIR includes a draft construction management plan (CMP) outlining measures to minimize impacts and duration of work within the State highway layout. The Proponent and MassDOT should coordinate appropriate times, length and management of roadway shutdowns to limit impacts to travelers.

Noise

The DEIR includes an analysis of noise associated with the substation. It includes a baseline sound monitoring program to measure existing ambient sound levels in the vicinity of the proposed substation, computer modeling to predict future sound levels when the substation is operational, and a comparison of predicted sound levels with applicable noise criteria. The DEIR provides a review of regulatory requirements and guidance, describes the assessment methodology, and provides a discussion of the results.

Sound prediction modeling included transformers, shunt reactors, and harmonic filters and associated equipment. It excluded synchronous condensers which will be enclosed within a structure that

will reduce the sound. Sound levels were measured at seven modeling locations which represented the closest sensitive residential receptors to the substation site.

Modeling (Proposed Project plus Nighttime Ambient), including noise control features, predicts an increase in the nighttime ambient L_{90} sound levels[11] by no more than 9 decibels (dBA) at six modeled locations with the exception of the nearest residential property line (R5). Receptor location R5 is at the property line shared with the Village Green Apartment complex (at the western side of the utility ROW) and is predicted to increase the nighttime ambient L_{90} sound levels by18 dBA. The modeled nighttime sound level increase at the nearest residential structure (proximate to receptor location R4 with a predicted increase over ambient of 7 dBA) is expected to be well under 10 dBA. In addition, no "pure tones"[12] as defined by the MassDEP Noise Policy are predicted due to operation of the Project.

The proposed substation will include noise control features to limit sound level impacts in the neighboring community primarily to the northeast and east. A low-noise design will be specified for the main transformers, and the synchronous condensers will be housed in a building or acoustically-treated equipment enclosure. Sound level modeling results included a series of noise barriers (five) of varying heights and lengths. Noise control features for the Project will be advanced as the substation layout is refined. Upon completion of substation design, the noise modeling will be finalized and mitigation refined. The Proponent will retain a minimum 50-foot-wide buffer of existing vegetation along the south side of the site (along Independence Drive) and a minimum 30-foot buffer of existing vegetation along the eastern side.

Water Supply

The Project is located within the Cape Cod's Sole Source Aquifer and will pass through the Zone I and Zone II of several public water supply wells in the Towns of Yarmouth and Barnstable. The Preferred Route crosses through a single Zone I area along a short stretch of the abandoned road segment between Higgins Crowell Road and Willow Street and traverses a total of 3.15 miles of Zone I or Zone II protection areas. It crosses two stretches of the Barnstable Groundwater (GW) Protection Overlay District. The Noticed Alternative is not located within a Zone I area. It is located within 3.99 miles of Zone II protection areas and much of the route is located within the GW Protection Overlay District.

The proposed substation site will be located within the Zone II Wellhead Protection Area and the Barnstable GW Protection Overlay and Wellhead (WH) Protection Overlay Districts, and is directly upstream from Barnstable's public water supply wells. The GW and WH districts include limitations on hazardous substance use, generation, storage, and disposal, as well as limits on areas of disturbance and impervious surface. The DEIR confirms that the substation will be designed and constructed to provide full volume (110 percent) impervious containment of any fluids within substation equipment. The DEIR indicates that the Proponent is committed to containment, despite a low probability of any leakage, because of the sensitive nature of the Cape Cod watershed and based on consultations with local officials and public comments.

[11] The L90 is the statistical level that is exceeded during 90 percent of the measurement period, and is the metric used by MassDEP to define "ambient".

[12] A "pure tone" condition occurs when any octave band center frequency sound pressure level exceeds the two adjacent center frequency sound pressure levels by 3 decibels or more.

The DEIR describes the project's compliance with the Massachusetts Drinking Water Regulations (310 CMR 22.00). The DEIR indicates that the Project is not expected to result in any significant impacts to water resources, including water supplies. The Project will require approval of a utility easement within a Zone I from MassDEP including, but not limited to, no fueling, no storage of oil and hazardous material (OHM), regular inspection for leaks, accessible spill containment materials, and a spills contingency plan. The proposed cables will not contain any liquids, oils, or other substances that could leak out of the cables and cause a release of OHM. The use of fertilizers, pesticides, herbicides, and other vegetation control will be prohibited within the area subject to any easement. Laydown/staging areas and refueling will be avoided within Zone I areas. Individual conduits used for each of the onshore cables will be entirely encased in concrete, and will not create a preferential pathway for contamination transport. The onshore cables will not contain any materials that could leach into surrounding soils and groundwater.

In addition to information provided in the DEIR, the Proponent held several meetings with the Town of Barnstable at which their concerns regarding water supply was discussed. The Proponent has also communicated with the Barnstable Water District and the DEIR indicates that the Barnstable Water District has expressed satisfaction with Project plans.

Cultural Resources

Both offshore and onshore components of the Project are located in areas with significant cultural resources associated with ancient and historic period Native American activities and colonial settlement. The project area includes a high density of shipwrecks and may include submerged ancient Native American cultural resources. The Project route contains numerous historic and archaeological resources which are either listed in the State and/or National Register of Historic Places, Inventory, or within local historic districts. The Project will require review from MHC pursuant to the Programmatic Agreement with BOEM as part of Section 106 of the NHPA. BUAR issued a Special Use Permit on September 28, 2017 for a marine archaeological reconnaissance survey in Barnstable, Martha's Vineyard, Nantucket, and Yarmouth. Activities allowed under this permit include archaeological reconnaissance and remote sensing, video documentation, benthic grab sample collection, and vibracore sampling in the permit area. MHC issued an archaeological permit to conduct a terrestrial archaeological reconnaissance survey for the onshore segment of the project.

The marine surveys were developed with BUAR, CZM and DMF to address data collection, including systematic sub-bottom coring and collection of geophysical data. The Proponent will provide upland and marine survey results to BUAR, MHC, CZM, and DMF as they are available.

The DEIR indicates that it is unlikely that natural/undisturbed soils or potentially significant archaeological deposits would be located below or immediately adjacent to previously disturbed public roadways or other ROWs. Based on an archaeological sensitivity assessment performed for the project, the majority of the Preferred Route and Noticed Alternative have been classified as having moderate sensitivity for archaeological resources along with isolated sections of low and high sensitivity. The Preferred Route extends through an area of high archaeological sensitivity and the Noticed Alternative extends through two areas of high sensitivity. A reconnaissance-level survey is underway to further assess whether these areas contain significant resources that are eligible for listing on the National Register.

The Preferred Route is adjacent to or within a National Register District (the Yarmouth Campground Historic District), a State Register District (the Old King's Highway Historic District), and 13 properties located on the Inventory including two archaeological sites. The DEIR describes additional cultural resources along variants of the Preferred Route (1, 2, and 5) and the Noticed Alternative. The DEIR indicates that cables and substation will not result in an adverse visual impact to historic properties and that construction and operation will not affect any historic buildings or structures.

Comments from MHC indicate that additional information is necessary to identify the area of potential effect and assess impacts. The DEIR indicates the Proponent will coordinate directly with MHC regarding the need for additional field surveys and, to the extent necessary, will develop impact avoidance and mitigation plans. Potential impacts to archaeological resources will be addressed with MHC through Section 106 and the State Register Review processes.

Port Facilities

The Proponent has signed a letter of intent with the Massachusetts Clean Energy Center (MassCEC) to use the New Bedford Marine Commerce Terminal for construction staging. The 26-acre facility is located on the New Bedford's industrial waterfront and was built to support offshore wind energy projects. The terminal is located within the ACOE hurricane barrier, has access to interstate highways and is located within a Designated Port Authority (DPA). The facility will be used to offload, prepare, and load components onto barges/vessels for delivery to the wind turbine array area for installation. It may also be used to fabricate and fit up components.

The Proponent may stage activities from other commercial seaports in the North Atlantic. The Proponent intends to use a port facility in Rhode Island to offload, store, and stage the turbine blades for delivery to the offshore Wind Development Area, as needed.

Hazardous Materials

The DEIR identifies Tier-classified disposal sites and sites with Activity and Use Limitations (AULs) that are located within the Project area which were previously or are currently regulated under M.G.L c.21E and the Massachusetts Contingency Plan (MCP) (310 CMR 40.0000) based on MassDEP Bureau of Waste Site Cleanup's MassGIS database. It indicates that there are no identified sites adjacent to the Preferred or Noticed Alternative onshore cable routes. The closest regulated disposal site to either route is located 2,400 feet from the Noticed Alternative. Construction-period impacts will be limited to the area immediately around the proposed cable route, and will not impact regulated disposal sites. The project will comply with applicable MCP requirements if contamination is unexpectedly encountered during construction and manage contaminated soil or other material along the project route pursuant to the provisions of a Utility Release and Abatement Measures (URAM).

Decommissioning

The DEIR describes decommissioning for elements within state jurisdiction including offshore export cables within state waters, onshore export cables, and onshore substation. For project elements within federal waters,[13] the Proponent is required to "remove or decommission all facilities, projects,

[13] unless otherwise authorized by BOEM.

cables, pipelines, and obstructions and clear the seafloor of all obstructions created by activities on the leased area, including any project easements(s) within two years following lease termination, whether by expiration, cancellation, contraction, or relinquishment, in accordance with any approved Site Assessment Plan (SAP), Construction Operations Plan (COP) or approved Decommissioning Application and applicable regulations in 30 CFR Part 585."

Decommissioning of the Project includes retirement in place or removal of offshore export cables and potential removal of onshore export cables. Equipment and vessels used during decommissioning will likely be similar to those used during construction and installation. Onshore export cables, concrete duct bank, vaults, and elements of the onshore substation and grid connections would be left in place for reuse. Removal of cables from the duct bank would likely involve truck-mounted winches, cable reels, and cable reel transport trucks. The process would consist of pulling the cables out of the duct bank, loading them onto truck-mounted reels, and transporting them off-site for recycling or reuse. Splice vaults, conduits, and duct banks will likely be left in place for reuse which would avoid traffic impacts.

Offshore cables could be retired in place or removed based on consultation with appropriate regulatory agencies. If removal is required, jet-plowing may be necessary in some areas of the cable trench to fluidize the sandy sediments covering the cables. Cables would be reeled onto barges and then transported to the port area for handling and recycling. Removal of protective rocks or concrete mattresses may occur prior to cable recovery. The DEIR indicates that the environmental impacts from these decommissioning activities would be generally similar to the impacts experienced during construction and that dredging is not anticipated.

Construction Period

The DEIR describes potential construction period activities and related permitting requirements and indicates that an Environmental Inspector, independent of the contractor, will provide oversight of construction activities. The DEIR describes potential construction period impacts associated with offshore and onshore elements. It includes a draft Construction Management Plan (CMP – Attachment C) that outlines feasible measures that will be implemented to eliminate or minimize impacts including, but not limited to, traffic management, soil management, air quality, noise, water quality, erosion and sedimentation, solid waste management, and archaeological resources.

The draft CMP identifies construction methodology, sequencing, potential staging areas and traffic management. The DEIR indicates that construction would not be conducted between Memorial Day and Labor Day. The Proponent indicates that fishing or transit will not be restricted in the offshore Project area, with the exception of required safety zones during construction or maintenance. The Proponent will continue to communicate consistent with the Fisheries Communication Plan and through Fisheries Liaisons and Fisheries Representatives to notify commercial fishing vessels of activity.

The DEIR identifies notification and construction protocols to be implemented if contamination is encountered during construction. Asphalt and concrete from open trenching activities will be handled separately from soil to allow for recycling at an asphalt batching plant and/or recycling facility. Waste materials generated during installation of the Project will be removed for recycling or disposal at a suitable facility. Packing crates and wood from equipment shipments will be reused or recycled to the extent practicable.

The DEIR indicates that vehicle idling will be minimized in compliance with the Massachusetts Idling regulation at 310 CMR 7.11.The Proponent will require contractors to use Ultra Low Sulfur Diesel (ULSD) fuel in all off-road construction equipment and limit idling time to five minutes. The Proponent will comply with the requirements of the MassDEP Diesel Retrofit Program. All diesel-powered construction equipment will either be EPA Tier 4–compliant or include EPA-verified (or equivalent) emissions control devices such as oxidation catalysts or other comparable technologies installed on diesel combustion engines. Marine engines will be certified by the manufacturer to comply with applicable marine engine emission standards.

Conclusion

Based on the selection of Vineyard Wind to proceed to contract negotiations, a review of the DEIR, consultation with State Agencies and review of comment letters, I have determined that the Proponent must file a SDEIR. The SDEIR should be developed consistent with the following Scope.

SCOPE

General

The SDEIR should follow Section 11.07 of the MEPA regulations for outline and content, as modified by this Scope. Additional recommendations provided in this Certificate may result in a modified design that enhances the ability to avoid, minimize, or mitigate Damage to the Environment. The SDEIR should discuss steps the Proponent has taken to further reduce the impacts of the project since the filing of the DEIR, or, if certain measures are infeasible, the SDEIR should discuss why these measures will not be adopted.

The DEIR includes a 2018 Survey and Sampling Plan for state and federal waters which indicates marine surveys will provide data to delineate site conditions, support selection of the most suitable cable routes and support micro-siting of cables within the corridor; will provide information regarding sensitive environmental resources for avoidance and/or mitigation of impacts; and will inform the final cable design and optional burial techniques given site conditions. The surveys are in progress and the Proponent is providing associated updates to resource agencies. If the marine surveys are completed prior to filing the SDEIR, the Proponent should incorporate data and reports into the SDEIR and describe how this information has informed routing, methods of cable installation and other relevant factors. If the surveys are not complete prior to filing of the SDEIR, the Proponent should include as much relevant data and reports as possible and address relevant findings. The provision of this information, in addition to previous surveys and available data, and resulting determinations regarding routing and installation will enhance the SDEIR, support evaluation of the project's consistency with the OMP, support assessment of the Ocean Development Mitigation Fee and could limit the scope of study required for subsequent MEPA review.

Project Description and Permitting

The SDEIR should describe any changes to the project since the filing of the DEIR. It should include updated site plans for existing and proposed conditions. Conceptual plans should be provided at a legible scale and clearly identify all: major project components; impervious areas; ownership of parcels including easement areas; stormwater, and utility infrastructure; and the location of wetland resource areas. The SDEIR should include a list of required Permits, Financial Assistance, or other State approvals and provide an update on status. In addition, the SDEIR should provide an update on the federal and local review and permitting processes. It should include a description and analysis of all statutory and regulatory standards and requirements such as the Section 401 WQC, and a discussion of the Project's consistency with those standards.

The SDEIR must include a description and plans that identify baseline environmental conditions and potential impacts for the purpose of State Agency and public review. It should include a description of existing conditions and plans for existing and post-development conditions for all project elements, including the WTGs, ESPs, submarine cable, onshore cable, HDD, and land-based facilities. It should clearly describe selected methods of cable installation and the route segments where each method will be used. The SDEIR should include a project schedule, describe construction sequencing and describe project phasing.

The SDEIR should include the Federal Consistency Statement submitted to CZM. The SDEIR should identify and describe measures to mitigate environmental impacts and provide updated and revised draft Section 61 Findings. The SDEIR should include a proposal for a comprehensive monitoring plan including information requested by CZM and other commenters. It should identify what will be monitored, methodology and frequency of monitoring, development of monitoring reports and distribution of monitoring reports.

Alternatives Analysis

The SDEIR should clearly identify the Preferred Alternative and alternatives that the Proponent will continue to evaluate (e.g., western and eastern routes through Muskeget, landfall sites at New Hampshire Avenue and Covell's Beach, variants of on-shore routes). The SDEIR should provide a complete description of the Preferred Alternative, a clear depiction and description of all resources and uses in or adjacent to the project footprint (including all areas of impact) and a summary of how the Preferred Alternative avoids or minimizes impacts to resources and uses compared to other alternatives. This information is necessary to demonstrate that the Project will avoid, minimize and mitigate environmental impacts. I received many comments requesting additional information regarding alternatives, in particular selection of New Hampshire Avenue as the preferred landing site, and provision of comparable information to effectively compare alternatives.

The SDEIR should describe proposed phasing for the cable installation and it should indicate if two or three offshore cables will be installed. If three cables continue to be proposed, the SDEIR should address the criteria used to make that determination and compare environmental impacts.

The Proponent has indicated its interest in retaining flexibility to advance the project through a "permitting envelope" approach. The MEPA Regulations include provisions to support flexibility of review and changes to projects over time, including the ability to advance more than one alternative to

permitting. This provision requires that the environmental impacts of alternatives have been adequately reviewed and that the alternatives are similar in terms of environmental impact. Specifically, the regulations at 301 CMR 11.10 (1) indicate that "*The selection by the Proponent or the imposition as a condition or restriction in a Permit or other relevant review document allowing or approving an Agency Action of any alternative that similarly avoids, minimizes or mitigates potential environmental impacts shall not constitute a change in the Project, provided that the alternative was previously reviewed in an EIR.*"

Ocean Management Plan

The SDEIR should build on information provided in the DEIR. It should demonstrate that the Project will comply with the management standards by identifying the project purpose and constraints, reviewing alternatives that would avoid SSUs (including alternative interconnection points from federal to state waters), providing sufficient details of existing and proposed conditions along the proposed cable route, documenting environmental impacts of the project and mitigation measures, and addressing its public benefits. SSU resources potentially impacted by the project include hard/complex seafloor, eelgrass and North Atlantic right whale core habitat.

To the extent possible, the SDEIR should update benthic conditions and boundaries of hard/complex bottom habitat along the cable route using available data and recent surveys. I refer the Proponent to comments from CZM and DMF regarding the information that should be presented in the SDEIR and/or FEIR including updated mapping of SSU resources (hard/complex seafloor and eelgrass), identification of specific areas of proposed construction activity (dredging, cable laying, vessel anchoring, dredged material deposition or disposal), and provision of more detailed anchoring plans.

The OMP includes mapped areas of commercial and recreational fishing and navigation in Nantucket Sound that could be affected by the project. The SDEIR should provide additional information to describe how cable installation could affect fishing, including restrictions on navigation, on fishing and on the placement of fixed or mobile fishing gear. The SDEIR should outline how the project will minimize impacts to recreational/commercial fishing activities and navigation by recreational/commercial boaters and commercial passenger vessels. In particular, the SDEIR should assess potential conflicts to navigation as vessels transit between ports and the offshore wind lease area and evaluate establishment of transit corridors to provide safe passage.

The Oceans Act established an Ocean Development Mitigation Fee to be assessed for offshore development projects. The purpose of the fee is to compensate the Commonwealth for impacts to ocean resources and the broad public interests and rights in the lands, waters and resources of the OMP areas. If the Project is permitted, the fee must be deposited in the Oceans and Waterways Trust.

The fee will be established through MEPA review. The OMP contains language and guidance as to the process and framework for determining the fee. Using the guidance and fee structure contained in the OMP, the information and analysis contained in the SDEIR and FEIR, consultation with agencies and public comment will inform my determination of the fee. Comments from CZM indicate that Category III is most applicable to the project. I note that environmental impacts associated with decommissioning could be considerable and should be considered, in addition to other factors, in determining project impacts and development of the Ocean Development Mitigation Fee.

The SDEIR should provide additional information regarding the $15 million Offshore Wind Accelerator Program and its three major components: $10 million Offshore Wind Energy Accelerator Fund; $2 million WindWard Workforce program; and $3 million for the Innovations for Marine Mammal Protection program.

Wetlands and Water Quality

The SDEIR should demonstrate that the Project will avoid, minimize or mitigate wetland resource area impacts to the maximum extent practicable. It should clearly outline a comprehensive wetland mitigation program that meets ACOE, MassDEP, and local bylaw requirements and performance standards. This mitigation program should include monitoring, construction period measures, and restoration. The SDEIR should address comments from MassDEP, CZM, DMF and others regarding identification of wetland resource area impacts and appropriate mitigation.

The SDEIR should specifically address comments from CZM and DMF regarding offshore cable installation. Estimates of length of hard/complex seafloor disturbed, volume of sand waves to be dredged and volume of fluidized sediment from hydroplowing should be updated using the most recent field data on sediment types, depths and the location and extent of hard/complex seafloor. The lengths, areas and volumes of disturbed seafloor should be recalculated. The Proponent should consider guidance provided by CZM regarding these calculations. In addition, field data and hydrodynamic modeling should be employed to characterize wave dynamics, currents and sediment transport, particularly in areas of sand waves, to ensure proposed burial depths will be sufficient to avoid armoring.

The SDEIR should discuss how a determination will be made as to whether the required cable burial depth and sediment cover have been attained and any additional burial or cable protection measures that may be necessary if the cable is not buried adequately, where possible.

The SDEIR should provide updated information on the construction methodology at the landfall sites (HDD and open trenching). The SDEIR should describe impacts associated with the transition between construction techniques, such as potential release of drilling fluid where the HDD meets the seafloor. The SDEIR should provide a contingency plan describing measures that will be undertaken to minimize and contain turbidity, sedimentation and release of drilling slurry during the drilling or trenching process.

The onshore segment of the Project is proposed within or proximate to the Zone I and Zone II of public water supplies, which are considered Critical Areas. The DEIR (Stormwater Management Report – Attachment O) indicates that this standard does not apply to the project. The SDEIR should acknowledge that Standard 6 Critical Areas should be applied to the project and identify whether additional protections will be required in the design of the stormwater management system to address this standard.

Waterways

The SDEIR should identify how impacts to navigation associated with the construction period and cable installation will be avoided and minimized. It should address potential impacts of armoring of the cable on commercial fishing operations. It should address how crossing of the NSTAR Yarmouth to Nantucket Cable and other offshore infrastructure will be addressed to avoid conflicts. It should also address how cable installation will be designed and installed to avoid, minimize and mitigate constraints

on municipal projects including potential future dredging needs or use of helical anchors within Lewis Bay.

Rare Species, Wildlife, and Marine Resources

The Covell's Beach Landfall Site intersects habitat for Piping Plover. Comments from NHESP anticipate that work associated with the Noticed Alternative route and occurring within habitat for Piping Plover, including nearshore and onshore aspects of the cable installation, may be subject to either a time of year (TOY) restriction (work prohibited from April 1 – August 31) or a protection plan, if work during the TOY restriction cannot be avoided. The Proponent should consult with NHESP if it expects to proceed with the Noticed Alternative route in advance of a formal MESA filing to discuss and resolve any potential rare species concerns.

The SDEIR should identify specific measures to avoid impacts to whales, turtles, and seabirds during construction. The SDEIR should consider use of acoustic monitoring during construction to protect whales and other marine species. The SDEIR should describe measures to mitigate disturbance associated with construction noise and to avoid ship strikes to whales and turtles. The SDEIR should provide information as to how the construction activities, particularly in Muskeget Channel, will be timed, staged, and sequenced to minimize impacts to the high density of diving and plunging birds that use the channel for seasonal foraging, in addition to turtles, whales, and other marine mammals. The SDEIR should address establishment of TOY restrictions and other mitigation measures to minimize impacts to species and habitats.

Comments from the Conservation Law Foundation (CLF), Natural Resources Defense Council, National Wildlife Federation, Mass Audubon, and Sierra Club (CLF et al.) note that critically endangered North Atlantic right whales have been observed in areas outside of the SSU in state and federal waters as they migrate along the eastern seaboard to their summer feeding grounds and winter breeding grounds. CZM comments indicate that mapped Sea duck core habitat is also present along the project footprint. The SDEIR should specifically address avoiding conflicts with marine mammals and assess the use of acoustic monitoring during installation activities. It should describe the size of vessels, the frequency and time of year of trips, and speed restrictions that will be observed.

The SDEIR should address comments from DMF and CZM regarding potential impacts to fisheries and other marine resources and measures to avoid, minimize, and mitigate these impacts along the length of the cable corridor and within the project area. It should assess the feasibility of adopting recommended TOY restrictions for certain activities, potential impacts on schedule and how phasing of certain activities could avoid work within these time periods.

The SDEIR should include a comprehensive characterization of the fish and fisheries resources in the Project area and their value. It should include a comprehensive discussion of the potential impacts of the cable installation process, and a statement of predicted recovery time for affected resources. It should include a narrative describing steps that will be taken to avoid and minimize impacts to eelgrass and winter flounder from turbidity associated with cable laying and dredging. The Proponent should consult with CZM, DMF, and NHESP regarding additional information necessary to further evaluate potential impacts of EMF on the behavior of marine species.

Traffic and Transportation

The SDEIR should identify changes to the Preferred Route or variants that will affect traffic. It should address MassDOT's suggestion regarding adoption of a Temporary Traffic Control Plan (TTCP) consistent with Federal Highway Administration (FHWA) and MassDOT guidelines. The SDEIR should provide an update on any consultations with MassDOT and affected municipalities.

Cultural Resources

As requested by MHC, the Proponent should provide to MHC a hardcopy of the COP and draft archaeological reports for the terrestrial and marine aspects of the project. MHC comments indicate that additional information is needed in the SDEIR to inform a determination of the project area of potential effect (APE) and comment on potential impacts to significant historic and archaeological resources. The SDEIR should provide an update on consultations and the results of studies and surveys conducted. It should identify measures proposed to avoid, minimize and/or mitigate impacts.

As recommended by BUAR, the DEIR should outline steps taken to limit adverse effects to submerged cultural resources and develop an unanticipated discovery protocol for such events in accordance with BUAR's *Policy Guidance for the Discovery of Unanticipated Archaeological Resources*.

Port Facilities

The SDEIR should identify potential use of port facilities in addition to the New Bedford Marine Commerce Terminal. It should address how potential conflicts with project-related vessels transiting to the Wind Development Area and other vessels along the route will be avoided and minimized. The SDEIR should provide additional information regarding the work that would be required for improvements to these ports and the associated resource area impacts and avoidance and minimization measures.

Decommissioning

The SDEIR should identify the timeline and funding mechanism for decommissioning of project elements. The SDEIR should discuss potential conflicts for future uses such as sewer or water mains within streets where splice vaults, conduits, and duct banks are left in place. It should identify potential environmental impacts associated with each decommissioning alternative.

Mitigation and Section 61 Findings

The SDEIR should include an updated and revised chapter that summarizes proposed mitigation measures and provides individual draft Section 61 Findings for each State Agency that will issue permits for the Project. The SDEIR should contain clear commitments to implement mitigation measures, estimate the individual costs of each proposed measure, identify the parties responsible for implementation, and contain a schedule for implementation.

Responses to Comments

The SDEIR should contain a copy of this Certificate and a copy of each comment letter received. In order to ensure that the issues raised by commenters are addressed, the SDEIR should include direct responses to comments to the extent that they are within MEPA jurisdiction. This directive is not intended, and shall not be construed, to enlarge the scope of the SDEIR beyond what has been expressly identified in this certificate. I recommend that the Proponent use either an indexed response to comments format, or a direct narrative response.

Circulation

In accordance with Section 11.16 of the MEPA Regulations and as modified by this Certificate, the Proponent should circulate a hard copy of the SDEIR to each State Agency and municipal agency from which the Proponent will seek permits or approvals. The Proponent must circulate a copy of the SDEIR to all other parties that submitted individual written comments on the ENF and DEIR.

In accordance with 301 CMR 11.16(5), the Proponent may circulate copies of the SDEIR to these other parties in a digital format (e.g., CD-ROM, USB drive) or by directing commenters to a project website address. However, the Proponent should make available a reasonable number of hard copies to accommodate those without convenient access to a computer and distribute these upon request on a first-come, first-served basis. The Proponent should send a letter accompanying the digital copy or identifying the website address of the online version of the SDEIR and indicate that hard copies are available upon request, noting relevant comment deadlines, and appropriate addresses for submission of comments. The SDEIR submitted to the MEPA office should include a digital copy of the complete document. A copy of the SDEIR should be made available for review at the public libraries in Yarmouth, Barnstable, Edgartown, Mashpee and Nantucket.

June 15, 2018
Date

Matthew A. Beaton

Comments received:

05/18/2018 Susan Brita (2nd comments on 06/14/2018)
05/23/2018 Recreational Fishing Alliance (RFA)
05/24/2018 Dr. David D. Dow
05/24/2018 Cape Cod Technology Council
05/27/2018 Marianne Sforza
05/31/2018 Roy and Diana Vagelos (2nd comments on 06/08/2018 (Roy Vagelos))
06/01/2018 Ryan Bushey
06/01/2018 Don Mallinson
06/01/2018 Annie Hayes (2nd comments on 06/08/2018)
06/01/2018 Rabbi Elias Lieberman
06/02/2018 Elizabeth Swanson, Ph.D.

06/04/2018 Denise Atwood
06/04/2018 Tom Soldini
06/04/2018 Kristin Daley
06/06/2018 Nicole Morris-McLaughlin, Southcoast Energy Challenge
06/06/2018 Cape Cod Chamber of Commerce
06/06/2018 Jeffrey K. Kominers
06/06/2018 Joanna DiTrapano
06/06/2018 Betc McNamara
06/06/2018 Paul Cove (2nd comments on 06/06/2018)
06/06/2018 Michelle LaRowe Conover
06/06/2018 Kathy DiTrapano
06/06/2018 Cape Cod Community College
06/07/2018 Association to Preserve Cape Cod (APCC)
06/07/2018 Raymond Barce (2nd comments on 06/07/2018)
06/07/2018 Vida Morris
06/07/2018 Sharon Bryan
06/08/2018 Massachusetts Historical Commission (MHC)
06/08/2018 Massachusetts Division of Marine Fisheries (DMF)
06/08/2018 Massachusetts Natural Heritage and Endangered Species Program (NHESP)
06/08/2018 Massachusetts Department of Transportation (MassDOT)
06/08/2018 Massachusetts Department of Environmental Protection (MassDEP)
06/08/2018 Martha's Vineyard Commission
06/08/2018 Town of Yarmouth
06/08/2018 Mass Audubon (1)
06/08/2018 Conservation Law Foundation (CLF), Natural Resources Defense Council (NRDC), National Wildlife Federation (NWF), Mass Audubon (2), and Sierra Club
06/08/2018 Lisa Coedy
06/08/2018 Justin Ingold
06/08/2018 Jan Kubiac
06/08/2018 Susan Starkey
06/08/2018 Arthur Warren (2nd comments on 06/08/2018)
06/08/2018 Kristin Moritz
06/08/2018 Alison Robb
06/08/2018 Sarah Jane Hughes
06/08/2018 Holly Alaimo
06/08/2018 Carol B. Chittenden
06/08/2018 Thomas J Sullivan Jr
06/08/2018 Stephen G. Tom
06/08/2018 Chris Powicki
06/08/2018 Christine Greeley
06/08/2018 John C. Henderson (duplicate attachment as body of email)
06/08/2018 Mothers Out Front MA
06/08/2018 Paul Minus
06/08/2018 William T. Lake
06/08/2018 Brian Harrington
06/08/2018 Richard Andre, Vineyard Power Cooperative
06/08/2018 Susan Brinckerhoff

06/08/2018 Laela Sayigh
06/08/2018 Megan Ottens-Sargent, Aquinnah Rep, BOEM Federal Task Force
06/08/2018 Nicola Blake
06/08/2018 Tom Cambareri
06/08/2018 Willa Bandler
06/08/2018 Grant Walker
06/08/2018 Jeffry M. Morrison
06/11/2018 MassDEP Waterways Program
06/11/2018 Massachusetts Office of Coastal Zone Management (CZM)
06/11/2018 Massachusetts Board of Underwater Archaeological Resources (BUAR)
06/14/2018 Massachusetts Lobsterman's Association (MLA)
06/15/2018 Town of Barnstable

MAB/PPP/ppp