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VINEYARD WIND

Draft Construction and Operations Plan

Volume III Appendices

Vineyard Wind Project

October 22, 2018

Submitted by

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Submitted to

Bureau of Ocean Energy Management
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Sterling, Virginia 20166

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In Association with:

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Swanson Environmental Associates
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October 22, 2018

Coastal Zone Management Act Consistency Certification

Vineyard Wind

Coastal Zone Management Act, Consistency Certification (15 CFR 930.57)

Vineyard Wind LLC (Vineyard Wind) has prepared this Consistency Certification to demonstrate that its proposed development within Bureau of Ocean Energy Management (BOEM) Lease Area OCS-A 0501 (Figure 1) is consistent with the provisions identified as enforceable by the Coastal Management Programs (CMPs) of the Commonwealth of Massachusetts and State of Rhode Island. As described herein and in the Construction and Operations Plan (COP) filed with BOEM on December 19, 2017, the proposed activity complies with the enforceable policies of the Massachusetts and Rhode Island approved management programs and will be conducted in a manner consistent with such programs. This document is provided pursuant to the requirements of 15 CFR 930.57 of the Coastal Zone Management Act (CZMA) Federal Consistency regulations.

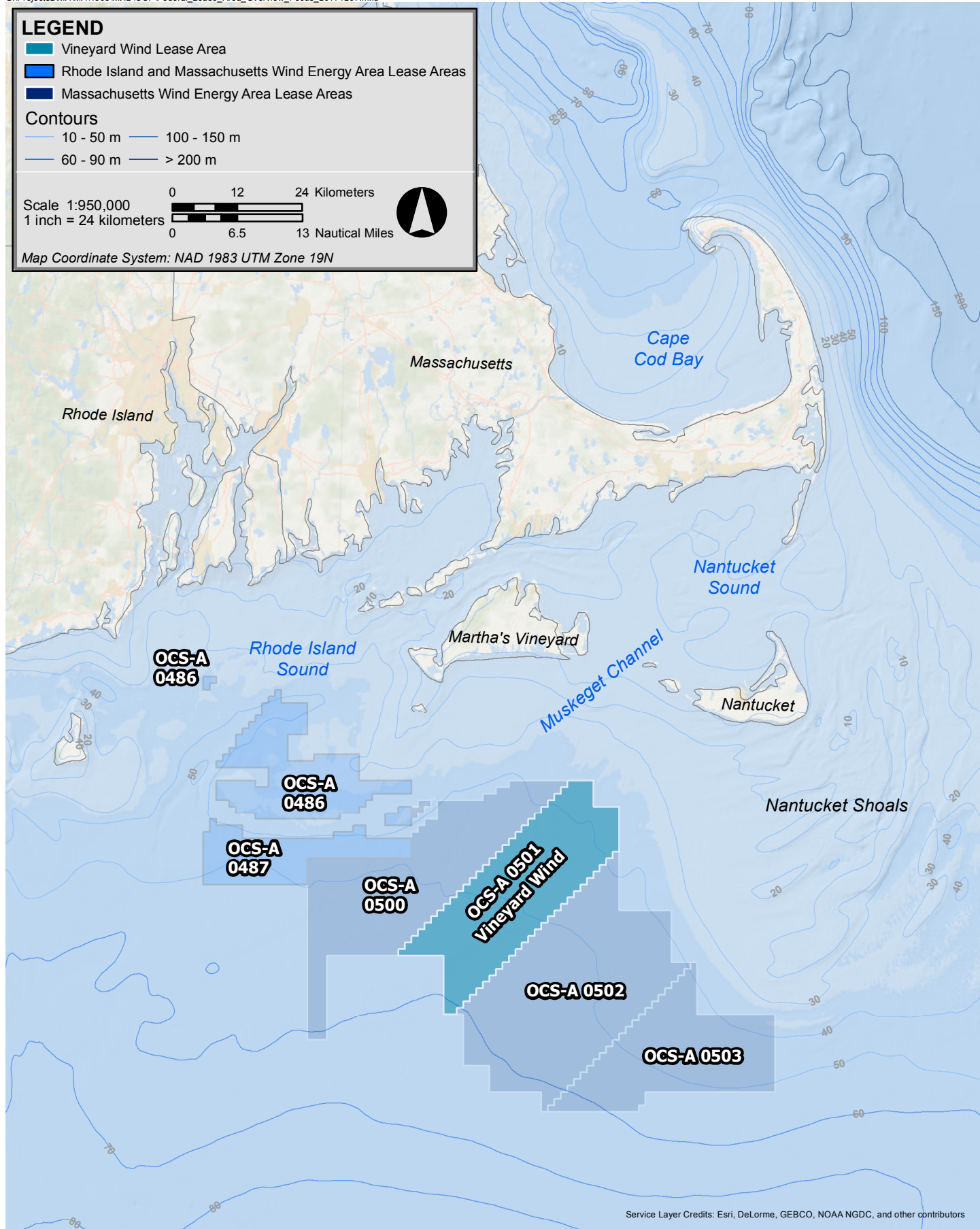
Section 307(c) (1) of the CZMA, as amended, requires that each federal agency activity within or outside the coastal zone affecting any land or water use or natural resource of the coastal zone shall be carried out in a manner which is consistent with the enforceable policies of federally-approved state management programs.

The Commonwealth of Massachusetts and State of Rhode Island share common coastal management issues and have similar enforceable policies as identified by their respective CMPs. Due to the proximity of the Vineyard Wind Lease Area to both states (Figure 1), and their shared impacts on environmental and socioeconomic resources and uses, Vineyard Wind has prepared a single consistency certification for the Project.

1.0 Background

Vineyard Wind is proposing an ~800 megawatt (MW) wind energy project within BOEM Lease Area OCS-A 0501, consisting of offshore Wind Turbine Generators (WTGs) (each placed on a foundation support structure), Electrical Service Platforms (ESPs), an onshore substation, offshore and onshore cabling, and onshore operations & maintenance facilities (these facilities will hereafter be referred to as the Project). The location of the Lease Area is depicted on Figure 1. As is described later in this document, the ~800 MW Project will be located in the northern portion of the over 675 square kilometers (km²) (166,886 acre) Lease Area (referred to as the Wind Development Area or WDA).

The Project is fully described in the COP and is summarized below.



Vineyard Wind Project



Figure 1
RI and MA Lease Areas Overview

2.0 Description Of Proposed Project

The Project consists of up to 106 offshore wind turbine generators (WTGs) arranged in a grid-like pattern located in the Atlantic Ocean south of Martha's Vineyard¹. The Project also includes up to four electrical service platforms (ESPs), inter-array cables connecting the WTGs to the ESPs, inter-link cables between ESPs, and two offshore export cables. Each WTG will independently generate approximately 8 to 10 MW of electricity and will interconnect with the ESPs via the inter-array submarine cable system. The offshore export cable transmission system connects the ESPs to a Landfall Site in either Barnstable or Yarmouth. It is approximately 158 kilometers (98 miles) in length, assuming that two export cables are used. After the offshore export cables are brought to shore at one of two potential Landfall Sites, the physical connection between the offshore export cables and the onshore export cables will be made in an underground concrete vault(s). The onshore export cable route, located principally in established right-of-ways, will connect the underground vault at the Landfall Site to a new onshore substation located within the Independence Park commercial/industrial area in Barnstable. The Project will then connect to the New England transmission system at Eversource's Barnstable Switching Station or the West Barnstable Switching Station.

The Lease Area is within the Massachusetts Wind Energy Area identified by BOEM, following a public process and environmental review, as suitable for wind energy development. The proposed ~800 MW Project is located within the northern portion of the Lease Area, referred to as the Wind Development Area (WDA). The WDA is 306 km² (75,614 acres). At its nearest point, the Lease Area is just over 23 kilometers (14 miles) from the southeast corner of Martha's Vineyard and a similar distance to Nantucket (see Figure 2.1-1 in Volume I of the COP).

The Project has significant environmental benefits. The electricity generated by the WTGs, which do not emit air pollutants, will displace electricity generated by higher-polluting fossil fuel-powered plants and significantly reduce emissions from the ISO New England power grid over the lifespan of the Project. Based on air emissions data for New England power generation facilities from EPA's Emissions & Generation Resource Integrated Database (eGRID), the Project is expected to reduce CO₂ emissions from the ISO NE system by approximately 1,630,000 tons per year (tpy). In addition, NO_x and SO_x emissions across the New England grid are expected to be reduced by approximately 1,050 tpy and 860 tpy, respectively. Furthermore, the Project is likely to benefit marine mammals and other marine life. These benefits include reduction in greenhouse gasses that induce climate change which in turn potentially impacts species' ranges and access to prey as prey species' shift or decline,

¹ Several refinements to the Project Envelope have been made since submitting this Consistency Certification to the Coastal Management Programs (CMPs) of the Commonwealth of Massachusetts and State of Rhode Island. For example, although the Project is including 106 WTG positions in the Project Envelope, only up to 100 positions will be occupied by a WTG. The Project has also eliminated the option to install light-weight ESPs.

a particular concern for migratory species, such as some baleen whales which rely on high-latitude areas for feeding. In addition to these important environmental benefits, the Project is expected to bring significant employment and other economic benefits to the south coast of Massachusetts and the region. Finally, the Project should be an important foundational step in creating a thriving, utility scale, domestic offshore wind industry.

2.1 Design Envelope/Phasing

The Project is being developed and permitted using an “Envelope” concept. The evolution of offshore wind technology and installation techniques often outpaces the speed of permitting processes. The Envelope concept allows for optimized projects once permitting is complete while ensuring a comprehensive review of the project by regulators and stakeholders, as BOEM recognized in its National Offshore Wind Strategy. The flexibility provided in the Envelope is important because it precludes the need for numerous permit modifications as infrastructure or construction techniques evolve after permits are granted but before construction commences. The parameters of the Envelope are presented in Table 2.1, with the maximum design scenario for environmental analysis. Construction of the ~800 MW Project will be continuous and is expected to start in late 2019.

Table 2-1 Vineyard Wind Project Envelope with Maximum Design Scenario

CAPACITY	Maximum	
Wind Farm Capacity	~800 megawatt (“MW”)	
WIND TURBINE GENERATORS	Smallest Turbine	Largest Turbine
Turbine Size	8 MW	10 MW
Total Height ¹	191 meters (“m”) (627 feet [“ft”])	212 m (696 ft)
Number of Positions (up to) ²	~ 8 MW WTGs	~ 10 MW WTGs
	106	88
FOUNDATIONS		
Foundation Envelope	Combination of at least 400 MW monopiles and up to 400 MW jackets: -100% monopiles or -Up to 50% jackets, remainder monopiles	
Foundation Type	Jackets (Pin Piles)	Monopiles
Number of Piles/Foundation	3-4	1
Maximum Area of Scour Protection at each Foundation	up to 1800 square meters (“m ² ”) (19,375 square feet [“ft ² ”])	up to 2100 m ² (22,600 ft ²)
Maximum Number of Foundations Installed per Day (24 hours)	2 (up to 8 pin piles)	2

Table 2.1 Vineyard Wind Project Envelope with Maximum Design Scenario (Continued)

CAPACITY	Maximum	
ELECTRICAL SERVICE PLATFORMS		
ESP Type	Light-weight ESP	Conventional ESP
Number of ESPs	4	1-2
Foundation Types for Conventional or Light-weight ESP	Monopiles	Jackets
Number of Piles/Foundation	1	3-4
Maximum Area of Scour Protection at each Foundation	up to 2100 m ² (22,600 ft ²)	up to 2500 m ² (26,900 ft ²)
Maximum Height above Mean Low Water (“MLLW”)	65.5 m (215 ft)	66.5 m (218 ft)
INTER-ARRAY CABLES		
Inter-array Cable Voltage	66 kilovolts (“kV”)	
Maximum Length of Inter-array Cables	275 kilometers (“km”) (171 miles [“mi”])	
EXPORT AND INTER-LINK CABLES		
Export and Inter-link Cable Voltage	220 kV	
Maximum Length of Inter-link Cable ³	10 km (6.2 mi)	
Maximum Number of Export Cables	2	
Maximum Length of Offshore Export Cables(for two export cables)	158 km (98 mi)	

Notes:

Maximum Design Scenario indicated by double lined box and bold text.

1. Turbine output not necessarily proportionately linked to size, so smallest turbine size may not be an eight MW turbine.
2. Additional positions included account for spare positions as well as added capacity to account for electrical losses.

2.2 Construction and Installation

2.2.1 Offshore Activities and Facilities

The Project's offshore elements include the wind turbine generators (WTGs) and their foundations, the electric service platforms (ESPs) and their foundations, scour protection for all foundations, the inter-array cables, the inter-link cable that connects the ESPs, and the offshore export cables. The WTGs, the ESPs, the inter-array cables, the inter-link cable, and portions of the offshore export cables are located in federal waters. The balance of the export cable run is located in Massachusetts waters.

2.2.1.1 Wind Turbine Generators

The Project will install 8 MW to 10 MW WTGs. If 8 MW turbines are used, up to 106 WTGs will be installed; if 10 MW turbines are used, up to 88 WTGs will be installed. The site layout for up to 106 turbines is shown on Figure 3.1-2 in Volume I of the COP.

The WTGs are arranged in a grid-like pattern. Spacing between WTGs will vary from approximately 1,400 m to over 1,850 m (0.76 to 1.0 nautical miles)² with a one nautical mile wide corridor (1,850 m) running from northwest to southeast and a second one nautical mile wide corridor running from northeast to southwest within the grid design.

The WTGs consists of two main components, the rotor nacelle assembly (RNA) and the Tower. The nacelle houses the energy-generating components of the turbine, including the gear box, generator, controller, low- and high-speed shafts, and brake. A pitch and yaw system will allow the wind turbine to optimize its performance by positioning the direction of the rotor and the angle of the blades. The brake, pitch, and yaw systems may be controlled using hydraulics. The RNA is mounted on the steel tower which is mounted on a foundation and/or transition piece via a bolted connection. The WTGs will have three-bladed rotors manufactured from fiberglass and carbon, which are connected to a steel hub.

The WTGs will be no lighter than RAL 9010 Pure White and no darker than RAL 7035 Light Grey in color to reduce their visibility against the horizon. In accordance with FAA requirements and/or BOEM guidelines, two synchronized Federal Aviation Administration (FAA) "L-864" aviation red flashing obstruction lights will be installed on each WTG nacelle. Depending upon commercial availability and regulatory approval, the Project will use either an Aircraft Detection Lighting System (ADLS) that is activated automatically by approaching aircraft or a system that automatically adjusts lighting intensity to accommodate visibility conditions to reduce potential impacts. If the use of ADLS is not feasible, reduced lighting for the interior will be reviewed and discussed with BOEM and the FAA. Marine navigation lighting will consist of two yellow flashing lights at each turbine and lights on the corners of ESPs approximately 20 - 23 m above MLLW. In accordance with International Association of Lighthouse Authorities (IALA) guidance, each WTG foundation will be painted with high visibility yellow paint from the water line to an approximate height of at least 15m (50 ft). Sound signals and AIS transponders are included in the project design to enhance marine navigation safety.

The WTG parameters are provided in the table below and are shown on Figure 3.1-1 in Volume I of the COP.

² The listed dimensions describe the typical grid spacing. The minimum distance between nearest turbines is no less than 1.2 km (0.65 nm) and the maximum distance between nearest turbines is no more than 2.1 km (1.1 nm). The average spacing between turbines is 1.6 km (0.86 nm).

Table 2-2 WTG Parameters

WTG Parameter	Envelope
Tip height	191-212 m (627-696 ft) MLLW*
Hub height	109-121 m (358-397 ft) MLLW
Rotor diameter	164-180 m (538-591 ft) MLLW
Platform level and expected Interface level towards foundations	19-23 m (62-75 feet) MLLW
Tip clearance	27-31 m (89-102 ft) MLLW

Note: MLLW is mean lower low water, which is the average height of the lowest tide recorded at a tide station each day during the recording period. Elevations relative to mean higher high water are approximately 1 m (3 ft) lower than those relative to MLLW.

The WTGs are expected to be amongst the most efficient renewable energy generators currently demonstrated for offshore use.

The WTGs will be installed with one or two jack-up or dynamic positioning (DP) vessel(s). The tower will first be erected followed by the nacelle and finally the hub, inclusive of the blades. Alternatively, the nacelle and hub could be installed in a single operation followed by the installation of individual blades. The WTG installation phase represents the most intense period of vessel traffic in the offshore site with wind turbine foundations, inter-array cables and wind turbines being installed in parallel; however, this is a relatively short time period compared to the life of the Project.

2.2.1.2 WTG Foundations

The WTG foundations will either be all monopiles or a combination of monopiles and jackets. Jackets are expected to be used in deeper water locations. Scour protection will be used to protect the foundations from scour development, which is the removal of the sediments near structures (such as the foundation) by hydrodynamic forces. Scour protection consists of the placement of stone or rock material that can withstand the increase seabed drag that is created by the presence of the foundation.

The monopile is a single, hollow cylinder fabricated from steel that is secured in the seabed. The diameter of the monopiles will range from 7.5 to 10.3 meters (25 to 34 feet) and will be driven into the seabed approximately 20 to 45 meters (66 to 148 feet) depending upon seabed conditions and water depths (Figure 3.1-3 in Volume I of the COP). Each monopile will typically be topped by a transition piece (Figures 3.1-3 and 3.1-4 in Volume I of the COP), although in some cases an extended monopile may be used (no transition piece; Figure 3.1-5 in Volume I of the COP). The transition piece provides a level surface for the WTG tower above it and contains secondary structures, such as tower flange for mounting the WTG, boat landing, internal and external platform, and various electrical equipment needed during installation and operation.

The Jacket design concept consists of 3-4 piles, a large lattice jacket structure and a transition piece (TP), see Figures 3.1-6 through 3.1-8 in Volume I of the COP. The jacket will also contain secondary structures, such as boat landings and cable tubes. The piles for the jacket foundation will range from 1.5 to 3 meters (5 to 10 feet) and will be driven into the seabed approximately 30 to 60 meters (98 to 197 feet), depending on seabed conditions and water depths.

The monopiles (or jackets) are expected to be installed by one or two heavy lift or jack-up vessel(s). Anchored vessels will not be used as primary construction and installation vessels within the WDA. Any anchoring that does occur within the WDA will occur within the Area of Potential Effect (APE) defined in Volume II-C of the COP and shown on Figure 3.1-19 in Volume I of the COP. Pile driving will begin with a “soft-start” to ensure that the monopile remains vertical and allow marine life to move away before the pile driving intensity is increased. The intensity (hammer energy level) will be gradually increased based on the resistance that is experienced from the sediments. Typical pile driving for a monopile is expected to take less than approximately three hours to achieve the target penetration depth. It is anticipated that a maximum of two monopiles or one complete jacket could be driven into the seabed per day. No drilling of monopiles is anticipated, but it could be required if a large boulder or monopile refusal is encountered.

2.2.1.3 Electrical Service Platforms (ESPs)

The ESP(s) will serve as the common interconnection point for the WTGs within the array. Each WTG will interconnect with the ESP via a 66kV submarine cable system. These cable systems will interconnect with circuit breakers and transformers located on the ESP to increase the voltage level and transmit wind-generated power through the offshore export cable systems to the final connection point to the New England Transmission System.

The Project may use one 800 MW conventional ESP, two 400 MW conventional ESPs, or two sets of two light-weight ESPs that are bridged together at one location. Like the WTGs, the ESPs will be secured to the seabed with either a monopile or jacket foundation and will also have scour protection. The foundations for the ESPs will be installed in the same manner as the WTG foundations. The ESP will have a maximum height above MLLW of approximately 65.5 meters to 66.5 meters (215 to 218 feet) depending upon the foundation used. The approximate size and design of topside components of conventional ESPs are depicted in Figures 3.1-10 through 3.1-13 in Volume I of the COP). If multiple ESPs are used, each ESP will be inter-linked with a inter-link cable the same 220 kV cable as used for the export cable. Figure 3.1-14 in Volume I of the COP provides representative pictures of ESPs installed in Europe.

2.2.1.4 Inter-array Cables

The WTG's will be connected to the ESPs via 66kV inter-array cables. The expected cable type is a three-core alternating current ("AC") cable, which will also be the type of cable used for export cables, described in Section 2.2.1.5.

The inter-array cables will connect radial "strings" of 6 to 10 WTGs to the ESPs. The inter-array cable system will be designed and optimized for the Project during the final design and will consider cable design and capacity, ground conditions, Project operating conditions, installation conditions, and potential cultural resources. Therefore, the Envelope for the inter-array cables includes any potential layout within the WDA. One potential layout is provided as Figure 3.1-18 in Volume I of the COP, for illustrative purposes. As shown in Figure 3.1-18, the farthest WTG will have one outgoing connection and each subsequent WTG will have both an incoming and outgoing cable. The maximum anticipated length of the inter-array cables for an ~800 MW Project is approximately 275 km (170.8 miles). The inter-array cables are anticipated to be installed up to 1.5 to 2.5 meters (4.9 to 8.2 feet) below the seafloor, likely by jetting or jet plow embedment, after the cables are placed on the seafloor.

2.2.1.5 Offshore Export Cables

Two offshore export cables will connect the ESPs to the bulk power grid. Each offshore export cable, as well as the inter-link cables that connect the ESPs together, will be comprised of a three-core 220 kV AC cable for power transmission and one fiber optic cable for communication and temperature measurement, which serves to monitor the high-voltage system. The three-cores of the cable consist of three copper or aluminum conductors which will each be encapsulated by cross-linked polyethylene (XLPE) insulation and waterproof sheathing will prevent the infiltration of water.

Each of the export cables will be installed below the seafloor. In certain locations, sand waves are present, and since part of the sand waves may be mobile over time, the upper portions of the sand waves may need to be dredged so that the cable laying equipment can achieve the proper burial depth below the sand waves and into the stable sea bottom. Where required, dredging will occur within a 20 m (66 foot) wide dredged corridor by various techniques depending upon site conditions. Dredge volumes are dependent on the final route and cable installation method: a cable installation method that can achieve a burial depth of 2.5 m will require less dredging; a cable installation method that can achieve a burial depth of 1.5 m will require more dredging. The average dredge depth is 0.5 meters and may range up to 4.5 meters in localized areas. The maximum length of export cables (assuming two cables) is 158 kilometers (98 miles).

The majority of the export and inter-link cable is expected to be installed using simultaneous lay and bury via jet plowing or one of the other techniques listed in Section 4.2.3.3.2 of Volume I of the COP. However, other methods may be needed in areas of coarser or more consolidated sediment, rocky bottom, or other difficult conditions in order to ensure a proper

burial depth. While anchored vessels are not expected to be the primary vessels used for cable installation, some anchored vessels may be needed along portions of the cable route. It is expected that there will be some areas where it will be difficult to achieve the proper burial depth. In those areas the cable will be protected by techniques such as placing rocks on top of the cable or placing prefabricated flexible concrete coverings on top of the cable (referred to as concrete mattresses).

There is one primary Offshore Export Cable Corridor (“OECC”) with two route options through Muskeget Channel and two potential Landfall Sites (see Figure 3.1-15 in Volume I of the COP). The OECC will pass through Muskeget Channel, turn west, and will make landfall either at Covell’s Beach parking lot in the Town of Barnstable or New Hampshire Avenue/Lewis Bay in the Town of Yarmouth.

2.2.2 Onshore Activities and Facilities

2.2.2.1 Landfall Site and Onshore Export Cable Route

The offshore export cable will make landfall at either New Hampshire Ave or Covell’s Beach. The New Hampshire Avenue landing site is located inside Lewis Bay where a road dead-ends just west of Englewood Beach at a low concrete bulkhead. A paved parking area is located approximately 300 feet north of the dead-end where construction staging operations could occur. The Covell’s Beach landing site is located on Craigville Beach Road near the paved parking lot entrance to a public beach that is owned and managed by the Town of Barnstable.

In both cases, the ocean to land transition could be made using Horizontal Directional Drilling (HDD). The HDD rig would be setup in a parking lot or other previously disturbed area; the drill would be advanced seaward. However, the Lewis Bay/New Hampshire Ave landing area may be suitable for a direct lay approach. This landing area is unique in that the shoreline area has been entirely altered with manmade structures (road, sea wall, riprap, etc.). Moreover, there is no eelgrass or other sensitive habitat in the shallow water immediately offshore from the end of New Hampshire Ave.

Upon making landfall, the transmission line would follow one of two potential routes to connect the underground vault at the Landfall Site to the new onshore substation (Figure 2.2-1 in Volume I of the COP). For both routes, the onshore cables will be located entirely underground, primarily beneath public road right-of-ways with some shorter stretches in existing electric or railroad ROWs. The underground onshore cable routes are approximately 9 to 10 km (5.4 to 6.0 miles) in length.

The physical connection between the offshore export cables and the onshore export cables at the Landfall Site will be made in an underground concrete vault(s). From the surface, the only visible components of the cable system are the manhole covers. Inside the vault(s), each three-core submarine cable will be separated and spliced into three separate single-core cables and placed within a single duct bank. The duct bank is constructed using heavy wall

PVC pipes encased in concrete. The duct bank installation is done with conventional construction equipment (e.g., hydraulic excavator, loader, dump trucks, flatbed trucks to deliver PVC pipe, crew vehicles, cement delivery trucks, paving equipment). Once the duct bank is in place, the cables are pulled into place via underground splice vaults and associated manholes, which are placed every 457 to 607 m (1,500 to 2,000 ft) or more along the duct bank.

2.2.2.2 Onshore Substation

The onshore substation site will be constructed on the eastern portion of a previously developed site, adjacent to an existing substation, within the Independence Park commercial/industrial area in Barnstable. The buried duct bank will enter the substation site by way of an access road that provides access to the electric transmission corridor from Mary Dunn Road. The substation will house up to four 220 kV /115 kV “step-down” transformers, switchgear, and other necessary equipment. The Project will connect to the bulk power grid via available positions at Eversource’s Barnstable Switching Station, located just to the north of the substation site, though Vineyard Wind is also including the option to connect at the West Barnstable Switching Station. If a connection is made at West Barnstable, the Project substation would include step-up transformers (220 kV to 345 kV).

2.2.2.3 Port Facilities

Vineyard Wind has signed a letter of intent to the use the New Bedford Marine Commerce Terminal facility to support Project construction; the terminal is owned by the Massachusetts Clean Energy Center. The 26-acre New Bedford facility, located on the City’s extensive industrial waterfront, was purposely built to support offshore wind energy projects. The terminal is just upstream of the Army Corps of Engineers hurricane barrier and has ready access to interstate highways.

The New Bedford facility is expected to be used to offload shipments of components, prepare them for installation, and then load components onto jack-up barges or other suitable vessels for delivery to the lease area for installation³. Some component fabrication and fitup may take place in New Bedford or other nearby ports as well.

Given the scale of the Project and the possibility that one or more other offshore wind projects may also use portions of the 26-acre New Bedford facility in parallel with Vineyard Wind, it is possible that Vineyard Wind may stage certain activities from other Massachusetts, Rhode

³ Monopiles may not be loaded onto vessels for transport but may instead be pulled by tugs while floating in the water.

Island, Connecticut, or Canadian ports. These possible ports are listed in Table 2-3. Consequently, one or more of the ports listed in Table 2-3 may be used during construction of the Project.

Each port facility being considered for the Project is located within an industrial waterfront area and was selected for further evaluation, in part, based on the port's existing infrastructure and capacity to host construction and installation activities. The greatest distance from a potential port to the WDA is 188 nautical miles (this value represents the distance between the WDA and the point where a vessel leaving a potential Canadian port enters the US Exclusive Economic Zone)⁴.

Table 2-3 describes the ports that may be used during construction. See Table 2-4 in Section 2.3.2 for a discussion of ports used by the Project during O&M. Vineyard Wind will not direct or implement any port improvements that may be made. Rather, Vineyard Wind will consider whether the ports are suitable for Vineyard Wind's needs if and when any necessary upgrades are made by the owner/lessor.

Table 2-3 Possible Ports Used During Construction

Port
Massachusetts Ports
New Bedford Marine Commerce Terminal
Other areas in New Bedford Port
Brayton Point
Montaup
Rhode Island Ports
Providence
Quonset Point
Connecticut Ports
New London
Bridgeport
Canadian Ports
One or more Canadian ports

Note: Ports used during Operations and Maintenance are described in Table 2-4.

2.3 Operations and Maintenance

2.3.1 Offshore Activities and Facilities

The WTGs are designed to operate without attendance by any operators. Continuous monitoring is conducted using a supervisory control and data acquisition (SCADA) system from a remote location. Examples of parameters that are monitored include temperature

⁴ Vessels traveling from Europe to New Bedford may travel farther through US waters (approximately 300 nautical miles).

limits, vibration limits, current limits, voltage, smoke detectors, etc. The WTG also includes self-protection systems that will be activated if the WTG is operated outside its specifications or the SCADA system fails. These self-protection systems may curtail or halt production or disconnect from the grid.

Weather conditions will also be monitored. The forecasts will cover key parameters covering both meteorological (wind, temperature, visibility, warnings (e.g. lightning), as well as oceanographic parameters (wave conditions). In addition, it is likely that a small weather station (wind, temperature sensors) will be installed on the ESP, as such operations personnel will have an indication of real time conditions offshore which can be used to support the planning and execution of work.

Routine inspection and maintenance activities will be performed for all offshore facilities and may include such things as multi-beam echosounder inspections, side scan sonar inspections, depth of burial inspections, and other geophysical surveys.

2.3.2 Onshore Activities and Facilities

In support of Project operations and the necessary maintenance activities, operations and maintenance facilities (O&M Facilities) will be developed that include offices, a control room, training space for technicians and engineers, shop space, and warehouse space for parts and tools. These functions will be co-located, if feasible.

The O&M Facilities will also include pier space for crew transport vessels (CTV) and other larger support vessels. CTVs are purposely built to support offshore wind energy projects; they are typically about 23 m (75 ft) in length and are set up to safely and quickly transport personnel, parts and equipment. It is expected that approximately 1-2 CTV trips will occur daily during the operation period.

The CTVs are typically used in conjunction with helicopters. Helicopters can be used when rough weather limits or precludes the use of CTVs as well as for fast response visual inspections and repair activities, as needed. The helicopter(s) used to support O&M operations would ideally be based at a general aviation airport in reasonable proximity to the O&M Facilities.

Vineyard Wind plans to locate the Project's O&M Facilities in Vineyard Haven on Martha's Vineyard. However, Vineyard Wind intends to use port facilities at both Vineyard Haven and the New Bedford Terminal to support O&M activities (see Table 2-4). Smaller vessels (e.g. CTVs or SOVs) used for O&M activities will likely be based out of Vineyard Haven. Larger vessels used for major repairs during O&M (e.g. jack-up vessels, heavy cargo vessels, etc.) would likely use the New Bedford Terminal. Improvements to Vineyard Haven may be needed to accommodate Vineyard Wind's needs, such as improvements to existing marine infrastructure (e.g., dock space for CTVs, access, etc.) and to structures (office and warehouse space). It is expected that any needed improvements would be coordinated with lessor.

Table 2-4 Possible Ports Used During O&M

Port	Types of Improvements That May Be Required (To Be Completed by Port Owner/Operator Prior to Use by Vineyard Wind)
Massachusetts Ports	
New Bedford Marine Commerce Terminal	N/A. The New Bedford Terminal was specifically developed to accommodate offshore wind development.
Vineyard Haven	Improvements to existing marine infrastructure (e.g., dock space for CTVs, access, etc.) and to structures (office and warehouse space). It is expected that any needed improvements would be coordinated with the lessor.

2.4 Decommissioning

2.4.1 Offshore Activities and Facilities

As currently envisioned, the decommissioning process is essentially the reverse of the installation process. Decommissioning of the Project is broken down into the following steps:

- ◆ Retirement in place or removal of offshore cable system (e.g., 66 kV inter-array and 220 kV offshore export cables).
- ◆ Dismantling and removal of WTGs.
- ◆ Cutting and removal of monopile foundations (and/or jackets) and possible removal of scour protection.
- ◆ Removal of ESPs.
- ◆ Possible removal of onshore export cables.

The offshore export cables could be retired in place or removed, subject to discussions with the appropriate regulatory agencies on the preferred approach to minimize environmental impacts. If removal is required, the first step of the decommissioning process would involve disconnecting the inter-array 66 kV cables from the WTGs. Next, the inter-array cables would be extracted from their embedded position in the seabed. If protective mattresses or rocks were used to cover portions of the cables, they are expected to be removed prior to recovering the cable.

Prior to dismantling the WTGs, they would be properly drained of all lubricating fluids, according to the established operations and maintenance procedures and the OSRP. Removed fluids would be brought to a port area for proper disposal and / or recycling. Next,

the WTGs would be deconstructed (down to the transition piece) in a manner closely resembling the installation process. It is anticipated that almost all of the WTG will be recyclable, with the potential exception of fiberglass components.

After removing the WTGs, the steel transition pieces and foundation components would be decommissioned. Sediments inside the foundations may be removed and temporarily stored on a barge to allow access for cutting. The foundation and transition piece assembly is expected to be cut below the seabed using one or a combination of: underwater acetylene cutting torches, mechanical cutting, or a high-pressure water jet. The portion of the foundation below the cut will likely remain in place. The cut piece(s) would then be lifted out of the water and placed on a barge for transport to an appropriate port area for recycling. Sediments that were previously removed from the inner space of the foundation would be replaced after the foundation is removed. To minimize sediment disturbance and turbidity, a vacuum pump and diver or ROV-assisted hoses would likely be used.

Subject to consultation with the fishing community, appropriate marine fisheries agencies and BOEM approval of the decommissioning plan, the stone scour protection pads could be left in place. Given the very uniform sandy bottom conditions, the stone scour pads could provide useful habitat diversity and will likely have been in place for at least two decades. If removed, the stone would likely be excavated with a clamshell dredge, placed on a barge, and returned to shore for reuse or disposal at an onshore location.

The process of disassembling the ESPs and their foundations will closely resemble the process used to dismantle the WTGs and their foundations.

The decommissioning of the offshore facilities would require the involvement of an onshore recycling facility with the ability to handle the large quantities of steel and other materials from the Project. There are such facilities currently in operation in New England. Currently, the fiberglass in the rotor blades has no commercial scrap value. Consequently, it is anticipated that the fiberglass from the blades would be cut into manageable pieces and then disposed of at an approved onshore solid waste facility.

2.4.2 Onshore Activities and Facilities

Decommissioning of onshore facilities would be coordinated closely with the host town to ensure that decommissioning activities meet the host town's needs and have the fewest environmental impacts. Subject to those future discussions, it is envisioned that the onshore cables, the concrete encased duct bank itself, and vaults would be left in place for future reuse as would elements of the onshore substation and grid connections. If onshore cable removal is determined to be the preferred approach, removal of cables from the duct bank would be done using truck mounted winches, cable reels and cable reel transport trucks.

3.0 State Enforceable Policies

As part of this consistency certification, Vineyard Wind has evaluated and documented in the following table (Table 3-1) policies identified by Massachusetts and Rhode Island as enforceable, applicable offshore and coastal resources or uses, and CZMA “reasonably foreseeable coastal effects” that might be expected for activities conducted under the proposed action. While reviewing and making these certifications on the policies the states have identified as enforceable in this consistency certification, Vineyard Wind has considered the common enforceable policies identified by each of the two states as enforceable in their CMP as listed in Table 3-1.

4.0 Consistency Certification

Vineyard Wind has evaluated all applicable enforceable policies of Massachusetts and Rhode Island and the potential activities resulting from the Project. This consistency certification has examined whether the proposed action described in Sections 1 and 2 is consistent with the policies and provisions identified as enforceable by the CMPs of Massachusetts and Rhode Island (see Table 3-1). Based on the preceding information and analyses, and the incorporated-by-reference COP, Vineyard Wind has certified that the proposed activity described in detail herein and in the COP complies with the enforceable policies of the Massachusetts and Rhode Island approved management programs and will be conducted in a manner consistent with such programs.

Table 3-1 Applicable Enforceable Policies for the Coastal Management Programs for Massachusetts and Rhode Island

CATEGORY	ENFORCEABLE POLICIES: APPLICABLE COASTAL ZONE MANAGEMENT RULES	REASONABLY FORESEEABLE COASTAL EFFECTS (CZMA COASTAL EFFECTS)
Coastal Hazards	<p>Coastal Hazards Policies #1 - 4 (MA)</p> <p>Massachusetts Wetland Protection Act (M.G.L. c.131,§40) (MA)</p> <p>Massachusetts General Law Chapter 91 (MA)</p> <p>RI SAMP Section 1160.2.3 Areas of Particular Concern (RI)</p> <p>RI SAMP Section 1160.3 - 4 Prohibitions and Areas Designated for Preservation and Other Areas (RI)</p>	<p>See Section 6.4 of Volume I of the Construction and Operations Plan (COP) for additional information on impacts to coastal habitats and coastal wetland habitats and ecosystems.</p> <p>Potential impacts to coastal wetlands associated with the Vineyard Wind Project (the "Project") may occur where the offshore export cables make landfall; however, through careful route selection and proper use of construction techniques, the Project is designed to avoid potential wetlands impacts to the maximum extent practicable.</p> <ul style="list-style-type: none"> • Construction Techniques/Coastal Beach Resource Area: At the Landfall Site at New Hampshire Avenue in Yarmouth, Vineyard Wind prefers a direct lay technique but is also considering the use of horizontal directional drilling (HDD). Using a direct lay approach, construction would be completed in a shorter period of time, thus minimizing the duration of construction within Lewis Bay and the neighborhood along New Hampshire Avenue. The only coastal landform the direct lay technique would affect would be a small degraded coastal beach that is bordered on each side by existing bulkheads, and a manmade concrete seawall that backs the coastal beach; this impact would be approximately 1,500 square feet. At the Covell's Beach Landfall Site, the transition from offshore to onshore cable would be installed via HDD to avoid impacts to the most sensitive resource areas along and near the shoreline. • Coastal Dune Resource Areas: If the New Hampshire Avenue or Covell's Beach Landfall Sites are used, there will be no impacts to Coastal Dune, as defined in 310 CMR 10.28.

Table 3-1 Applicable Enforceable Policies for the Coastal Management Programs for Massachusetts and Rhode Island (Continued)

CATEGORY	ENFORCEABLE POLICIES: APPLICABLE COASTAL ZONE MANAGEMENT RULES	REASONABLY FORESEEABLE COASTAL EFFECTS (CZMA COASTAL EFFECTS)
Coastal Hazards (continued)		<ul style="list-style-type: none"> Additional Wetland Resource Areas: The Project will require some work within additional wetland resource areas, principally Land Subject to Coastal Storm Flowage ("LSCSF"). No above-ground structures or changes to topography are proposed within LSCSF, and the Project will have no effect on flood velocities or floodplain storage capacity, and therefore no permanent impact to LSCSF is anticipated. Project activities along the Offshore Export Cable Corridor in Land Under the Ocean (as defined in 310 CMR 10.25) will not alter bathymetry in a way that would result in any significant changes to hydrodynamics. <p>Impacts to coastal wetlands and habitats could occur from an accidental spill, including inadvertent releases during refueling of vessels, spills potentially resulting from routine maintenance activities required for operations of the Project, spills due to vessel collisions or allisions, and more significant spills that could result from a catastrophic event occurring at or in proximity to the Project. Vessel fuel spills are not expected, and if one occurred, it is likely to be small. According to the USCG, between 2000 and 2011, the average oil spill size for vessels other than tank ships and tank barges in all US waters was 466 liters (123 gallons) (USCG, 2012). Because a diesel fuel or similar fuel spill of this size is expected to dissipate rapidly then evaporate and biodegrade within a few days, impacts to any affected resources would be short-term and localized to the vicinity of the spill. Likewise, the potential for spills will be further minimized as a result of the fact that vessels will be expected to comply with USCG regulations at 33 C.F.R. § 151 relating to the prevention and control of oil spills. Additionally, the Oil Spill Response Plan ("OSRP Plan"), included in Appendix 1-A, will provide for rapid spill response, clean-up, and other measures that should also help to minimize any potential impact to affected resources as it relates to spills and accidental releases that might occur, including spills resulted from catastrophic events.</p> <p>In addition to spills from vessels, impacts to coastal wetlands and habitats could potentially result from the unlikely event of an accidental release of fuel, lubricating oil, or hydraulic oil from construction equipment operating in or adjacent to the Landfall Site. Refueling and lubrication of stationary equipment will be conducted in a manner that protects coastal habitats from accidental spills. A Construction Spill Prevention Control and Countermeasures Plan will be prepared in accordance with all applicable federal, state,</p>

Table 3-1 Applicable Enforceable Policies for the Coastal Management Programs for Massachusetts and Rhode Island (Continued)

CATEGORY	ENFORCEABLE POLICIES: APPLICABLE COASTAL ZONE MANAGEMENT RULES	REASONABLY FORESEEABLE COASTAL EFFECTS (CZMA COASTAL EFFECTS)
Coastal Hazards (continued)		<p>and local requirements. This Plan will identify all measures that will be implemented to prevent spills and the best management practices that that will be in place to contain spills that may occur.</p> <p>As described in Section 3.2.5 of Volume I of the COP, existing ports and staging areas in Massachusetts, as well as one or more ports in Rhode Island, Connecticut, or elsewhere along the North Atlantic coastline, would support Project construction. Vineyard Wind will use ports that are suitable for the Project's needs and will not direct or implement any improvements that may be made; therefore, no impacts to natural coastal landforms will occur as result of the Project. Vineyard Wind plans to locate the Project's O&M Facilities in Vineyard Haven on Martha's Vineyard. However, Vineyard Wind intends to use port facilities at both Vineyard Haven and the New Bedford Terminal to support O&M activities (see Table 2-4). The New Bedford Terminal was specifically developed to accommodate offshore wind development, so no improvements to the New Bedford Terminal are anticipated. Vineyard Haven may require improvements to existing marine infrastructure (e.g., dock space for CTVs, access, etc.) and to structures (office and warehouse space). It is expected that any needed improvements would be coordinated with the lessor and completed by port owner/operator prior to use by Vineyard Wind. The Project will not interfere with water circulation or sediment transport processes, alter bottom topography, increase erosion, or impact littoral drift volumes, as defined in the MA CMP's Coastal Hazards Policy #2. No state or federally-funded public works projects, as defined in the MA CMP's Coastal Hazards Policy #3, will occur as a result of the proposed action.</p> <p>Consistent with the RI Ocean Special Area Management Plan (SAMP) Section 1160.3, no Project components will be constructed within Areas Designated for Preservation. Likewise, no Project components will be constructed within "Other Areas" listed in RI SAMP Section 1160.4. If Quonset or Providence Port are utilized, vessels traveling between one of these ports and the Wind Development Area (WDA) may transit within "Areas of high intensity commercial ship traffic in state waters" identified within Section 1160.4. The Navigational Risk Assessment included as Volume III-I of the COP indicates</p>

Table 3-1 Applicable Enforceable Policies for the Coastal Management Programs for Massachusetts and Rhode Island (Continued)

CATEGORY	ENFORCEABLE POLICIES: APPLICABLE COASTAL ZONE MANAGEMENT RULES	REASONABLY FORESEEABLE COASTAL EFFECTS (CZMA COASTAL EFFECTS)
Coastal Hazards (continued)		that Project-related vessel traffic (3-4 vessels daily to secondary ports) will only cause a moderate increase in existing traffic (about 25 vessels daily) within the Traffic Separation Scheme approaches to and from ports in Rhode Island, Massachusetts, and Connecticut. Potential impacts will be minimized by the establishment of a vessel traffic management plan to align scheduling of construction activities with port operations.
Energy	Energy Policy #1-2 (MA)	<p>The Project, which involves large-scale offshore wind energy generation and the transmission of that energy to shore, is by nature a coastally-dependent energy facility. An analysis of potential locations for wind energy development was previously conducted by BOEM when designating the Massachusetts Wind Energy Area (MA WEA), in which the Project is located.</p> <p>The Project is consistent with the intent of Energy Policy #2 to encourage “the use of alternative sources such as solar and wind power in order to assist in meeting the energy needs of the Commonwealth.” In accordance with the mandate provided by the 2016 energy legislation, the Project will provide the Commonwealth of Massachusetts with ~800 megawatts (“MW”) of clean, renewable wind energy.</p>
Habitat	Habitat Policy #1 – 2 (MA) RI SAMP Section 1160.3 Prohibitions and Areas Designated for Preservation (RI)	<p>The Project is designed to avoid impacts to coastal habitats and wetland resource areas to the maximum extent practicable and to minimize and mitigate unavoidable impacts in accordance with applicable federal, state, and local regulations. By complying with performance standards identified in the Massachusetts WPA, the Project will serve the protected interests identified in the statute.</p> <p>Wetlands impacts associated with the Onshore Export Cable Corridors are as follows:</p> <ul style="list-style-type: none"> • The Covell’s Beach Landfall Site and the Western Onshore Export Cable Route includes areas of LSCSF. Coastal beach and coastal dune are near the Landfall Site but would not be affected by the Project; construction impacts would be limited to paved surfaces (public roadway and a paved parking lot).

Table 3-1 Applicable Enforceable Policies for the Coastal Management Programs for Massachusetts and Rhode Island (Continued)

CATEGORY	ENFORCEABLE POLICIES: APPLICABLE COASTAL ZONE MANAGEMENT RULES	REASONABLY FORESEEABLE COASTAL EFFECTS (CZMA COASTAL EFFECTS)
Habitat (continued)		<ul style="list-style-type: none"> The New Hampshire Avenue Landfall Site and the Eastern Onshore Export Cable Route includes areas of Coastal Beach LSCSF. The coastal beach at the New Hampshire Avenue Landfall Site is directly seaward of a concrete bulkhead at the end of New Hampshire Avenue, and is bordered by two existing bulkheads on adjacent properties. The beach is relatively narrow, with a width of approximately 50 feet at low tide. At high tide, the beach is confined to a small rectangular area surrounded on three sides by bulkheads and riprap. Installation of the export cable by a direct lay approach would require the temporary installation of cofferdams and would temporarily alter approximately 1,500 square feet of coastal beach. <p>No above-ground structures or changes to topography are proposed within LSCSF. The Project will have no effect on flood velocities or floodplain storage capacity, and therefore no permanent impacts to LSCSF or BLSF are anticipated for any Onshore Export Cable Route.</p> <p>For the New Hampshire Avenue Landfall Site, an area of eelgrass is mapped from a 2015 Massachusetts Department of Environmental Protection survey west of the entrance to Lewis Bay, but this mapped eelgrass can be avoided. A relatively small eelgrass bed has recently been identified offshore in the vicinity of Spindle Rock, and that area is currently being surveyed to delineate the extent of the eelgrass. The Project intends to avoid mapped eelgrass to the greatest extent feasible. Otherwise, the Covell's Beach Landfall Site is free of offshore eelgrass or other sensitive habitats in the nearshore area. The Offshore Export Cable Corridor is located entirely within Land Under the Ocean. The Offshore Export Cable Corridor has been evaluated according to numerous factors, including technical feasibility and environmental considerations, such as the presence of hard bottom habitat, mapped shellfish suitability areas, and the amount of dredging required. The corridor crosses some areas of mapped hard bottom and shellfish suitability areas. The Project has sought to avoid impacts to these areas to the greatest extent feasible and will include post-construction benthic monitoring to evaluate impacts and recovery.</p>

Table 3-1 Applicable Enforceable Policies for the Coastal Management Programs for Massachusetts and Rhode Island (Continued)

CATEGORY	ENFORCEABLE POLICIES: APPLICABLE COASTAL ZONE MANAGEMENT RULES	REASONABLY FORESEEABLE COASTAL EFFECTS (CZMA COASTAL EFFECTS)
Habitat (continued)		<p>No impact to Areas Designated for Preservation within the RI SAMP, which are afforded additional protection than Areas of Particular Concern, are anticipated as a result of the Project. No impacts to Critical Habitat under the Endangered Species Act and no mining and extraction of minerals, including sand and gravel, from tidal waters and salt ponds would occur as a result of the Project. As described in Section 4.2.3.3.2 of Volume I of the COP, some dredging may be required within the Offshore Export Cable Corridor prior to cable laying due to the presence of sand waves. Dredged material is expected to be side-cast. While not anticipated, if any disposal of dredged material in the ocean, as defined in and subjected to regulations of RI Coastal Resources Management Plan (CRMP) Section 300.9, is proposed, it will be conducted in accordance with the U.S. EPA and U.S. Army Corps of Engineers' manual, <i>Evaluation of Dredged Material Proposed for Ocean Disposal</i>. The Project does not include the disposal of dredged material in the following Areas of Particular Concern: historic shipwrecks and archaeological or historic sites; offshore dive sites; navigation, military, and infrastructure areas; and moraines.</p> <p>The Project also does not include underwater cables within Areas Designated for Preservation, although underwater cables are exempt from the existing prohibition of any Large-Scale Offshore Development, mining and extraction of minerals, or other development that has been found to be in conflict with the intent and purpose of an Area Designated for Preservation within the Ocean SAMP.</p> <p>Indirect impacts have the potential to occur from a hypothetical fuel spill; however, as discussed above, should an incidental diesel fuel or oil spill occur as a result of the Project, the impacts on coastal habitats are expected to be negligible.</p>
Ocean Resources	Ocean Resources Policies #1-3 (MA)	As described in Section 7.9.1.4 of Volume III of the COP, the Project does not include and will not adversely affect any state-regulated aquaculture, marine mineral resource extraction, or offshore sand and gravel extraction as described in CMP's Ocean Resources Policies #1, #2, and #3, respectively.

Table 3-1 Applicable Enforceable Policies for the Coastal Management Programs for Massachusetts and Rhode Island (Continued)

CATEGORY	ENFORCEABLE POLICIES: APPLICABLE COASTAL ZONE MANAGEMENT RULES	REASONABLY FORESEEABLE COASTAL EFFECTS (CZMA COASTAL EFFECTS)
Ports and Harbors	Ports and Harbors Policy #1 – 4 (MA) RI SAMP Section 1160.2 (1) and (2) Areas of Particular Concern (RI)	<p>As described in Section 3.2.5 of Volume I of the COP, existing ports and staging areas in Massachusetts, as well as one or more ports in Rhode Island, Connecticut, or elsewhere along the North Atlantic coastline, would support Project construction. Within Massachusetts, Vineyard Wind has signed a letter of intent to the use the New Bedford Marine Commerce Terminal (“New Bedford Terminal”), owned by the Massachusetts Clean Energy Center (“MassCEC”), to support Project construction. The 26-acre New Bedford Terminal is located on the City’s extensive industrial waterfront, within a Designated Port Area (DPA), and was purpose built to support offshore wind energy projects. However, given the scale of the Project and the possibility that one or more other offshore wind projects may be using portions of the New Bedford Terminal at the same time, Vineyard Wind may need to stage certain activities from other ports located in Massachusetts, Rhode Island, Connecticut, or elsewhere along the North Atlantic coastline. Potential ports that may be used for the Project are listed in Table 2-3. Vineyard Wind will use ports that are suitable for the Project’s needs and will not direct or implement any improvements that may be made; therefore, no impacts to ports and surrounding area will occur as result of Project construction.</p> <p>Vineyard Wind plans to locate the Project’s O&M Facilities in Vineyard Haven on Martha’s Vineyard. However, Vineyard Wind intends to use port facilities at both Vineyard Haven and the New Bedford Terminal to support O&M activities (see Table 2-4). The New Bedford Terminal was specifically developed to accommodate offshore wind development, so no improvements to the New Bedford Terminal are anticipated. Vineyard Haven may require improvements to existing marine infrastructure (e.g., dock space for CTVs, access, etc.) and to structures (office and warehouse space). It is expected that any needed improvements would be coordinated with the lessor and completed by port owner/operator prior to use by Vineyard Wind.</p> <p>Section 7.7 of Volume III of the COP describes impacts of the Project on land use and coastal infrastructure. Overall, construction and installation impacts are anticipated to be temporary. Installation of duct bank beneath paved roadways will require only minimal disturbance to the adjacent road shoulder and is expected to be completed without</p>

Table 3-1 Applicable Enforceable Policies for the Coastal Management Programs for Massachusetts and Rhode Island (Continued)

CATEGORY	ENFORCEABLE POLICIES: APPLICABLE COASTAL ZONE MANAGEMENT RULES	REASONABLY FORESEEABLE COASTAL EFFECTS (CZMA COASTAL EFFECTS)
Ports and Harbors (Continued)		significant alteration to any land or infrastructure. Land uses are not anticipated to be impacted or altered upon completion of the construction and installation phase. The number of vessels transiting to New Bedford and other ports under consideration will increase as a result of the Project; potential impacts to navigation are discussed in detail in Appendix III-I of the COP.
Protected Areas	Protected Areas Policy #1 – 3 (MA) RI SAMP Section 1160.2 Areas of Particular Concern (RI) RI SAMP 1160.3 Prohibitions and Areas Designated for Preservation (RI)	<p>Vineyard Wind is conducting ongoing assessments of historical and archaeological resources within areas potentially affected by the Project.</p> <p>On behalf of Vineyard Wind, Public Archaeology Laboratory (“PAL”) completed an archaeological due diligence review of potential Onshore Export Cable Routes as well as the archaeological permit application that are included as Appendix III-G of Volume III of the COP. The desktop archaeological due diligence review was conducted to provide information about known archaeological sites within one-half mile of the potential routes, provide a sensitivity assessment for archaeological resources with the Project Area, and make recommendations regarding the need for consultation with the Massachusetts Historical Commission (“MHC”) and additional cultural resource management investigations. The desktop due diligence review consisted of a search of the MHC’s Inventory of the Historic and Archaeological Assets of the Commonwealth (“MHC Inventory”) and the Massachusetts Cultural Resource Information System to identify previously recorded archaeological sites within the vicinity of the Project and analyze current environmental conditions to determine archaeological sensitivity.</p> <p>As described in Appendix III-G, this due diligence review indicated that both the Eastern Onshore Export Cable Route (referred to in Appendix III-G as the “Preferred Route” or “PR”) and the Western Onshore Export Cable Route (referred to in Appendix III-G as the “Noticed Alternative” or “NA”) each pass through and are adjacent to previously recorded archaeological sites.</p> <p>PAL has conducted a reconnaissance level archaeology survey for terrestrial areas, including completion of background research and a walkover survey. The survey included the two proposed Onshore Export Cable Routes with their variants as well as the proposed onshore substation site, and assessed their potential to affect archaeological resources.</p>

Table 3-1 Applicable Enforceable Policies for the Coastal Management Programs for Massachusetts and Rhode Island (Continued)

CATEGORY	ENFORCEABLE POLICIES: APPLICABLE COASTAL ZONE MANAGEMENT RULES	REASONABLY FORESEEABLE COASTAL EFFECTS (CZMA COASTAL EFFECTS)
Protected Areas (Continued)		<p>The reconnaissance survey identified known archaeological sites, previous disturbance, and addressed potential effects to archaeological sites as outlined in the archaeological permit application included in Appendix III-G. The survey was completed in cooperation with local historical commissions and Tribal Historic Preservation Offices. The survey report ranked areas for low, moderate and high archaeological sensitivity and gave recommendations for potential excavations as part of a potential intensive level survey. The survey report is presently under review at the MHC. Additional archaeological surveys will only be undertaken with the approval of the MHC. Curation arrangements for cultural records and materials have been made as Vineyard Wind is required under the State Archaeologist's Permit to house artifacts at PAL's office unless another approved facility is found and deaccession approved by the State Archaeologist.</p> <p>No previously-identified archaeological resources are located within the Offshore Export Cable Corridors. A permit was received to conduct a marine archaeological survey from the Massachusetts Board of Underwater Archaeological Resources, and preliminary surveys were completed in August 2017. As described in Section 7.3 of Volume III and Appendix II-C of the COP, the surveys did not identify any shipwrecks or aircraft debris along the Offshore Export Cable Corridors, though one shipwreck was identified in the WDA.</p> <p>Surveys planned for the 2018 field campaign in support of the Construction and Operations Plan will extend seafloor and subsurface coverage in all areas where bottom disturbance could occur during construction activities. Survey line spacing, coverage, geophysical system parameters, and methodologies will comply with BOEM geophysical and geotechnical as well as archaeological guidelines applicable to this Project.</p> <p>It is anticipated that an additional assessment of potential Project-related impacts will be developed through the planned future surveys. Avoidance, minimization, and mitigation measures for terrestrial and submarine historical and archaeological resources within the Project Area will be determined in consultation with MHC and Massachusetts Board of Underwater Archaeological Resources through the Section 106 process.</p>

Table 3-1 Applicable Enforceable Policies for the Coastal Management Programs for Massachusetts and Rhode Island (Continued)

CATEGORY	ENFORCEABLE POLICIES: APPLICABLE COASTAL ZONE MANAGEMENT RULES	REASONABLY FORESEEABLE COASTAL EFFECTS (CZMA COASTAL EFFECTS)
Protected Areas (continued)		<p>An evaluation of the Project’s visual impacts to historic resources is provided within Appendix III-H.b. of the COP. (An assessment of the Project’s general visual impacts is provided within Appendix III-H.a. of the COP and is summarized below under Public Access.) For the onshore substation, no adverse visual effects are anticipated as a result of modifying the substation or constructing an adjacent station (if needed). For offshore Project components, Areas of Potential Effect (APE) were defined using field surveys to identify locations with the potential to view the WDA. As detailed in Appendix III-H.b. of the COP, limited historic properties on Martha’s Vineyard, the southwestern coast of Nantucket and their minor outlying islands may have changes in their viewsheds as a result of the Project. However, it is not the viewshed of the property that is being affected, but rather the viewshed from the property, which in some cases is not as significant. Additionally, distance and weather conditions render the WDA not visible during many times of the year. No effect to historic properties on Cape Cod or Cuttyhunk Island is anticipated due to extreme distance from the WDA.</p> <p>The Project is not located within or near, and will not impact, any Areas of Critical Environmental Concern (“ACECs”) or state designated scenic rivers, as described in CMP’s Protected Areas Policies #1 and #2, respectively.</p> <p>RI SAMP Section 1160.2 includes a prohibition on Large-scale, Small-scale, or other offshore development, or any portion of a proposed project within Areas of Potential Concern (APCs). Consistent with this provision, the Project is not located within any APC, including:</p> <ul style="list-style-type: none"> • Historic shipwrecks, archaeological or historical sites and their buffers • Offshore dive sites within the Ocean SAMP area • Glacial moraines • Navigation, Military, and Infrastructure area including: designated shipping lanes, precautionary areas, recommended vessel routes, ferry routes, dredge disposal sites, military testing areas, unexploded ordnance, pilot boarding areas, anchorages, and a coastal buffer of 1 km

Table 3-1 Applicable Enforceable Policies for the Coastal Management Programs for Massachusetts and Rhode Island (Continued)

CATEGORY	ENFORCEABLE POLICIES: APPLICABLE COASTAL ZONE MANAGEMENT RULES	REASONABLY FORESEEABLE COASTAL EFFECTS (CZMA COASTAL EFFECTS)
Protected Areas (continued)		<ul style="list-style-type: none"> • Areas of high fishing activity as identified during the pre-application process by the Fishermen’s Advisory Board • Several heavily-used recreational boating and sailboat racing areas • Naval Fleet Submarine Transit Lanes <p>During construction, Project-related vessels may transit through some of the above APC areas. The Navigational Risk Assessment included as Volume III-I of the COP indicates that Project-related vessel traffic (3-4 vessels daily to secondary ports) will only cause a moderate increase in existing traffic (about 25 vessels daily) within the Traffic Separation Scheme approaches to and from ports in Rhode Island, Massachusetts, and Connecticut. Construction vessels would follow routes similar to regular commercial traffic to port sites in Rhode Island. It is assumed that deep draft construction vessels or those loaded with large components would navigate to the northern traffic separation zone when traveling to a Rhode Island port. Potential impacts will be minimized by the establishment of a vessel traffic management plan to align scheduling of construction activities with port operations. Vineyard Wind will continue to engage with the local pilots to coordinate approaches to the ports so as to minimize risk to navigation when entering the port area, as needed. Furthermore, Vineyard Wind’s Marine Coordinator will keep track of all planned vessel deployment and will assist with vessel traffic coordination at Rhode Island ports. The Marine Coordinator will ensure ongoing coordination between the USCG, vessels employed for construction, and other relevant parties such as commercial operators (e.g. ferry, tourist, and commercial fishing vessel operators).</p> <p>The WDA is not located within the RI Recreational boating areas designated as Areas of Particular Concern in state waters. As noted in the preceding paragraph, Project-related vessels may transit through part of this area during construction to access a Rhode Island port. In advance of marine events and sailing regattas, Vineyard Wind will work with the event organizers to promote safe navigation and minimize any conflicts.</p> <p>An assessment of the Project’s impacts to fish and a description of use of the Project Area by commercial and for hire recreational fishermen are provided in Sections 6.6 and 7.6 of Volume III of the COP, respectively. In general, impacts to finfish and invertebrate species</p>

Table 3-1 Applicable Enforceable Policies for the Coastal Management Programs for Massachusetts and Rhode Island (Continued)

CATEGORY	ENFORCEABLE POLICIES: APPLICABLE COASTAL ZONE MANAGEMENT RULES	REASONABLY FORESEEABLE COASTAL EFFECTS (CZMA COASTAL EFFECTS)
Protected Areas (continued)		<p>are expected to be short-term and localized during the construction and installation of the Project. The low total fish biomass and high species richness in the Project Area makes this location ideal for wind energy as it reduces impacts to individual organisms and targets an area which will likely be able to recover following any potential Project-related disturbances. In addition, the Massachusetts Wind Energy Area (MA WEA), in which Vineyard Wind's Lease Area is located, was selected by BOEM to exclude most sensitive fish and invertebrate habitat.</p> <p>As described in detail in Section 7.6 of Volume III of the COP, Vineyard Wind's extensive outreach and conversations with over 100 fishery stakeholders has aided in identifying commercial fishing effort in the WDA. Based on feedback from the fishing community during that outreach, the following fisheries likely fish within the WDA and along to the OECC and therefore are potentially impacted by the Project:</p> <ul style="list-style-type: none"> • Static gear fisheries (gill nets, traps/pots) • Ground fish/Bottom trawl mobile gear (squid/Fluke/Atlantic Mackerel) • Atlantic Surfclam/Ocean Quahog dredge fishery <p>As described in Section 7.6 of Volume III of the COP, the most recent Vessel Monitoring Systems (VMS) data available can be used to qualitatively characterize fishing activity within the WDA:</p> <ul style="list-style-type: none"> • The density of multispecies vessel activity can be characterized largely as Medium-Low throughout the WDA with some areas characterized as Medium-High (see Figure 7.6-4 in Volume III of the COP). • Some vessels targeting Monkfish (see Figure 7.6-5 in Volume III of the COP) appear to be deploying gear in portions of the WDA during the years analyzed. Vessel density increases to the north of the WDA, in the areas on either side of Muskeget Channel.

Table 3-1 Applicable Enforceable Policies for the Coastal Management Programs for Massachusetts and Rhode Island (Continued)

CATEGORY	ENFORCEABLE POLICIES: APPLICABLE COASTAL ZONE MANAGEMENT RULES	REASONABLY FORESEEABLE COASTAL EFFECTS (CZMA COASTAL EFFECTS)
Protected Areas (continued)		<ul style="list-style-type: none"> • Scallop vessel density during the years analyzed is Medium-Low, with a small section characterized as Medium-High within limited areas of the WDA and along a section of the OECC near Muskeget Channel (see Figure 7.6-6 in Volume III of the COP). • Vessels targeting Surfcalm/Ocean Quahogs appear to have a limited presence in the WDA during the years analyzed. Areas of Medium-High to High density occur to the northwest of the WDA (see Figure 7.6-7 in Volume III of the COP). • Squid vessels appear active in the WDA and along portions of the OECC through Nantucket Sound (see Figure 7.6-8 in Volume III of the COP) during the years analyzed. However, the highest level of squid activity occurs outside and to the north of the WDA. Fishermen indicate that squid activity primarily occurs near the WDA, offshore in federal waters, from approximately May/June to August, and areas within Nantucket Sound and Massachusetts coastal waters are active from April to June. • During the years analyzed, vessels targeting Mackerel and Herring do not appear to deploy gear in the WDA (see Figures 7.6-9 and 7.6-10 in Volume III of the COP). • Fisheries representatives have also indicated that vessels targeting Whiting (<i>Merluccius bilinearis</i>) and Scup, may be active in the WDA throughout the year and vessels targeting Yellowtail and Winter Flounder (<i>Pseudopleuronectes americanus</i>) are active south of the WDA. • The American Lobster fishery is active in the Project Region, which is located in Area 2 of the Southern New England Lobster Management area. Based on outreach to fishermen that hold Area 2 lobster permits who are currently actively fishing, Vineyard Wind understands that there may be only five to six lobstermen who actively fish in the Lease Area.

Table 3-1 Applicable Enforceable Policies for the Coastal Management Programs for Massachusetts and Rhode Island (Continued)

CATEGORY	ENFORCEABLE POLICIES: APPLICABLE COASTAL ZONE MANAGEMENT RULES	REASONABLY FORESEEABLE COASTAL EFFECTS (CZMA COASTAL EFFECTS)
Protected Areas (continued)		<p>The relative size of the WDA with respect to the MA WEA, and the proximity of the WDA to important fishing ports and fishing areas, is a significant consideration when estimating potential effects on commercial fishing operations that may occur near the WDA. As described in Section 7.6 of Volume III of the COP, the BOEM fisheries study (Kirkpatrick, 2017) estimated the average annual value of fish taken in the MA WEA between 2007 and 2012 to be \$3.03 million, and the DEM fisheries study (Livermore, 2017) estimated the average annual value of fish taken in the Lease Area between 2011 and 2016 to be \$0.858 million. DEM's estimate is 28.3 percent of BOEM's estimated value for the entire MA WEA, which was based on data for a few years earlier. Geographically scaled to the WDA, the 2017 BOEM fisheries study indicates that the average annual revenue exposed within the WDA during the years studied is approximately \$308,450. Accounting for differences in the sample years, the results of the two studies validate one another and suggest that the economic value of fishing could be uniformly distributed across the MA WEA at \$1,000 to \$1,200 per km², with the average value of annual catches from the WDA between 2007 and 2016 estimated to be approximately \$348,450.</p> <p>Overall, impacts to fisheries resources during construction are anticipated to be short-term and localized. Pelagic species will be able to avoid construction areas and are not expected to be substantially impacted by construction and installation. Impacts to mobile pelagic fish and invertebrate species include localized and short-term avoidance behavior. These impacts can be minimized or offset through mitigation consisting of a "soft-start" pile driving regime and efficient construction practices.</p> <p>Direct mortality may occur to immobile benthic organisms that are in the direct path of construction processes. Mortality of immobile pelagic egg and larval life stages in the construction area (WDA and OECC) may occur through water withdrawals of the construction vessels. Although eggs and larvae may be entrained and will not survive, loss of many adult fish and population level impacts are not expected as most of these species produce millions of eggs each year and already have low adult survival rates. In addition, mortality of pelagic eggs due to increased suspended sediments is not likely as only low concentration sediment plumes are expected and resettlement will occur quickly (less than five hours in the water column).</p>

Table 3-1 Applicable Enforceable Policies for the Coastal Management Programs for Massachusetts and Rhode Island (Continued)

CATEGORY	ENFORCEABLE POLICIES: APPLICABLE COASTAL ZONE MANAGEMENT RULES	REASONABLY FORESEEABLE COASTAL EFFECTS (CZMA COASTAL EFFECTS)
Protected Areas (continued)		<p>Burial and mortality of some demersal eggs and sessile organisms is also expected during cable installation in the WDA and OECC, where deposition is greater than one millimeter. However, mortal deposition levels are only expected in small, localized areas in the direct vicinity of the cable routes. Burrowing mollusks in the area, such as quahogs, will likely be able to avoid construction and burial and are only expected to be slightly impacted and exhibit short-term avoidance of the area. Overall, although sessile benthic organisms and demersal species and life stages will incur the brunt of construction impacts, because the impacted area is only a small portion of the available habitat in the area, population level impacts are highly unlikely. Impacts to finfish and invertebrate species are expected to be short-term and localized during the construction and installation of the Project.</p> <p>Commercial fishing impacts will be further mitigated by ongoing communication via the Fisheries Communication Plan (provided in Attachment III-E of Volume III of the COP) and the use of Fisheries Liaisons and Fisheries Representatives. In addition, Vineyard Wind is developing a framework for a pre- and post-construction fisheries monitoring program to measure the Project's effect on fisheries resources. Vineyard Wind is working with the Massachusetts School for Marine Science and Technology (SMST) and local stakeholders to inform that effort and design the study. Vineyard Wind will also conduct post-construction monitoring through the Project's Benthic Habitat Monitoring Plan and partnerships with research and other organizations to document habitat disturbance and recovery.</p> <p>Impacts to commercial fishing activities due to installation of the offshore cable system may result in temporary disruptions to access of shellfishing areas along the Offshore Export Cable Corridor (OECC). Construction and installation may also cause direct impacts to shellfish in proximity to the cable installation. It is expected that physical habitat will recover from the disturbance and communities begin to repopulate within a few months of construction and installation activities concluding (Dernie et al., 2003; Van Dalfsen & Essink, 2001).</p>

Table 3-1 Applicable Enforceable Policies for the Coastal Management Programs for Massachusetts and Rhode Island (Continued)

CATEGORY	ENFORCEABLE POLICIES: APPLICABLE COASTAL ZONE MANAGEMENT RULES	REASONABLY FORESEEABLE COASTAL EFFECTS (CZMA COASTAL EFFECTS)
Protected Areas (continued)		<p>Vineyard Wind has designed the site layout using a grid pattern and, in consultation with local fishermen and the US Coast Guard, 1 nautical mile wide transit corridors in a northwest/southeast and northeast/southwest direction have been maintained. Vineyard Wind will not restrict fishing or transit in the Project area, except for temporary safety zones during construction or maintenance. Any such restrictions would be included in Notices to Mariners (NTMs) distributed by Vineyard Wind and the US Coast Guard.</p> <p>During operations and maintenance, noise generated from the operation of wind farms is anticipated to be minimal and only localized avoidance behaviors are expected; acclimation to the noise over time may occur. The addition of EMF from submarine cables will likely not have an impact on elasmobranchs or other electro-sensitive fish species, as cables will be buried in the substrate or covered with rock or concrete mattresses. The introduction of hard structure habitat through the addition of foundations and associated scour protection for the wind turbine generators and electrical service platforms will add a complexity to the area that did not exist before and will likely attract species that prefer structured habitat.</p> <p>The WDA is located in water depths greater than 20 meters (65.6 ft) and therefore is not located in a sea duck foraging habitat Area Designated for Preservation (RI Ocean SAMP 1160.3 1(i)). In addition, areas of high sea duck occurrence were removed from the MA Call Area during BOEM's Area Identification process and were likewise excluded from leasing consideration. See Section 6.2 of Volume III of the COP for additional information on birds.</p> <p>No impacts to public recreation areas in MA and RI are anticipated as a result of the Project.</p> <p>As described in Section 1.5.3 of Volume I of the COP, activities at the Landfall Site where transmission will transition from offshore to onshore will not be performed during the months of June through September unless authorized by the host town. Likewise, Vineyard Wind will not conduct activities along the onshore transmission route within public roadway layouts from Memorial Day through Labor Day unless authorized by the host</p>

Table 3-1 Applicable Enforceable Policies for the Coastal Management Programs for Massachusetts and Rhode Island (Continued)

CATEGORY	ENFORCEABLE POLICIES: APPLICABLE COASTAL ZONE MANAGEMENT RULES	REASONABLY FORESEEABLE COASTAL EFFECTS (CZMA COASTAL EFFECTS)
Protected Areas (continued)		<p>town; such work could extend through June 15 subject to consent from the local Department of Public Works (DPW). Vineyard Wind will consult with the towns regarding the construction schedule. These summer limitations on certain onshore construction activities are shown on the detailed construction schedules included as Figure 4.1-1 in Volume I of the COP.</p> <p>Vineyard Wind does not anticipate any new coastal development as a result of the Project and will only use coastal sites for HDD Landfall Sites. Potential impacts to wetlands or other coastal habitats are discussed above in the “Coastal Hazards” section.</p>
Public Access	<p>Public Access Policy #1 (MA)</p> <p>RI SAMP 1160.2 Areas of Particular Concern (RI)</p>	<p>The Project is not anticipated to adversely impact public use and enjoyment of the water’s edge.</p> <ul style="list-style-type: none"> • The Project does not involve development of coastal sites, and will only use coastal sites for HDD Landfall Sites. As described above under Protected Areas and in Section 1.5.3 of Volume I of the COP, activities at the Landfall Site where transmission will transition from offshore to onshore will not be performed during the months of June through September unless authorized by the host town. • As discussed above under Ports and Harbors and as described in Section 3.2.5 of Volume I of the COP, existing ports and staging areas in Massachusetts, as well as one or more ports in Rhode Island, Connecticut, or elsewhere along the North Atlantic coastline, would support Project construction. Vineyard Wind will use ports that are suitable for the Project’s needs and will not direct or implement any improvements that may be made; therefore, no impacts to ports and surrounding area will occur as result of Project construction. Vineyard Wind plans to locate the Project’s O&M Facilities in Vineyard Haven on Martha’s Vineyard. However, Vineyard Wind intends to use port facilities at both Vineyard Haven and the New Bedford Terminal to support O&M activities (see Table 2-4). The New Bedford Terminal was specifically developed to accommodate offshore wind development, so no improvements to the New Bedford Terminal are anticipated. Vineyard Haven may require improvements to existing marine infrastructure (e.g., dock space for CTVs, access, etc.) and to structures (office and warehouse space). It is expected

Table 3-1 Applicable Enforceable Policies for the Coastal Management Programs for Massachusetts and Rhode Island (Continued)

CATEGORY	ENFORCEABLE POLICIES: APPLICABLE COASTAL ZONE MANAGEMENT RULES	REASONABLY FORESEEABLE COASTAL EFFECTS (CZMA COASTAL EFFECTS)
Public Access (Continued)		<p>that any needed improvements would be coordinated with the lessor and completed by port owner/operator prior to use by Vineyard Wind. An assessment of the Project's visual impacts is provided within Appendix III-H.a. of the COP. The distance of the WDA from the nearest coastal vantage point – greater than 23 km (14 mi) - serves to minimize Project visibility from sensitive visual resources. The Project would result in minimal change to landscape conditions for viewers along the Martha's Vineyard and Nantucket coastline. Viewers on the islands will have limited visibility of the Wind Turbine Generators (WTGs) when weather conditions allow. However, at distances greater than 23 km (14 mi) and viewed within the context of the ocean that includes the vast expanse of water, extended beach views and dunes, as well as the sights and sounds of breaking surf and wind, the Project would likely be considered visually subordinate to the wider landscape. The Project will be virtually undetectable from Cape Cod.</p> <ul style="list-style-type: none"> An assessment of the Project's visual impacts to historic resources is provided within Appendix III-H.b. of the COP and is summarized above under Protected Resources. <p>Overall, as discussed in Section 7.5 of Volume III of the COP, the Project is not anticipated to have a significant or long-term adverse impact on recreational resources.</p>
Water Quality	<p>Water Quality Policy #1 (MA) (Point Source)</p> <p>Water Quality Policy #2 (MA) (Nonpoint Source)</p> <p>Water Quality Policy #3 (MA) (Groundwater Discharges)</p>	<p>The routine activities associated with the proposed action which would impact coastal and marine water quality include structure installation and removal and vessel discharges (including bilge and ballast water and sanitary waste). Additional information on water quality and impacts to coastal and marine water quality can be found in Section 5.2 of Volume III of the COP.</p> <p>Cable burial operations will occur both in the WDA for the inter-array cables connecting the WTGs to the Electrical Service Platforms (ESPs) and the OECC for the cables carrying power from the ESPs to landfall. The modeling analyses conducted for the Project indicate that, for both the inter-array cables and the OECC, mobilized sediment is not transported far by the currents in most cases and settles rapidly. Sediment plumes greater than 10 mg/L typically persist at any given point for less than six hours, and in no case for more than 12</p>

Table 3-1 Applicable Enforceable Policies for the Coastal Management Programs for Massachusetts and Rhode Island (Continued)

CATEGORY	ENFORCEABLE POLICIES: APPLICABLE COASTAL ZONE MANAGEMENT RULES	REASONABLY FORESEEABLE COASTAL EFFECTS (CZMA COASTAL EFFECTS)
Water Quality (Continued)	Section 401 of the Clean Water Act (33 U.S.C. 1251 et seq.) (MA, RI)	<p>hours. The plume is confined to the bottom three meters (9.8 ft) of the water column, which is usually only a fraction of the water column, and maximum deposition is typically less than five millimeters (0.2 in).</p> <p>Pile driving will be utilized to install the WTG and ESP foundations within the WDA. The potential impacts to water quality via sediment resuspension from repeated hammer blows to the pile would be local to the pile outer diameter and are not anticipated to cause any significant sediment resuspension.</p> <p>HDD may be used, as described in Section 4.2.3.8 of Volume I of the COP, to avoid impacts of standard cable burial techniques in the nearshore region. These activities will only occur in the OECC. HDD operations may involve temporary removal of sediments from within a partial cofferdam. After cable connection activities are completed, the sediment will be replaced. It is possible that potential, limited sediment releases could occur during the refilling operation but impacts would be localized and short-term.</p> <p>Installation of the rocks or stones for scour protection will occur at each WTG and ESP foundation. The area of scour protection will be limited to 2100 square meters ("m²") (0.52 acres) at each WTG and 2500 m² (0.62 acres) at each ESP. Placement of the rock may yield a temporary increase in suspended sediments due to resuspension of bottom sediments as the rock is placed; however, such impacts are anticipated to be a short-term and temporary due to the predominately sandy composition of the upper sediments in the WDA.</p> <p>Dredging along portions of the OECC may result in temporary increased suspended solids in the water due to sediment remobilization. The amount of remobilization will be based upon the advance rate or speed of the equipment and the fraction of the sediment volume mobilized into the water column. It is anticipated that best management practices will be employed to limit sediment resuspension and dispersion during dredging. Additionally, the proposed side-casting is advantageous over other available disposal methods in that it will limit the generation of suspended sediments.</p>

Table 3-1 Applicable Enforceable Policies for the Coastal Management Programs for Massachusetts and Rhode Island (Continued)

CATEGORY	ENFORCEABLE POLICIES: APPLICABLE COASTAL ZONE MANAGEMENT RULES	REASONABLY FORESEEABLE COASTAL EFFECTS (CZMA COASTAL EFFECTS)
Water Quality (Continued)		<p>Water quality related to suspended sediments from dredging and other construction activities, as appropriate, will be monitored. Details of the monitoring effort will be developed with the appropriate state and federal agencies (Massachusetts Department of Environmental Protection 401 Regulatory Program and the US Army Corps of Engineers) during other permitting processes. The monitoring is anticipated to consist of using a hand-held or similar turbidity sensor deployed from a small vessel to collect turbidity readings from multiple depths within the water column. If determined to be appropriate, collection of water samples for subsequent analysis for total suspended solids (TSS) could be made from the vessel to quantify the sediment concentration in the plume. Background levels outside of the plume for turbidity (and TSS, if appropriate) could also be acquired.</p> <p>Limited water withdrawals during construction may include water for cable installation (if jet plowing is used) and bilge/ballast water. These modest and temporary water withdrawals are not anticipated to have any meaningful impact on water quality.</p> <p>Vessels may discharge some liquid wastes to marine waters in both the WDA and OECC. These discharges include domestic water, uncontaminated bilge water, treated deck drainage and sumps, uncontaminated ballast water, and uncontaminated fresh or seawater from vessel air conditioning. Bilge water discharges may occur in nearshore and offshore waters provided that the effluent is processed by an approved oily water separator and the oil content is less than 15 parts per million. In navigable waters of the United States, vessels may not discharge any effluent that contains oil that causes a sheen on the surface of the water or an emulsion beneath the water, which is a violation of 40 CFR 110. Bilge water that cannot be discharged in compliance with these standards must be retained onboard the vessel for subsequent discharge at an approved port reception facility per 33 CFR 151.10(f). Ballast water is used to maintain stability of the vessel and may be pumped from coastal or marine waters. Generally, the ballast water is pumped into and out of separate compartments and is not usually contaminated with oil; however, the same discharge criteria for bilge water apply to ballast water (33 CFR 151.10). Ballast water also may be subject to the USCG's Ballast Water Management Program to prevent the spread of aquatic nuisance species. Accordingly, these discharges will not pose a water quality impact. BOEM (2014) determined the following related to potential water quality impacts from</p>

Table 3-1 Applicable Enforceable Policies for the Coastal Management Programs for Massachusetts and Rhode Island (Continued)

CATEGORY	ENFORCEABLE POLICIES: APPLICABLE COASTAL ZONE MANAGEMENT RULES	REASONABLY FORESEEABLE COASTAL EFFECTS (CZMA COASTAL EFFECTS)
Water Quality (Continued)		<p>routine vessel discharges: “[I]n the WEA, coastal and oceanic circulation and the large volume of water would disperse, dilute, and biodegrade vessel discharges relatively quickly, and the water quality impact would be minor.” Other waste generation such as sewage, solid waste or chemicals, solvents, oils and, greases from equipment, vessels or facilities will be stored and properly disposed of on land or incinerated offshore and will not generate an impact.</p> <p>The Project will require all vessels to comply with regulatory requirements related to the prevention and control of discharges and the prevention and control of accidental spills. Spills could occur during refueling, fluid exchange, or as the result of an allision or collision. Oil and other types utilized by the Project are presented in Table 4.2-3 of Volume I of the COP and in Appendix I-A. Vessel fuel spills are not expected, and if one occurred, it is likely to be small. According to the USCG, between 2000 and 2011, the average oil spill size for vessels other than tank ships and tank barges in all US waters was 466 liters (123 gallons) (USCG, 2012). Because a diesel fuel or similar fuel spill of this size is expected to dissipate rapidly and evaporate within days, impacts to any affected resources would be short-term and localized to the vicinity of the spill. The Project has also developed a draft Oil Spill Response Plan, which is included in Appendix I-A of the COP, which will provide for rapid spill response, clean-up, and other measures that should also help to minimize any potential impact to affected resources as it relates to spills and accidental releases that might occur, including spills resulted from catastrophic events.</p> <p>The USEPA National Pollutant Discharge Elimination System (NPDES) storm water effluent limitation guidelines control storm water discharges from support facilities such as ports and harbors. The Project is not anticipated to increase runoff or onshore discharge into harbors, waterways, coastal areas, or the ocean environment.</p> <p>The Project does not propose any subsurface waste discharges</p>

Table 3-1 Applicable Enforceable Policies for the Coastal Management Programs for Massachusetts and Rhode Island (Continued)

CATEGORY	ENFORCEABLE POLICIES: APPLICABLE COASTAL ZONE MANAGEMENT RULES	REASONABLY FORESEEABLE COASTAL EFFECTS (CZMA COASTAL EFFECTS)
Historical Properties	<p>Protected Areas Policy #3 (MA)</p> <p>Rhode Island Historical Preservation Act and Antiquities Act (RI)</p> <p>RI SAMP Section 1160.1.12-17 Overall Regulatory Standards (RI)</p> <p>RI SAMP Section 1160.2.3(i) Areas of Particular Concern (RI)</p>	<p>A Marine Archaeology Assessment and a Visual Impact Assessment (including visual impacts to historic resources) have been conducted for the Project. These assessments are included as Appendices II-C, III-H.a and III-H.b of the COP, respectively.</p> <p>As described above under Protected Areas, on behalf of Vineyard Wind, Public Archaeology Laboratory ("PAL") completed an archaeological due diligence review of potential Onshore Export Cable Routes as well as the archaeological permit application that are included as Appendix III-G of Volume III of the COP. The desktop archaeological due diligence review was conducted to provide information about known archaeological sites within one-half mile of the potential routes, provide a sensitivity assessment for archaeological resources with the Project Area, and make recommendations regarding the need for consultation with the Massachusetts Historical Commission ("MHC") and additional cultural resource management investigations.</p> <p>As described in Appendix III-G, this due diligence review indicated that both the Eastern Onshore Export Cable Route (referred to in Appendix III-G as the "Preferred Route" or "PR") and the Western Onshore Export Cable Route (referred to in Appendix III-G as the "Noticed Alternative" or "NA") each pass through and are adjacent to previously recorded archaeological sites.</p> <p>PAL has conducted a reconnaissance level archaeology survey for terrestrial areas, including completion of background research and a walkover survey. The survey included the two proposed Onshore Export Cable Routes with their variants as well as the proposed onshore substation site, and assessed their potential to affect archaeological resources. The reconnaissance survey identified known archaeological sites, previous disturbance, and addressed potential effects to archaeological sites as outlined in the archaeological permit application included in Appendix III-G. The survey was completed in cooperation with local historical commissions and Tribal Historic Preservation Offices. The survey report ranked areas for low, moderate and high archaeological sensitivity and gave recommendations for potential excavations as part of a potential intensive level survey. The survey report is presently under review at the MHC. Additional archaeological surveys will only be undertaken with the approval of the MHC. Curation arrangements for cultural records and materials have been made as Vineyard Wind is required under the State Archaeologist's Permit to house artifacts at PAL's office unless another approved facility is</p>

Table 3-1 Applicable Enforceable Policies for the Coastal Management Programs for Massachusetts and Rhode Island (Continued)

CATEGORY	ENFORCEABLE POLICIES: APPLICABLE COASTAL ZONE MANAGEMENT RULES	REASONABLY FORESEEABLE COASTAL EFFECTS (CZMA COASTAL EFFECTS)
Historical Properties (continued)		<p>found and deaccession approved by the State Archaeologist. No previously-identified archaeological resources are located within the Offshore Export Cable Corridor. A permit was received to conduct a marine archaeological survey from the Massachusetts Board of Underwater Archaeological Resources, and preliminary surveys were completed in August 2017. As described in Section 7.3 of Volume III and Appendix II-C of the COP, the surveys did not identify any shipwrecks or aircraft debris along the Offshore Export Cable Corridor, though one shipwreck was identified in the Wind Development Area (WDA).</p> <p>Surveys planned for the 2018 field campaign in support of the Construction and Operations Plan will extend seafloor and subsurface coverage in all areas where bottom disturbance could occur during construction activities. Survey line spacing, coverage, geophysical system parameters, and methodologies will comply with BOEM geophysical and geotechnical as well as archaeological guidelines applicable to this Project.</p> <p>It is anticipated that an additional assessment of potential Project-related impacts will be developed through the planned future surveys. Avoidance, minimization, and mitigation measures for terrestrial and submarine historical and archaeological resources within the Project Area will be determined in consultation with MHC and Massachusetts Board of Underwater Archaeological Resources through the Section 106 process. An assessment of the Project's visual impacts, including visual impacts to historic resources, is provided within Appendices III-H.a. and III-H.b. of the COP. For the onshore substation, no adverse visual effects are anticipated as a result of modifying the substation or constructing an adjacent station (if needed).</p> <p>For offshore Project components, Areas of Potential Effect (APE) were defined using field surveys to identify locations with the potential to view the WDA. As detailed in Appendix III-H.b. of the COP, limited historic properties on Martha's Vineyard, the southwestern coast of Nantucket and their minor outlying islands may have changes in their viewsheds as a result of the Project. However, it is not the viewshed of the property that is being affected, but rather the viewshed from the property, which in some cases is not as significant. Additionally, distance and weather conditions render the WDA not visible during many times of the year. No effect to properties on Cape Cod or Cuttyhunk Island is anticipated due to extreme distance from the WDA.</p>

Table 3-1 Applicable Enforceable Policies for the Coastal Management Programs for Massachusetts and Rhode Island (Continued)

CATEGORY	ENFORCEABLE POLICIES: APPLICABLE COASTAL ZONE MANAGEMENT RULES	REASONABLY FORESEEABLE COASTAL EFFECTS (CZMA COASTAL EFFECTS)
Growth Management	Growth Management Policy #1 (MA)	This Project is proposed in response to the Commonwealth's 2016 <i>An Act to Promote Energy Diversity</i> and is located within the Massachusetts WEA. The WEA location was carefully selected by BOEM through a process that involved significant public input. The WDA is located approximately 23 km (14 miles) south of Martha's Vineyard and Nantucket in federal waters. A Visual Impacts Assessment for the wind turbines has been prepared and is included in Appendices III-H.a and III-H.b. The offshore cable and its Landfall Site will not be visible, and therefore will not alter local community character. Additionally, the Project's proposed onshore substation is located adjacent to the existing Barnstable Switching Station, so will be compatible with existing land uses.

References

- BOEM. (2014). *Commercial Wind Lease Issuance and Site Assessment Activities on the Atlantic Outer Continental Shelf Offshore Massachusetts Revised Environmental Assessment*. U.S. Department of the Interior, Bureau of Ocean Energy Management, Office of Renewable Energy Programs. OCS EIS/EIA BOEM 2014-603.
- Dernie, K. M., Kaiser, M. J., & Warwick, R. M. (2003). Recovery rates of benthic communities following physical disturbance. *Journal of Animal Ecology*, 72 (6), 1043-1056.
- Kirkpatrick, J.A., Benjamin, S., DePiper, G.D., Murphy, T., Steinback, S., & Demarest, C. (2017). *Socio-Economic Impact of Outer Continental Shelf Wind Energy Development on Fisheries in the U.S. Atlantic, Vol. I – Report Narrative*. U.S. Dept. of the Interior, Bureau of Ocean Energy Management, Atlantic OCS Region. Washington, D.C. OCS Study BOEM 2017-012.
- U.S. Coast Guard (USCG). 2012. Pollution Incidents In and Around U.S. Waters, A Spill/Release Compendium: 1969-2011: U.S. Coast Guard Marine Information for Safety and Law Enforcement (MISLE) System.
- Van Dalssen, J. A., & Essink, K. (2001). Benthic community response to sand dredging and shoreface nourishment in Dutch coastal waters. *Senckenbergiana marit*, 31(2), 329-32.

Vineyard Wind
Addendum to Table 3-1
Coastal Zone Management Act Consistency Certification
Rhode Island Enforceable Policies

Enforceable Policy		Response
Overall Regulatory Standards		
1160.1.1	All Offshore Developments regardless of size, including energy projects, which are proposed for or located within state waters of the Ocean SAMP area, are subject to the policies and standards outlined in Sections 1150 and 1160 (except, as noted above, Section 1150 policies shall not be used for CRMC concurrence or objection for CZMA Federal Consistency reviews).	This Project is subject to CZMA Federal Consistency review and therefore the Section 1160 policies are reviewed.
1160.1.2	In assessing the natural resources and existing human uses present in state waters of the Ocean SAMP area, the Council finds that the most suitable area for offshore renewable energy development in the state waters of the Ocean SAMP area is the Renewable Energy Zone depicted in Figure 11.1 below. The Council designates this area as Type 4E waters. In the Rhode Island Coastal Resources Management Program these waters were previously designated as Type 4 (or multipurpose) but are hereby modified to show that this is the preferred site for large scale renewable energy projects in state waters. The Council may approve offshore renewable energy development elsewhere in the Ocean SAMP area, within state waters, where it is determined to have no significant adverse impact on the natural resources or human uses of the Ocean SAMP area. Large-scale Offshore Developments shall avoid areas designated as Areas of Particular Concern consistent with Section 1160.2. No large-scale offshore renewable energy development shall be allowed in Areas Designated for Preservation consistent with Section 1160.3.	The Project is not located in state waters of the Ocean SAMP area; therefore, this policy does not apply. The Project is located in federal waters within BOEM's designated Wind Energy Area.

Enforceable Policy		Response
Overall Regulatory Standards		
1160.1.3	Offshore Developments shall not have a significant adverse impact on the natural resources or existing human uses of the Rhode Island coastal zone, as described in the Ocean SAMP. Where the Council determines that impacts on the natural resources or human uses of the Rhode Island coastal zone through the pre-construction, construction, operation, or decommissioning phases of a project constitute significant adverse effects not previously evaluated, the Council shall, through its permitting and enforcement authorities in state waters and through any subsequent CZMA federal consistency reviews, require that the applicant modify the proposal to avoid and/or mitigate the impacts or the Council shall deny the proposal.	Volume I of Vineyard Wind's Construction and Operations Plan (COP) provides detailed technical information on the construction and operations phases on the project. Volume III identifies the impact producing factors during construction, operations, and decommissioning activities and analyzes potential impacts to multiple resources. CRMC has previously informed Vineyard Wind that its principal concerns are with respect to fisheries and commercial and recreational fishing. The sections of the COP most relevant to these issues are located in Volume III and include Section 6.5 (Benthic Resources), Section 6.6 (Finfish and Invertebrates), Section 6.7 (Marine Mammals), Section 6.8 (Sea Turtles), Appendix III-F (Essential Fish Habitat), and Section 7.6 (Commercial and Recreational Fishing).
1160.1.4	Any assent holder of an approved Offshore Development shall: i. Design the project and conduct all activities in a manner that ensures safety and shall not cause undue harm or damage to natural resources, including their physical, chemical, and biological components to the extent practicable; and take measures to prevent unauthorized discharge of pollutants including marine trash and debris into the offshore environment.	Vineyard Wind has developed a draft Safety Management Systems Plan ("SMS") included as Appendix I-B of the COP, which includes an Environmental Management Plan. The final Environmental Management Plan will be completed before construction begins and will contain detailed plans for ensuring compliance with all environmental laws and regulations. Under the SMS, the Environmental Coordinator will report to the Project Director and will ensure that all local, state and federal permit requirements and laws relating to environmental protection and reporting are followed. The Environmental Coordinator will monitor contractors' compliance with Project-specific environmental requirements and shall be responsible for verifying compliance with environmental protection programs and protocols for environmental incident response. In addition, all equipment suppliers and construction firms are being evaluated to ensure compliance with regulatory and Project requirements. The evaluation includes a comprehensive gap analysis review of the equipment supplier and/or

Enforceable Policy		Response
Overall Regulatory Standards		
		<p>construction firm's SMS and Environmental Management System to ensure that work can be performed in compliance with regulatory requirements. This evaluation includes ensuring that contractors have compliant oil spill response plans, hazardous waste plans, and waste management plans in place.</p> <p>A list of solid wastes and liquid wastes generated, including disposal methods and locations is provided in Section 4.2.5 of Volume I. A list of chemicals used, including the volume stored on location, their treatment, discharge or disposal methods used, and the name and location of the onshore waste receiving, treatment, and/or disposal facility is provided in Section 4.2.6 of Volume I (see Table 4.2-3).</p>
1160.1.5	Any Large-Scale Offshore Development, as defined in section 1160.1.1, shall require a meeting between the Fisherman's Advisory Board (FAB), the applicant, and the Council staff to discuss potential fishery-related impacts, such as, but not limited to, project location, construction schedules, alternative locations, project minimization and identification of high fishing activity or habitat edges. For any state permit process for a Large-Scale Offshore Development this meeting shall occur prior to submission of the state permit application. The Council cannot require a pre-application meeting for federal permit applications, but the Council strongly encourages applicants for any Large-Scale Offshore Development, as defined in Section 1160.1.1, in federal waters to meet with the FAB and the Council staff prior to the submission of a federal application, lease, license, or authorization. However, for federal permit applicants, a meeting with the FAB shall be necessary data and information required for	<p>To date, Vineyard Wind has attended three meetings with the FAB (on (on July 24, 2017, February 19, 2018, and April 11, 2018), the first of which of which was a combined FAB/Habitat Advisory Board (HAB) meeting. The first two of these meetings were held prior to CRMC's 6-month review period, which started on April 6, 2018. Another, publicly noticed meeting, with the FAB/HAB is scheduled for July 26, 2018.</p> <p>In addition, we have met or spoken with Julia Livermore, Rhode Island Department of Environmental Management's ("RI DEM") FAB representative, numerous times beginning in September, 2017 to discuss the Project, ongoing survey work, lessons learned from the Block Island project, and RI DEM's study of fishing activity.</p>

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	federal consistency reviews for purposes of starting the CZMA 6-month review period for federal license or permit activities under 15 C.F.R. part 930, subpart D, and OCS Plans under 15 C.F.R. part 930, subpart E, pursuant to 15 C.F.R. § 930.58(a)(2). Any necessary data and information shall be provided before the 6-month CZMA review period begins for a proposed project.	
1160.1.6	The Council shall prohibit any other uses or activities that would result in significant long-term negative impacts to Rhode Island's commercial or recreational fisheries. Long-term impacts are defined as those that affect more than one or two seasons.	<p>A detailed construction schedule is provided as Figure 4.1-1 in Volume I. Offshore construction activities will be complete within two years and therefore will not disrupt fishing activities over more than two seasons. The schedule takes into consideration weather delays, as well as provides that no pile driving will be conducted from January through April when endangered whales may migrate through the Project area. Vineyard Wind is working closely with BOEM, and the expert agency, the NOAA Fisheries Service (NOAA Fisheries), on the identification and analysis of potential impacts to marine mammals during Project construction, as well as potential mitigation measures.</p> <p>During the operational phase of the Project, commercial and recreational fishing can continue within the WDA.</p>
1160.1.7	The Council shall require that the potential adverse impacts of Offshore Developments and other uses on commercial or recreational fisheries be evaluated, considered, and mitigated as described in section 1160.1.9.	Section 7.6 of Volume III of the COP provides a thorough analysis of the Project's potential impact to commercial and recreational fisheries and measures to mitigate those impacts. Appendix III-E presents the Fisheries Communication Plan which includes information on financial compensation. Appendix III-I presents the Navigational Risk Assessment which analyzes existing fishery vessel use within the Wind

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		<p>Development Area (“WDA”) and presents measures to promote safe navigation through the WDA during operations, as well as measures to mitigate impacts during construction.</p> <p>Volume I also includes information on cable burial and anchoring.</p> <p><u>Cable burial:</u> Section 3.1.5 of Volume I conservatively estimates that up to 10% of the total length of the offshore export cable system could require protection measures. However, Vineyard Wind will minimize the need for cable protection to the greatest extent feasible through careful site assessment and thoughtful selection of the most appropriate cable installation tool to achieve sufficient burial. Therefore, the 10% represents a worst case estimate. For the inter-link cable and inter-array cables within the WDA, this worst case estimate represents only 0.089% of the total area of the WDA. It is also important to understand that the majority of the WDA is comprised of homogeneous fine sand and silt-sized sediments. Therefore, it is expected that cable protection would only be necessary where difficult soils, such as boulders or rock formations are encountered and burial depth cannot be achieved. Areas with cable protection will be made known to area fishermen so the areas can be avoided.</p> <p><u>Anchoring:</u> Volume I explains that within the WDA, anchored vessels will not be used as primary construction and installation vessels. Thus, any anchoring that may occur in the WDA will likely be limited and sporadic. And, as discussed in the COP, there are no sensitive seafloor habitats within the WDA that could be impacted by anchoring. The COP also explains that anchoring along the export cable route may</p>

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		occur through Muskeget Channel or in the shallower waters of Lewis Bay near the New Hampshire Avenue Landfall Site, though anchoring could occur at any point along the offshore export cable route. If used, anchored vessels will avoid sensitive seafloor habitats to the greatest extent practicable. Importantly, based on Vineyard Wind's analysis and the information received from our extensive outreach to fishermen, we are not aware that any Rhode Island fishermen who fish within Muskeget Channel or in Lewis Bay near the New Hampshire Avenue Landfall Site. Therefore, even if anchoring does occur, Rhode Island fishermen would not likely be affected. Finally, any potential impacts from anchoring activities are within the scope of the worst-case analysis of potential impacts to benthic resources, fish, and commercial and recreational fishing included in Sections 6.5, 6.6, and 7.6 of Volume III of the COP, respectively.
1160.1.8	Mitigation measures shall be consistent with the purposes of duly adopted fisheries management plans, programs, strategies and regulations of the agencies and regulatory bodies with jurisdiction over fisheries in the Ocean SAMP area, including but not limited to those set forth above in 1150.4.2.	Section 7.6 of Volume III of the COP provides a thorough analysis of the Project's potential impact to commercial and recreational fisheries and measures to mitigate those impacts.
1160.1.9	The Council recognizes that moraine edges, as illustrated in Figures 11.3 and 11.4, are important to commercial and recreational fishermen. In addition to these mapped areas, the FAB may identify other edge areas that are important to fisheries within a proposed project location. The Council shall consider the potential adverse impacts of future activities or projects on these areas to Rhode Island's commercial and recreational fisheries. Where it is determined that there is a	Volume II confirms there are no glacial moraines within the Project area.

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	significant adverse impact, the Council will modify or deny activities that would impact these areas. In addition, the Council will require assent holders for Offshore Developments to employ micro-siting techniques in order to minimize the potential impacts of such projects on these edge areas.	
1160.1.10	The finfish, shellfish, and crustacean species that are targeted by commercial and recreational fishermen rely on appropriate habitat at all stages of their life cycles. While all fish habitat is important, spawning and nursery areas are especially important in providing shelter for these species during the most vulnerable stages of their life cycles. The Council shall protect sensitive habitat areas where they have been identified through the Site Assessment Plan or Construction and Operation Plan review processes for Offshore Developments as described in section 160.5.3 (i).	Section 6.5 of Volume III contains a detailed description of benthic habitats within the Project area, Section 6.6 of Volume III contains an extensive discussion of fish and invertebrates within the Project area, and Essential Fish Habitats are discussed in Appendix III-F. These sections specifically address fish habitats within the Project area and the life histories of fishes found in the area, including species targeted by commercial and recreational fishermen.
1160.1.11	Any Large-Scale Offshore Development, as defined in Chapter 11 in section 1160.1.1, shall require a meeting between the HAB, the applicant, and the Council staff to discuss potential marine resource and habitat-related issues such as, but not limited to, impacts to marine resource and habitats during construction and operation, project location, construction schedules, alternative locations, project minimization, measures to mitigate the potential impacts of proposed projects on habitats and marine resources, and the identification of important marine resource and habitat areas. For any state permit process for a Large-Scale Offshore Development, this meeting shall occur prior to submission of the state permit application. The Council cannot require a pre-application meeting for federal	As discussed under policy 1160.1.3, Vineyard Wind met with the FAB/HAB on July 24, 2017, at which time it presented an overview of the Project and discussed ongoing activities to address numerous issues, including planned fisheries studies. Detailed information on the potential impacts to marine resource and habitats during construction and operation, project location, construction schedules, project minimization, measures to mitigate the potential impacts of proposed projects on habitats and marine resources, and the identification of important marine resource and habitat areas can be found in Section 2.0 of Volume I (Project Location); Section 4.1 of Volume I (which includes a detailed construction schedule); Section 6.5 of Volume III (Benthic

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	<p>permit applications, but the Council strongly encourages applicants for any Large-Scale Offshore Development, as defined in Section 1160.1.1, in federal waters to meet with the HAB and the Council staff prior to the submission of a federal application, lease, license, or authorization. However, for federal permit applicants, a meeting with the HAB shall be necessary data and information required for federal consistency reviews for purposes of starting the CZMA 6-month review period for federal license or permit activities under 15 C.F.R. part 930, subpart D, and OCS Plans under 15 C.F.R. part 930, subpart E, pursuant to 15 C.F.R. § 930.58 (a)(2). Any necessary data and information shall be provided before the 6-month CZMA review period begins for a proposed project.</p>	<p>Resources), Section 6.6 (Finfish and Invertebrates), Section 6.7 (Marine Mammals), Section 6.8 (Sea Turtles), and Appendix III-F (Essential Fish Habitat).</p>
1160.1.12	<p>The potential impacts of a proposed project on cultural and historic resources will be evaluated in accordance with the National Historic Preservation Act and Antiquities Act, and the Rhode Island Historical Preservation Act and Antiquities Act as applicable. Depending on the project and the lead federal agency, the projects that may impact marine historical or archaeological resources identified through the joint agency review process shall require a Marine Archaeology Assessment that documents actual or potential impacts the completed project will have on submerged cultural and historic resources.</p>	<p>A marine archaeological assessment was prepared in accordance with the requirements of the federal agency responsible for reviewing the Project, in this case BOEM. Vineyard Wind retained Gray & Pape of Providence, Rhode Island, to conduct a marine archaeological assessment for the WDA and export cable corridor. The assessment was conducted in accordance with BOEM regulations and guidance, and included archival and document research and field investigations. Section 7.3 of Volume III provides an overview of the assessment and the full report is provided in Volume II-C.</p>
1160.1.13	<p>Guidelines for Marine Archaeology Assessment in the Ocean SAMP Area can be obtained through the RIHPHC in their document, "Performance Standards and Guidelines for Archaeological Projects: Standards for Archaeological Survey" (RIHPHC 2007), or the lead federal agency responsible for reviewing the proposed development.</p>	<p>A marine archaeological assessment was prepared in accordance with the requirements of the federal agency responsible for reviewing the Project, in this case BOEM. Vineyard Wind retained Gray & Pape of Providence, Rhode Island, to conduct a marine archaeological assessment for the WDA and export cable corridor. The assessment was conducted in accordance with BOEM regulations and guidance, and included archival and</p>

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		document research and field investigations. Section 7.3 of Volume III provides an overview of the assessment and the full report is provided in Volume II-C.
1160.1.14	The potential non-physical impacts of a proposed project on cultural and historic resources shall be evaluated in accordance with 36 CFR 800.5, <i>Assessment of Adverse Effects, (v) Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features</i> . Depending on the project and the lead federal agency, the Ocean SAMP Interagency Working Group may require that a project undergo a Visual Impact Assessment that evaluates the visual impact a completed project will have on onshore cultural and historic resources	<p>Sections 7.3 and 7.4 of Volume III discuss cultural, historic and archaeological resources and Appendix III-H.b contains a visual impact assessment. However, there are no areas along the Rhode Island coast from which the Project is visible. This is because the Project is more than 41 miles from the nearest point on the Rhode Island coast with the most direct line of sight towards the Project. The maximum distance any of the Project's turbines could be visible due to the curvature of the earth and horizon line is 35.3 miles. Moreover, most of the Project is shielded from the Rhode Island coast by an intervening land mass, i.e., Martha's Vineyard. Thus, Rhode Island is not within the Area of Potential Effects (APE) for visual effects.</p> <p>BOEM has initiated its Section 106 process under the National Historic Preservation Act, to which it is understood that CRMC and the Narragansett Historic Preservation Office have been invited to participate as consulting parties.</p>
1160.1.15	A Visual Impact Assessment may require the development of detailed visual simulations illustrating the completed project's visual relationship to onshore properties that are designated National Historic Landmarks, listed on the National Register of Historic Places, or determined to be eligible for listing on the National Register of Historic Places. Assessment of impacts to specific views from selected properties of interest may be required by relevant state and federal agencies to properly evaluate the impacts and determination of adverse effect of the project on onshore cultural or historical resources	See above response under 1160.1.14; there are no areas along the Rhode Island coast from which the Project is visible.

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Overall Regulatory Standards		
1160.1.16	A Visual Impact Assessment may require description and images illustrating the potential impacts of the proposed project	A Visual Impact Assessment is included in Appendix III-H.a and was prepared in accordance with BOEM's guidelines. However, as described in the above response under 1160.1.14; there are no areas along the Rhode Island coast from which the Project is visible.
1160.1.17	Guidelines for Landscape and Visual Impact Assessment in the Ocean SAMP Area can be obtained through the lead federal agency responsible for reviewing the proposed development.	A Visual Impact Assessment is included in Appendix III-H.a and was prepared in accordance with BOEM's guidelines. However, as described in the above response under 1160.1.14; there are no areas along the Rhode Island coast from which the Project is visible.
Areas of Particular Concern		
1160.2.1	Areas of Particular Concern (APCs) have been designated in state waters through the Ocean SAMP process with the goal of protecting areas that have high conservation value, cultural and historic value, or human use value from Large-Scale Offshore Development. These areas may be limited in their use by a particular regulatory agency (e.g. shipping lanes), or have inherent risk associated with them (e.g. unexploded ordnance locations), or have inherent natural value or value assigned by human interest (e.g. glacial moraines, historic shipwreck sites). Areas of Particular Concern have been designated by reviewing habitat data, cultural and historic features data, and human use data that has been developed and analyzed through the Ocean SAMP process. Currently designated Areas of Particular Concern are based on current knowledge and available datasets; additional Areas of Particular Concern may be identified by the Council in the future as new datasets are made available. Areas of Particular Concern may be elevated to Areas Designated for Preservation in the future if future studies show that Areas of	No physical structures of the Project are located within an area of particular concern (APC) in state waters that is listed in the Ocean SAMP. The Project is located within federal waters in BOEM's designated Wind Energy Area. There are no important habitats or areas of high natural productivity within the Project area. The historic and cultural aspects of the Project area have been fully evaluated. See COP Volume III, Sections 7.3 and 7.4, and Appendix II-C. While some recreational fishing occurs within the Project area, it is not an area of high recreational value. Moreover, recreational fishing will not be precluded by the Project. In addition, it is not an area considered important for navigation, transportation, military and other human uses. See COP Appendix III-I. Finally, the available data on fishing activity in the Project area does not indicate that it is an area of high fishing activity.

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Areas of Particular Concern		
	<p>Particular Concern cannot risk even low levels of Large-Scale Offshore Development within these areas. Areas of Particular Concern include:</p> <ul style="list-style-type: none"> i. Areas with unique or fragile physical features, or important natural habitats; ii. Areas of high natural productivity; iii. Areas with features of historical significance or cultural value; iv. Areas of substantial recreational value; v. Areas important for navigation, transportation, military and other human uses; and vi. Areas of high fishing activity. 	
1160.2.2.	<p>The Council has designated the areas listed below in section 1160.2.3 in state waters as Areas of Particular Concern. All Large-scale, Small-scale, or other offshore development, or any portion of a proposed project, shall be presumptively excluded from APCs. This exclusion is rebuttable if the applicant can demonstrate by clear and convincing evidence that there are no practicable alternatives that are less damaging in areas outside of the APC, or that the proposed project will not result in a significant alteration to the values and resources of the APC. When evaluating a project proposal, the Council shall not consider cost as a factor when determining whether practicable alternatives exist. Applicants which successfully demonstrate that the presumptive exclusion does not apply to a proposed project because there are no practicable alternatives that are less damaging in areas outside of the APC must also demonstrate that all feasible efforts have been made to avoid damage to APC resources and values and that there will be no significant alteration of the APC resources or values.</p>	<p>No physical structures of the Project are located within an area of particular concern (APC) listed in the Ocean SAMP. Additionally, Volume II demonstrates that there are no glacial moraines or other habitat features within the Project area considered an APC in the Ocean SAMP. Fishing activity within the Project Area is discussed in Section 7.6 of Volume III.</p>

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Areas of Particular Concern		
	Applicants successfully demonstrating that the presumptive exclusion does not apply because the proposed project will not result in a significant alteration to the values and resources of the APC must also demonstrate that all feasible efforts have been made to avoid damage to the APC resources and values. The Council may require a successful applicant to provide a mitigation plan that protects the ecosystem. The Council will permit underwater cables, only in certain categories of Areas of Particular Concern, as determined by the Council in coordination with the Joint Agency Working Group. The maps listed below in section 1160.2.3 depicting Areas of Particular Concern may be superseded by more detailed, site-specific maps created with finer resolution data.	
1160.2.3	<p>Areas of particular concern that have been identified in the Ocean SAMP area in state waters are described as follows.</p> <ul style="list-style-type: none"> i. Historic shipwrecks, archeological or historical sites ii. Offshore dive sites within the Ocean SAMP area, as shown in Figure 11.2. iii. Glacial moraines are important habitat areas for a diversity of fish and other marine plants and animals because of their relative structural permanence and structural complexity. Glacial moraines create a unique bottom topography that allows for habitat diversity and complexity, which allows for species diversity in these areas and creates environments that exhibit some of the highest biodiversity within the entire Ocean SAMP area. The Council also recognizes that because glacial moraines contain valuable habitats for fish and other marine life, they are also important 	Section 7.3 of Volume III provides an overview of the marine archaeological assessment and the full report is provided in Volume II-C. The assessment includes identification of historic shipwrecks, archaeological or historical sites. Appendix III-I contains a comprehensive Navigational Risk Assessment that was developed in consultation with the Coast Guard and incorporates comments received by both BOEM and the Coast Guard. The Navigational Risk Assessment addresses shipping lanes, precautionary areas, recommended vessel routes, ferry routes, dredge disposal sites, military testing areas, unexploded ordinance, pilot boarding areas, anchorages, racing activities, and high intensity commercial marine traffic. The available data on fishing activity in the Project area does not indicate that it is an area of high fishing activity.

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Areas of Particular Concern		
	<p>to commercial and recreational fishermen. Accordingly, the Council shall designate glacial moraines as identified in Figures 11.3 and 11.4 as Areas of Particular Concern.</p> <p>iv. Navigation, Military, and Infrastructure areas including: designated shipping lanes, precautionary areas, recommended vessel routes, ferry routes, dredge disposal sites, military testing areas, unexploded ordnance, pilot boarding areas, anchorages, and a coastal buffer of 1 km as depicted in Figure 11.5 are designated as Areas of Particular Concern. The Council recognizes the importance of these areas to marine transportation, navigation and other activities in the Ocean SAMP area.</p> <p>v. Areas of high fishing activity as identified during the pre-application process by the Fishermen’s Advisory Board, as defined in section 1160.1.6, may be designated by the Council as Areas of Particular Concern.</p> <p>vi. Several heavily-used recreational boating and sailboat racing areas, as shown in Figure 11.6, are designated as Areas of Particular Concern. The Council recognizes that organized recreational boating and sailboat racing activities are concentrated in these particular areas, which are therefore important to sustaining Rhode Island’s recreation and tourism economy.</p> <p>vii. Naval Fleet Submarine Transit Lanes, as described in Chapter 7, Marine Transportation, Navigation, and Infrastructure section 720.7, are designated as Areas of Particular Concern.</p>	

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Areas of Particular Concern		
	viii. Other Areas of Particular Concern may be identified during the pre-application review by state and federal agencies as areas of importance	
1160.2.4	Developers proposing projects for within the Renewable Energy Zone as described in section 1160.1.2 shall adhere to the requirements outlined in 1160.2 regarding Areas of Particular Concern in state waters, including any Areas of Particular Concern that overlap the Renewable Energy Zone (see Figure 11.7).	The Project is not proposed within the Renewable Energy Zone or any Areas of Particular Concern located within Rhode Island state waters. As noted in Section 2.0 of Volume I, the Project is located within BOEM Lease Area OCS-A 0501 in federal waters.
Prohibitions and Areas Designated for Preservation		
1160.3.1	<p>Areas Designated for Preservation are designated in the Ocean SAMP area in state waters for the purpose of preserving them for their ecological value. Areas Designated for Preservation are afforded additional protection than Areas of Particular Concern (see section 1160.2) because of scientific evidence indicating that Large-Scale Offshore Development in these areas may result in significant habitat loss. The areas described in Section 1160.3 are designated as Areas Designated for Preservation. The Council shall prohibit any Large-Scale Offshore Development, mining and extraction of minerals, or other development that has been found to be in conflict with the intent and purpose of an Area Designated for Preservation. Underwater cables are exempt from this prohibition. Areas designated for preservation include:</p> <p>i. Ocean SAMP sea duck foraging habitat in water depths less than or equal to 20 meters [65.6 feet] (as shown in Figure 11.8) are designated as Areas Designated for Preservation. The current research regarding sea duck foraging areas indicates that this</p>	The Project is not located within an Area Designated for Preservation in the Ocean SAMP area in state waters. Further, all offshore components of the Project, excluding underwater cables, are located in greater than 20 m of water depth (as indicated in Section 2.0 of Volume I of the COP, water depths in the WDA are approximately 37-49.5 m). BOEM specifically excluded from the MA WEA sea duck foraging habitat.

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Prohibitions and Areas Designated for Preservation		
	habitat is depth limited and generally contained within the 20 meter depth contour. Thus, the entire area within the 20 meter contour is being protected as an Area Designated for Preservation until further research allows the Council and other agencies to make a more refined determination	
1160.3.2	The mining and extraction of minerals, including sand and gravel, from tidal waters and salt ponds is prohibited. This prohibition does not apply to dredging for navigation purposes, channel maintenance, habitat restoration, or beach replenishment for public purposes.	No mining or extraction of minerals from tidal waters and salt ponds is proposed. As noted in Section 2.0 of Volume I, the Project is located within BOEM Lease Area OCS-A 0501 in federal waters.
1160.3.3	The Council shall prohibit any Offshore Development in areas identified as Critical Habitat under the Endangered Species Act.	As described in Sections 6.6 and 6.7 of Volume III, no structures are proposed within areas identified as Critical Habitat under the Endangered Species Act.
1160.3.4	Dredged material disposal, as defined in RICRMP Section 300.9 and subject to the regulations of RICRMP Section 300.9, is further limited in the Ocean SAMP area by the prohibition of dredged material disposal in the following Areas of Particular Concern as defined in section 1160.2: historic shipwrecks, archaeological, or historic sites; offshore dive sites; navigation, military, and infrastructure areas; and moraines. Beneficial reuse may be allowed in Areas Designated for Preservation, whereas all other dredged material disposal is prohibited in those areas. All disposal of dredged material will be conducted in accordance with the U.S. EPA and U.S. Army Corps of Engineers' manual, <i>Evaluation of Dredged Material Proposed for Ocean Disposal</i> .	As described in Section 4 of Volume I, dredging of the tops of sand waves may be required and, once dredged, the removed sediments will be redeposited (via bottom dumping or side-casting) within the 810 m wide offshore export cable corridor. No dredged material will be redeposited on historic shipwrecks, archaeological, or historic sites; offshore dive sites; navigation, military, and infrastructure areas; and moraines. No beneficial reuse is proposed; sediments will be retained in the vicinity of the area from which they are dredged. As applicable, all disposal of dredged material will be conducted in accordance with the U.S. EPA and U.S. Army Corps of Engineers' manual, <i>Evaluation of Dredged Material Proposed for Ocean Disposal</i> .

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Other Areas		
1160.4	<p>Large-scale projects or other development which is found to be a hazard to commercial navigation shall avoid areas of high intensity commercial marine traffic in state waters. Avoidance shall be the primary goal of these areas. Areas of High Intensity Commercial Marine Traffic are defined as having 50 or more vessel counts within a 1 km by 1 km grid, as shown in Figure 11.9.</p>	<p>Appendix III-I includes a Navigational Risk Assessment (NRA). The NRA found that the Project will create only minor impacts to navigational safety within the Offshore Project Area once operational. During the construction phase, increased construction vessel traffic within the area could potentially increase risk to navigational safety in the approach channels leading to the construction ports and within the offshore export cable corridor (OECC) during cable-laying activities.</p> <p>Specific to Rhode Island, the Project may use a port facility in Rhode Island to offload, store, and stage the turbine blades or other components for delivery to the offshore WDA, as needed and furthers identifies that either the Port of Providence or the Quonset Point port may be used, both of which are existing industrial ports. Section 4.2.3.7 of Volume I explains that feeder barges would transport components, i.e. blades, from the port to the installation vessel. Table 4.2-1 in Volume I specifically describes the vessels that will be used to transport the blades from Europe to the port and from the port to the WDA. As Table 4.2-1 demonstrates, approximately 3 to 5 vessels would transport the blades from Europe to the Rhode Island port, where the blades would be stored until needed.</p> <p>Two feeder vessels would be used to transport the blades from the Rhode Island port to the WDA for installation. Worst case, it is estimated in Attachment C of Appendix III-B that up to approximately 100 roundtrips would be needed to transport the blades for installation on 100 WTGs (i.e., each roundtrip carrying one full blade set for a WTG). As shown on the construction provided as Figure 4.1-1 in Volume I, WTG installation is</p>

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Other Areas		
		<p>expected to begin in Spring 2021 and will take approximately 8 months to complete. Thus, there would be approximately 2 round trips per day out of the Rhode Island port. The types of vessels and the level of vessel activity associated with the Project is consistent with the Rhode Island ports' current industrial usage and does not represent a significant increase in traffic.</p> <p>Mitigation measures have been developed to minimize and reduce impacts to commercial and recreational navigation safety during all Project phases to the greatest extent practicable.</p>
Application Requirements		
1160.5	Tables 11.4 through 11.6 relate to COP requirements	Table 1.6-1 of Volume I lists where all the required information in Tables 11.4 and 11.6 can be found in the COP.
Design, Fabrication and Installation Standards		
1160.6	1. Certified Verification Agent- The Certified Verification Agent (CVA) shall use good engineering judgment and practices in conducting an independent assessment of the design, fabrication and installation of the facility. The CVA shall certify in the Facility Design Report to the Council that the facility is designed to withstand the environmental and functional load conditions appropriate for the intended service life at the proposed location. The CVA is paid for by the applicant, but is approved and reports to the Council.	The Project is utilizing a CVA, which reports to BOEM as the lead federal agency. Appendices I-C through I-E describes the statement of qualifications, CVA scope of work, and hierarchy of standards.
Pre-Construction Standards		
1160.7.1-3	Standards 1-3 explain standards and requirements for an applicant that holds an assent with the state of Rhode Island.	The Project is located in federal waters under lease OCS-A 0501 with BOEM; therefore, these policies are not applicable.
1160.7.4 and 5	The Council shall consult with the U.S. Coast Guard, the U.S. Navy, marine pilots, the Fishermen's Advisory Board as defined in section 1160.1.6, fishermen's organizations, and recreational boating organizations when	The Navigational Risk Assessment provided as Appendix III-I of the COP describes how the Project will minimize interference with existing marine traffic and promote navigational safety.

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Pre-Construction Standards		
	<p>scheduling offshore marine construction or dredging activities. Where it is determined that there is a significant conflict with season limited commercial or recreational fishing activities, recreational boating activities or scheduled events, or other navigation uses, the Council shall modify or deny activities to minimize conflict with these uses.</p> <p>The Council shall require the assent holder to provide for communication with commercial and recreational fishermen, mariners, and recreational boaters regarding offshore marine construction or dredging activities. Communication shall be facilitated through a project website and shall complement standard U.S. Coast Guard procedures such as Notices to Mariners for notifying mariners of obstructions to navigation.</p>	<p>As described in the Navigational Risk Assessment, the Project has consulted with the US Coast Guard, the US Navy, marine pilots, and various stakeholders and will continue to consult with other fishermen's boards and organizations as construction approaches. The Project anticipates issuing Notices to Mariners and providing a website with frequently updated information.</p>
1160.7.6	<p>For all Large-Scale Offshore Developments, underwater cables, and other development projects as determined by the Council, the assent holder shall designate and fund a third-party fisheries liaison. The fisheries liaison must be knowledgeable about fisheries and shall facilitate direct communication between commercial and recreational fishermen and the project developer. Commercial and recreational fishermen shall have regular contact with and direct access to the fisheries liaison throughout all stages of an offshore development (pre-construction; construction; operation; and decommissioning).</p>	<p>Vineyard Wind's Fisheries Communication Plan (Appendix III-E of the COP) explains that Vineyard Wind's fisheries communication is conducted through several roles including Fisheries Liaisons (FLs) and Fisheries Representatives (FR). The FR is intended to represent a particular fishery industry, organization, gear type, port or region, or sector(s) to the project, communicating concerns, issues and other input for the life of the project, from development and pre-construction through decommissioning. Typically, the FR is an active fisherman, or group representing active fishermen, within the region, fishery, or sector they represent. The FL facilitates the work of the FRs by serving as a knowledgeable point of contact to which the FRs can efficiently and effectively communicate. The FL also serves to communicate on behalf of the Project to the fisheries sectors directly, and with the FRs. The FL communicates across fishery communities and regions in order to educate and disseminate vital information regarding the project</p>

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Pre-Construction Standards		
		<p>to fishermen, and receive input back to the project. The FL works to validate fisheries information through cross-referencing among data sources.</p> <p>Vineyard Wind has had a FR in place since 2010 and a FL in place since 2016. Currently, Crista Bank is the Vineyard Wind FL. Ms. Bank is a researcher who has been working with fishermen along the New England coast, including fishermen from Rhode Island, for more than 12 years. Nate Mayo, Vineyard Wind, serves as the FL specifically for scallopers and shellfish farmers in Lewis Bay. Their contact information is posted on Vineyard Wind's website.</p>
1160.7.7	Where possible, Offshore Developments should be designed in a configuration to minimize adverse impacts on other user groups, which include but are not limited to: recreational boaters and fishermen, commercial fishermen, commercial ship operators, or other vessel operators in the project area. Configurations which may minimize adverse impacts on vessel traffic include, but are not limited to, the incorporation of a traffic lane through a development to facilitate safe and direct navigation through, rather than around, an Offshore Development	<p>Section 3.1.1.1 of Volume I describes the site layout and how the Project layout incorporates two transit corridors. The proposed Project layout is a result of input from numerous stakeholders, including the Coast Guard and fishermen who use or transit the Project area. As described in Section 3.0 of Volume III, the original layout was designed to optimize energy development, which requires that the WTGs be scattered and closer together, not aligned in a grid pattern with large separation distances. Vineyard Wind heard and understood the need for transit corridors and separation distances that allow the area to be fished. Vineyard Wind also considered the available data on vessel activity in the area, most of which shows that fishing activity takes place north of the Project area. Vineyard Wind worked closely with the Coast Guard to establish the separation distances, transit corridors, and the orientation of the grid. Thus, the Project layout was designed to address many competing interests, including competing fishing interests. Of particular concern was the potential impact of the Project on the scallop fishery out of New Bedford, which according to NOAA data, has an annual average value of over \$281 million. The orientation of the transit</p>

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		corridor through the Project was specifically designed in consultation with the scallop industry to allow passage through the Project to fishing areas, and the wide distances between the turbines allows for mobile and fixed gear fishing within the Project area. Appendix III-I of the COP includes a Navigational Risk Assessment.
1160.7.8	Any assent holder of an approved Offshore Development shall work with the Council when designing the proposed facility to incorporate where possible mooring mechanisms to allow safe public use of the areas surrounding the installed turbine or other structure.	The Project is located in federal waters under lease OCS-A 0501 with BOEM. Vineyard Wind is working with BOEM, BSEE, and the US Coast Guard regarding the design of the Project to ensure the safe use of the area.
1160.7.9	The facility shall be designed in a manner that minimizes adverse impacts to navigation. As part of its application package, the project applicant shall submit a navigation risk assessment under the U.S. Coast Guard's Navigation and Vessel Inspection Circular 02-07, "Guidance on the Coast Guard's Roles and Responsibilities for Offshore Renewable Energy Installations."	Appendix III-I of the COP includes a Navigational Risk Assessment. The Navigational Risk Assessment has been updated to incorporate comments from the US Coast Guard and will continue to be refined in consultation with the US Coast Guard.
1160.7.10	Applications for projects proposed to be sited in state waters pursuant to the Ocean SAMP shall not have a significant impact on marine transportation, navigation, and existing infrastructure.	The Project is not located in RI state waters; nevertheless, the Navigational Risk Assessment provided in Appendix III-I of the COP demonstrates that the Project will not have a significant impact on marine transportation or navigation.
1160.7.11	Prior to construction, the Applicant shall provide a letter from the U.S. Coast Guard showing it meets all applicable U.S. Coast Guard standards.	BOEM is consulting with the U.S. Coast Guard and Vineyard Wind will also obtain a Private Aids to Navigation authorization from the U.S. Coast Guard.
Standards for Construction Activities		
1160.8	Standards 1-10 are listed for Assent Holders.	The Project is located within federal waters in BOEM Lease Area OCS-A 0501; therefore, these standards do not apply. However, because these standards are modeled after BOEM's standards they are addressed in COP Volume I.

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1160.9.1	<p>1. The Council in coordination with the Joint Agency Working Group, as described in Section 1160.1.4, shall determine requirements for monitoring prior to, during, and post construction. Specific monitoring requirements shall be determined on a project by-project basis and may include but are not limited to the monitoring of:</p> <ul style="list-style-type: none"> i. Coastal processes and physical oceanography ii. Underwater noise iii. Benthic ecology iv. Avian species v. Marine mammals vi. Sea turtles vii. Fish and fish habitat viii. Commercial and recreational fishing ix. Recreation and tourism x. Marine transportation, navigation and existing infrastructure xi. Cultural and historic resources 	<p>The Project will be carefully monitored during construction, operation, and decommissioning. Resource specific monitoring plans are discussed throughout Volume III of the COP. Specific examples of such monitoring plans include but are not limited to:</p> <ul style="list-style-type: none"> • Section 5.2 describes water quality monitoring. • Section 6.2 describes avian monitoring. • Section 6.6 of Volume III describes how Vineyard Wind is working with the Massachusetts School for Marine Science and Technology and local stakeholders to develop a monitoring plan to measure the Project's effect on fisheries resources. • Sections 6.7 and 6.8 of Volume III describe the monitoring and mitigation measures that will be utilized for marine mammals and sea turtles. • Section 7.3 describes ongoing investigations into cultural and historic resources. • Appendix III-D includes the Benthic Habitat Monitoring Proposal <p>It is expected that the Project's monitoring plans will continue to be refined through the federal and state review and approval processes.</p>
1160.9.2	<p>The Council shall require where appropriate that project developers perform systematic observations of recreational boating intensity at the project area at least three times: pre-construction; during construction; and post-construction. Observations may be made while conducting other field work or aerial surveys and may include either visual surveys or analysis of aerial photography or video photography. The Council shall require where appropriate that observations capture both weekdays and weekends and reflect high-activity periods including the July 4th holiday</p>	<p>The Navigational Risk Assessment included as Appendix III-I of the COP includes an assessment of vessel traffic within the Project area based on various available datasets (Automatic Identification System, Vessel Monitoring System, etc.) over several years.</p>

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	weekend and the week in June when Block Island Race Week takes place. The quantitative results of such observations, including raw boat counts and average number of vessels per day, will be provided to the Council.	
1160.9.3	<p>The items listed below shall be required for all Offshore Developments:</p> <ul style="list-style-type: none"> i. A biological assessment of commercially and recreationally targeted species shall be required within the project area for all Offshore Developments. This assessment shall assess the relative abundance, distribution, and different life stages of these species at all four seasons of the year. This assessment shall comprise a series of surveys, employing survey equipment and methods that are appropriate for sampling finfish, shellfish, and crustacean species at the project's proposed location. Such an assessment shall be performed at least four times: pre-construction (to assess baseline conditions); during construction; and at two different intervals during operation (i.e. 1 year after construction and then post-construction). At each time this assessment must capture all four seasons of the year. This assessment may include evaluation of survey data collected through an existing survey program, if data are available for the proposed site. The Council will not require this assessment for proposed projects within the Renewable Energy Zone that are proposed within 2 years of the adoption of the Ocean SAMP. ii. An assessment of commercial and recreational fisheries effort, landings, and landings value shall be required for all proposed Offshore Developments. Assessment shall focus on the proposed project area and alternatives. This 	<p>Section 6.5 (Benthic Resources), Section 6.6 (Finfish and Invertebrates), and Appendix III-F (Essential Fish Habitat) of Volume III of the COP describe commercially and recreationally targeted species. An assessment of commercial and recreational fisheries is provided in Section 7.6 (Commercial and Recreational Fishing) of Volume III of the COP.</p>

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	assessment shall evaluate commercial and recreational fishing effort, landings, and landings value at three different stages: preconstruction (to assess baseline conditions); during construction; and during operation. At each stage, all four seasons of the year must be evaluated. Assessment may use existing fisheries monitoring data but shall be supplemented by interviews with commercial and recreational fishermen. Assessment shall address whether fishing effort, landings, and landings value has changed in comparison to baseline conditions. The Council will not require this assessment for proposed projects within the Renewable Energy Zone that are proposed within 2 years of the adoption of the Ocean SAMP.	
1160.9.4	The Council in coordination with the Joint Agency Working Group may also require facility and infrastructure monitoring requirements, that may include but are not limited to: i. Post construction monitoring including regular visual inspection of inner array cables and the primary export cable to ensure proper burial, foundation and substructure inspection.	Vineyard Wind plans to conduct post construction monitoring of various Project components, including offshore export cables and inner-array cables. The details of such post construction monitoring are described in Sections 4.3.2 and 4.3.4 of Volume I of the COP.