MAYFLOWER WIND

Appendix D1. Massachusetts Coastal Zone Management Act Consistency Certification

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MAYFLOWER WIND

Prepared for:
Mayflower Wind Energy LLC

Final Massachusetts Coastal Zone Management Act Consistency Certification

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January 2022

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Revision History

Revision	Revision date	Details	Authorized	Name	Position
0	2/12/21	Submittal	Yes	Nancy Palmstrom	Project Manager
1	8/30/21	Revised to include updated Falmouth Project Design Envelope and in response to BOEM comments	Yes	Nancy Palmstrom	Project Manager
2	1/13/22	Consolidated to include Project components in Falmouth, Brayton Point, and federal waters	Yes	Nancy Palmstrom	Project Manager
2.1	9/1/22	Section 508 Access	Yes	Nancy Palmstrom	Project Manager

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Figures (in Attachment 1)

Acronyms and Abbreviations

Abbreviation or Acronym	Definition
BOEM	Bureau of Ocean Energy Management
CFR	Code of Federal Regulations
CMR	Code of Massachusetts Regulations
COP	Construction and Operations Plan
CRMC	Coastal Resources Management Council
CZMA	Coastal Zone Management Act
CZM	Massachusetts Office of Coastal Zone Management
DEP	Department of Environmental Protection
ECC	Export Cable Corridor
EEA	Massachusetts Executive Office of Energy and Environmental Affairs
EIS	Environmental Impact Statement
ENF/EIR	Environmental Notification Form/Environmental Impact Report
ft	foot/feet
FEIR	Final Environmental Impact Report
GLD	geographic location descriptions
G&G	geophysical and geotechnical
HDD	Horizontal Directional Drilling
HVAC	high voltage alternating current
HVDC	high voltage direct current
ha	hectare
km	kilometer
kV	kilovolt
Lease Area	Lease Area OCS-A 0521
m	meter
Mayflower Wind	Mayflower Wind Energy LLC
MEPA	Massachusetts Environmental Policy Act
M.G.L.	Massachusetts General Laws
MHC	Massachusetts Historical Commission
mi	mile
nm	nautical mile
NRHP	National Register of Historic Places
NOAA	National Oceanic and Atmospheric Administration
O&M	Operations and Maintenance
OCS	Outer Continental Shelf
OMP	Ocean Management Plan

OSP	Offshore Substation Platform
PDE	project design envelope
POI	Point of Interconnection
Q	quarter
ROW	Right of Way
SAV	Submerged Aquatic Vegetation
SPI/PV	sediment profile imaging/plan view
SSU	special, sensitive or unique
TJB	transition joint bay
USC	United States Code
USCG	United States Coast Guard
UXO	Unexploded ordnance
WPA	Wetlands Protection Act
WTG	Wind Turbine Generator

1.0 Introduction

Mayflower Wind Energy LLC (Mayflower Wind) proposes an offshore wind renewable energy generation project (the Project) located in federal waters off the southern coast of Massachusetts in the Outer Continental Shelf (OCS) Lease Area OCS-A 0521 (Lease Area). The Project will deliver electricity to the regionally administered transmission system via export cables with sea-to-shore transitions in Falmouth, Massachusetts, Portsmouth, Rhode Island (for overland crossing of Aquidneck Island), and Brayton Point in Somerset, Massachusetts as well as onshore transmission systems extending to the respective points of interconnection (POIs) in Massachusetts (Figure 1). This Coastal Zone Management Act (CZMA) Consistency Statement is specific to those portions of the Project located within Waters of the Commonwealth of Massachusetts and portions of the Project within federal waters that may affect regulated Massachusetts coastal resources (Figure 2). A separate CZMA certification statement has been prepared for a portion of the Project within Rhode Island State Waters and the two National Oceanic and Atmospheric Administration (NOAA)-approved geographic location descriptions (GLDs) subject to jurisdiction by the Rhode Island Coastal Resources Management Council (CRMC) (Construction and Operations Plan [COP] Appendix D2).

1.1 Project Objectives

The Project's objective is to provide Massachusetts, and the regional electricity grid, with clean, renewable wind energy in accordance with the Commonwealth of Massachusetts' Section 83C II and Section 83C III of the Green Communities Act and Mayflower Wind's winning bids selected by the Electric Distribution Companies that serve Massachusetts customers. The first bid was provided by Mayflower Wind in response to the 2019 Offshore Wind Energy Generation request for proposals ("Section 83C II RFP") and has now been memorialized in executed Power Purchase Agreements with the Electric Distribution Companies that were approved by to the Massachusetts Department of Public Utilities in November 2020. The second bid was provided by Mayflower Wind in response to the 2021 Offshore Wind Energy Generation request for proposals ("Section 83C III RFP"). Mayflower Wind's winning bid was selected by the Electric Distribution Companies on December 17, 2021.

There are several significant economic, environmental, and social benefits to offshore wind power, including the generation of electricity that does not emit air pollutants and that can replace other more environmentally costly forms of electricity generation. The Project is expected to help achieve mandatory Commonwealth environmental and clean/renewable energy goals, including by potentially eliminating at least 1.6 million metric tons of CO_2 emissions annually once in operation[1] — the equivalent of taking at least 347,968 cars off the road per year. These benefits also extend to coastal communities and to threatened and endangered species. The generation of clean renewable energy will reduce the need for greenhouse gas emitting electricity generation which will contribute to a reduction in the harmful effects of climate change such as sea level rise and ocean acidification both of which pose significant harm to the human and natural environment of the New England coastline. Additionally, the Project is expected to bring significant employment and other economic benefits to the south coast of Massachusetts and the region. It should be instrumental in creating a thriving, utility scale, domestic offshore wind industry.

In Energy Policy #2, a non-enforceable policy, the Massachusetts Office of Coastal Zone Management (CZM) recognizes "energy conservation and renewable energy use are significant coastal management issues" and in turn "CZM strongly endorses efforts to conserve energy and to develop alternative sources of power."[2] The Project will produce a viable form of alternative energy for the Commonwealth and be a key addition to promoting the use of alternative energies in the region.

Specific environmental and socioeconomic benefits that the Project will provide include:

[1] Daymark Energy Advisors. (2021). *Massachusetts 83C-III Benefits Report: Mayflower Wind Proposal A.* Prepared for Mayflower Wind Energy, LLC. (2021, September 16).

[2] Coastal Zone Management, Policy Guide, 35-36.

1. The Project is expected to be the Commonwealth's single greatest contributor to achieving the emissions reduction goals outlined in the 2008 Global Warming Solutions Act, the 2010 Clean Energy and Climate Plan for 2020 (updated in 2015), and the Massachusetts 2050 Decarbonization Plan[3] (released in December 2020), helping to achieve Massachusetts' Green House Gas targets for 2030, 2040, and 2050.
2. The Project is expected to bring significant employment and other economic benefits to Massachusetts, including creation of more than 14,310 full time equivalent jobs throughout the Project lifecycle from both direct, indirect, and induced employment opportunities. From employment creation, it is estimated that $1.1 billion of gross earnings will be made in Massachusetts.[4]
3. The Project will collaborate with the Massachusetts Clean Energy Center to make investments that make Massachusetts a hub for offshore wind through ports and infrastructure improvements, innovative technologies and applied research, and workforce training and development. Under the Massachusetts Clean Energy Center's administration, these investments will build on the efforts of existing institutions, including the Massachusetts Research Partnership in Offshore Wind, as well as workforce development programs, such as those with Bristol Community College and the Massachusetts Maritime Academy, to train and equip the Massachusetts offshore wind workforce.

1.2 Regulatory Applicability

In compliance with the Federal Coastal Zone Management Act (CZMA, 16 United States Code [USC] 1451 et seq.), Mayflower Wind has prepared this consistency certification for the Bureau of Ocean Energy Management (BOEM) and the Massachusetts Office of Coastal Zone Management (CZM) to demonstrate compliance with the provisions identified as enforceable by the coastal zone management policies of the Commonwealth of Massachusetts.[5] Federal Consistency Regulations (15 Code of Federal Regulations [CFR] 930.00) require all Federal Actions within or outside the coastal zone that involve reasonably foreseeable coastal effects on any land or water use or natural resource of a state's coastal zone to be consistent with all enforceable policies of the state's CZM Program. Federal Actions include the permitting of actions by private entities. This Project involves the installation of energy facilities on the OCS and therefore meets the definition of a Coastal Energy Activity under the CZMA (16 USC 1453 (5)(i)). The Project will require approval of the COP[6] by BOEM and, subsequently, a Record of Decision issued by BOEM under the National Environmental Policy Act in response to a Final Environmental Impact Statement (EIS), and a permit from the United States Army Corps of Engineers pursuant to Section 404 of the federal Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899. Actions requiring a federal permit or license or receiving federal funding must be compliant with the enforceable policies of the state CZM Program.

Within Massachusetts, the CZMA is administered within the coastal zone by the Massachusetts Office of CZM within the Executive Office of Energy and Environmental Affairs (EEA). The Ocean Act of 2008 required EEA to develop a comprehensive Ocean Management Plan (OMP). The first OMP was finalized in 2009 which was subsequently revised in 2015. OMP outlines a comprehensive approach to manage ocean and coastal resources that can be implemented through existing state programs and regulations. The plan also informs siting priorities, locations, and standards for allowed uses, facilities and activities. The management is based on an approach that directs new development away from special, sensitive, or unique (SSU) resources, and areas important for water dependent uses that are identified and mapped in the planning process.[7] The 12 important SSUs that are the foundation of OMP include: North Atlantic Right Whale core habitat, Humpback Whale core habitat, Fin Whale core habitat, Roseate Tern core habitat, special concern

[3] Massachusetts 2050 Decarbonization Roadmap, published in December 2020 (Link: https://www.mass.gov/info-details/ma-decarbonization-roadmap)

[4] BVG Associates. (BVGA). (2021). *Economic Benefits. A Technical Report to Support Mayflower Wind's Bid for Long-Term Contracts for Offshore Wind Energy Projects.* (2021, August).

[5] Massachusetts Office of Coastal Zone Management. 2011. Policy Guide, October 2011. Executive Office of Energy and Environmental Affairs. Boston, MA. Available URL: https://www.mass.gov/files/documents/2016/08/qc/czm-policy-guide-october2011.pdf [Accessed July 28, 2020].

[6] Mayflower Wind Construction and Operations Plan. Available URL: https://www.boem.gov/renewable-energy/state-activities/mayflower-wind#tabs-2046

[7] Massachusetts Ocean Management Plan (2015). Volume 1: Management and Administration. https://www.mass.gov/files/documents/2016/08/ua/2015-ocean-plan-v1-complete-low-res.pdf

(Arctic, Least, and Common) Tern core habitat, Sea Duck core habitat, Leach's Storm Petrel important nesting habitat, Colonial Waterbirds important nesting habitat, hard/complex seafloor, eelgrass, intertidal flats, and important fish resources.

In Massachusetts, the Coastal Zone includes the lands and waters within an area defined by the seaward limit of the state's territorial sea, extending from the Massachusetts-New Hampshire border south to the Massachusetts-Rhode Island border, and landward to 100 feet (ft) (30 meters [m]) inland of specified major roads, rail lines, other visible rights-of-way, or in the absence of these, at the coordinates specified by CZM. The Massachusetts Coastal Zone includes all of Cape Cod, Nantucket, Martha's Vineyard, and the Elizabeth Islands. Project facilities to be located within the coastal zone, and thus within the jurisdiction of the CZM, include the offshore export cables within State waters, associated landfall locations, onshore underground export cables, onshore substation, high voltage direct current (HVDC) converter station, and underground transmission cables (Figure 2).

1.3 Necessary Data and Information

In addition to the enforceable policies of the Commonwealth of Massachusetts identified and addressed in Section 3.0 of this report, the Commonwealth considers certain background information on a proposed project in their decision-making process.[8] This background and general Project information is summarized in this document and is described in detail within the COP developed by Mayflower Wind and submitted to BOEM. Table 1-1 below provides details on the required information outlined within the CZM Policy Guide, dated October 2011, and where that information can be found within this document as well as the COP.

This document is intended to provide background information on portions of the Project relevant to the CZM to ensure consistency with all applicable regulations. Applicable review procedures are set forth at 301 Code of Massachusetts Regulations (CMR) 21.07 (see 301 CMR 21.04(2)).

It should be noted that Mayflower Wind will undertake separate EFSB petitions, MEPA filings, and State permits for the Falmouth and Brayton Point points of interconnections because there are:

- Two separate sets of transmission facilities to be interconnected to the regionally administered transmission system at two separate points
- Geographically distinct and separate components:
  - Export cable corridors in MA waters,
  - Landfall sites,
  - Onshore routes,
  - Substation/converter station locations,
  - Points of interconnection, and
  - Stakeholders (i.e., communities, abutters)
- Separate interconnection processes with different timelines in the ISO New England interconnection queue

1.4 Document Organization

The balance of this document is organized as follows: Section 2.0 provides supporting Project information including timeline (Section 2.1), Project overview (Section 2.2), specific design and siting details (Section 2.3), alternatives considered (Section 2.4), affected environment (Section 2.5), potential impacts (Section 2.6) and avoidance, minimization and mitigation measures (Section 2.7). Consistency of the Project with the enforceable Massachusetts Coastal Zone Program Policies is addressed in Section 3.0, and the Project Consistency Certification is provided in Section 4.0. Figures referenced throughout the text are contained in Attachment 1.

[8] Massachusetts Office of Coastal Zone Management Policy Guide – October 2011, pages 11-12.

Table 1-1. Necessary Data and Information

Project Information	Reference Section or Description
The name and location of the project	Mayflower Wind Energy LLC; OCS Lease Area OCS-A 0521
A narrative summary of the project in clear, nontechnical language	CZMA Consistency Certification Section 2.0 – Project Information COP Section 1.1 – Project Overview
The EEA Massachusetts Environmental Policy Act (MEPA) number, if applicable	Environmental Notification Form (ENF) (Falmouth POI)), EEA# 16507 – filed November 17, 2021 Environmental Impact Report (EIR) (Falmouth POI)), EEA# 16507 - to be filed Q2 2022 ENF (Brayton Point POI) to be filed Q2 2022; separate EEA number to be assigned Draft EIR (Brayton Point POI) to be filed Q3 2022 Final EIR (Brayton Point POI) to be filed Q1 2023
A detailed description and analysis of the nature, location, type, size, proposed use, and anticipated lifespan of the project illustrated with map(s) and site plan(s)	CZMA Consistency Certification Section 2.0 – Project Description (summary) COP Section 3.0 – Description of Proposed Activities
A detailed description and analysis of the project objectives and anticipated benefits	CZMA Consistency Certification Section 1.1 – Project Objectives COP Section 1.3 – Purpose and Need
A detailed description of the physical, biological, chemical, economic, and social conditions of the project site, surroundings, and affected environment, including resource area delineations, illustrated with map(s) and site plan(s) depicting both existing and proposed conditions	COP Section 4.0 – Site Geology and Environmental Conditions COP Section 5.0 – Physical Resources COP Section 6.0 – Biological Resources COP Section 7.0 – Cultural Resources COP Section 10.0 – Socioeconomic Resources
A timetable, approximate cost, and the methods and timing of construction and operation of the project (including types of equipment, temporary impacts associated with construction, monitoring and maintenance plans, proposed reporting schedule)	COP Section 3.2 – Proposed Project Schedule COP Section 3.3 – Project Components and Project Stages COP Section 3.4 – Summary of Impact-Producing Factors

Project Information	Reference Section or Description
A detailed description and assessment of the negative and positive potential coastal effects of the project including direct and indirect resource and use impacts from all aspects of the project, short-term and long-term impacts for all phases of the project (e.g., acquisition, development, construction, and operation), and cumulative impacts of the project	CZMA Consistency Certification Section 3.0– Massachusetts Coastal Program Policies COP Section 5.1 Air Quality COP Section 5.2 Water Quality COP Section 6.1 Coastal and Marine Birds COP Section 6.2 Bats COP Section 6.3 Terrestrial Vegetation and Wildlife COP Section 6.4 Wetlands and Waterbodies COP Section 6.5 Coastal Habitats COP Section 6.6 Benthic and Shellfish COP Section 6.7 Finfish and Invertebrates COP Section 6.8 Marine Mammals COP Section 6.9 Sea Turtles COP Section 7.1 Marine Archaeology COP Section 7.2 Terrestrial Archaeology COP Section 7.3 Above-Ground Historic Properties
A detailed description of alternatives considered, analysis of the impacts on the resource areas, and explanation and justification as to why the preferred alternative was selected	CZMA Consistency Certification Section 2.4- Alternatives Considered COP Section 2.0 – Project Siting and Design Development
A description detailing any changes made to the project during MEPA review, if applicable	ENF (Falmouth POI), EEA# 16507 – filed November 17, 2021 Draft EIR (Falmouth POI), EEA# 16507, to be filed Q2 2022 Final EIR (Falmouth POI), EEA# 16507, to be filed Q4 2022 ENF (Brayton Point POI) to be filed Q2 2022; separate EEA number to be assigned Draft EIR (Brayton Point POI) to be filed Q3 2022 Final EIR (Brayton Point POI) to be filed Q1 2023

Project Information	Reference Section or Description
A description of measures taken to avoid, minimize, and mitigate adverse coastal effects and a description of how the project meets performance standards under the applicable regulations.	CZMA Consistency Certification Section 3.0– Massachusetts Coastal Program Policies Avoidance, Minimization and Mitigation Measures in the following COP Sections: COP Section 5.1 Air Quality COP Section 5.2 Water Quality COP Section 6.1 Coastal and Marine Birds COP Section 6.2 Bats COP Section 6.3 Terrestrial Vegetation and Wildlife COP Section 6.4 Wetlands and Waterbodies COP Section 6.5 Coastal Habitats COP Section 6.6 Benthic and Shellfish COP Section 6.7 Finfish and Invertebrates COP Section 6.8 Marine Mammals COP Section 6.9 Sea Turtles COP Section 7.1 Marine Archaeology COP Section 7.2 Terrestrial Archaeology COP Section 7.3 Above-Ground Historic Properties For a summary: COP Section 16.0 – Summary of Avoidance, Minimization, and Mitigation Measures
Permit applications	**Federal** COP filed February 15, 2021, and amended on August 30, 2021 and October 28, 2021; BOEM Notice of Intent to Prepare an EIS published on November 1, 2021 **State** MA Energy Facilities Siting Board (EFSB) and Department of Public Utilities (DPU) Section 69J, Section 72, and zoning petitions (Falmouth POI) filed November 17, 2021 MA EFSB and DPU Section 69J, Section 72, and zoning petitions (Brayton Point POI) to be filed Q2 2022
Final Environmental Impact Report (FEIR)	Anticipated Q4 2022 for FEIR (Falmouth POI) Anticipated Q1 2023 for FEIR (Brayton Point POI)

2.0 Project Information

This section summarizes relevant Project information needed to evaluate consistency with the Massachusetts OMP. Information presented herein includes a high level Project timeline, an overview Project description, table of specific Project siting and design details, and a summary of alternatives considered. Detailed information about the Project and affected environment is included in the Mayflower Wind COP (Volumes I and II as well as Appendices to the COP). Also addressed in this section are the Potential Project Impacts (Section 2.6) and Avoidance, Minimization and Mitigation Measures (Section 2.7).

Portions of the Project addressed in this Certification as described in Section 2.2, include:

- Project activities within the Massachusetts Coastal Zone (including portions of the Falmouth and Brayton Point export cable corridors (ECCs), the export cable sea-to-shore horizontal directional drilling (HDD) transitions, onshore Project elements in Falmouth and Somerset, Massachusetts); and
- Portions of the Project within Federal Waters (including portions of the Falmouth and Brayton Point ECCs and the Lease Area) which may have reasonably foreseeable coastal effects on any land or water use or natural resource of the Massachusetts regulated coastal resources.

2.1 Project Timeline

The Project is currently in the planning and engineering design stages. For more details on the Project timeline please see the COP Section 3.2 – Proposed Project Schedule. The Project will be operational for approximately 30 years, after which time the Project will be decommissioned as per requirements in 30 CFR 585.906-910. Over the 30-year lifespan of the Project, there will be ongoing remote monitoring and maintenance of the offshore and onshore Project facilities.

2.2 Project Overview

The Mayflower Wind Project includes a Lease Area located south of Martha's Vineyard and Nantucket (Figure 1). Wind turbine generators (WTGs) constructed within the Lease Area will deliver power via inter-array cables to the offshore substation platform(s) (OSPs). The WTG/OSP positions have been established based on a 1 x 1 nautical mile (nm) (1.9 x 1.9 kilometer [km]) grid oriented along the cardinal directions to maintain a uniform spacing of WTGs across all the lease areas within the Massachusetts/Rhode Island Wind Energy Area. Submarine offshore export cable(s) will be installed within offshore ECCs to carry the electricity from the OSPs within the Lease Area in federal waters to the onshore transmission systems via two different ECCs. One ECC will make landfall in Falmouth, Massachusetts and the other will make landfall at Brayton Point, in Somerset, Massachusetts. The proposed Falmouth ECC will extend from the Lease Area and enter Massachusetts state waters south of Nantucket Island and Martha's Vineyard, and pass through Muskeget Channel into Nantucket Sound, remaining in Massachusetts state waters. The offshore export cables will make landfall via HDD. Potential landing location(s) for the Falmouth ECC include Worcester Avenue (preferred), Shore Street, or Central Park in Falmouth, Massachusetts. The proposed Brayton Point ECC will run north and west from the Lease Area through Rhode Island Sound up the Sakonnet River and across land at Aquidneck Island to Mount Hope Bay, and then north into Massachusetts state waters to Brayton Point. Landfall will be made via HDD at one of two potential landing locations in Somerset on the western side of Brayton Point from the Lee River (preferred) or the eastern side from the Taunton River (alternate).

In Falmouth, the underground onshore export cables will extend from the selected landfall location(s) to an onshore substation and will be installed within existing paved roadways and/or shoulder and within other municipally-owned land (Figure 5). The new onshore substation will transform the voltage to 345 kilovolts (kV) to enable connection to either an overhead transmission line (preferred) or an underground transmission route (alternate). The selected landfall location will determine the route of the underground onshore export cables between the landfall and the new onshore substation. The planned Falmouth POI to the regional transmission system will be near the existing interconnecting transmission owner substation (Falmouth Tap),

as determined based on ISO-NE's Cape Cod cluster interconnection process.[9] The preliminary Cluster Study 1 results indicate that the interconnecting transmission owner will be responsible for installing a 345 kV transmission loop from Bourne to Falmouth to West Barnstable and a new 345 kV substation. Mayflower Wind also anticipates that a transmission line between a new Mayflower Wind substation and the Falmouth POI will be sited, designed, and permitted by the interconnecting transmission owner within the existing utility right-of-way (ROW). The alternate underground transmission route would be constructed within local roadway and/or shoulder extending from the onshore substation to the POI at or near Falmouth Tap (Figure 5).

At Brayton Point (Figure 6), the onshore underground export cables will traverse the site from the landing to the location of a new HVDC converter station (converter station). Underground transmission cables will be constructed from the converter station to the Brayton Point POI, the adjacent existing National Grid substation.

The Falmouth Onshore Project Area includes the landing(s), underground onshore export cables, onshore substation, alternate underground transmission route, and POI at the Falmouth Tap switching station. The Brayton Point Onshore Project Area includes the onshore export cable route options over Aquidneck Island, landings at Aquidneck Island and Brayton Point, the underground onshore export cables, HVDC converter station, underground transmission route, and the POI at the National Grid substation. See Figure 5 and Figure 6 for the Falmouth Onshore Project Area and the Brayton Point Onshore Project Area respectively. The Offshore Project Area includes the Lease Area, Falmouth and Brayton Point ECCs, and the HDD sea-to-shore transitions to the landfall locations (Figure 2, Figure 3, and Figure 4).

2.3 Specific Project Details

Each primary Project component is briefly described below in Table 2-1. Additional details may be found in the COP Section 3.0 – Description of Proposed Activities.

[9] On October 21, 2020, ISO-NE initiated the First Cape Cod Resource Integration Study (Cluster Study 1). A final report, First Cape Cod Resource Integration Study, was issued by ISO-NE on July 30, 2021. Redacted Non-CEII Version Available at URL: https://www.iso-ne.com/static-assets/documents/2021/07/cape-cod-resource-integration-study-report-non-ceii-final.pdf

Table 2-1. Key Project Details

Project Attribute	Description
Lease Area Size	127,388 acres (51,552 hectares [ha])
Layout and Project Size	Up to 149 WTG/OSP positions Up to 147 WTGs Up to 5 OSPs Combined number of OSPs and WTGs not to exceed 149
WTGs	Rotor diameter: 721.7 – 918.6 ft (220.0 – 280.0 m) Blade length of 351.0 – 452.8 ft (107.0 – 138.0 m) Hub height above Mean Lower Low Water: 418.7 – 605.1 ft (127.6 – 184.4 m)
OSP(s)	Top of topside height above Mean Lower Low Water: 160.8 – 344.5 ft (49.0 – 105.0 m)
WTG/OSP Substructures	Monopile, piled jacket, suction-bucket jacket, and/or gravity-based structure Seabed penetration: 0 – 295.3 ft (0 – 90.0 m) Scour protection for up to all positions
Inter-Array Cables	Nominal inter-array cable voltage: 60 kV to 72.5 kV Length of inter-array cables beneath seafloor: 124.3 – 497.1 miles (mi) (200 – 800 km) Target burial depth (below level seabed): 3.2 – 8.2 ft (1 – 2.5 m)
Landfall Locations	Falmouth, MA Three locations under consideration: Worcester Avenue (preferred), Central Park, and Shore Street Brayton Point, Somerset, MA Two locations under consideration: the western (preferred) and eastern (alternate) shorelines of Brayton Point
Offshore Export Cables	Falmouth ECC Anticipated Cable Type: high voltage alternating current (HVAC) Number of export cables: up to 5 Nominal export cable voltage: up to 345 kV Corridor width: up to 3,208.8 ft (1,000 m) (may be locally narrower or wider in sensitive or constrained areas, including landfalls) Length per export cable beneath seabed: 51.6 – 87.0 mi (83 – 140 km) Cable crossings: up to 9 Target burial depth (below level seabed): 3.2 – 13.1 ft (1 – 4 m) Brayton Point ECC Cable Type: HVDC Number of export cables: up to 6 Up to 4 export power cables and up to 2 communication cables (to be installed in 1-2 cable bundles, where practicable) Nominal export cable voltage: ±320 kV Corridor width: up to 2,300 ft (700 m) (may be locally narrower or wider in sensitive or constrained areas, including landfalls) Length per export cable beneath seabed: 97 – 124 mi (156 – 200 km) Cable/pipeline crossings: up to 16 (total) Target burial depth (below level seabed): 3.2 – 13.1 ft (1 – 4 m)

Project Attribute	Description
Onshore Export Cables	Falmouth, MA HVAC (anticipated); Nominal underground onshore export cable voltage: up to 345 kV Up to 12 onshore export power cables and up to five communications cables Length: Up to 6.4 mi (10.3 km) Brayton Point, Somerset, MA HVDC; Nominal underground onshore export cable voltage: ±320 kV Up to 4 export power cables and up to 2 communications cables Length: Up to 3,940 ft (1,200 m) on Brayton Point
Onshore Substation/HVDC Converter Station	Falmouth, MA Type: Transform to 345 kV; Air-insulated substation or gas-insulated substation onshore substation Location: Two locations under consideration: Lawrence Lynch (preferred), and Cape Cod Aggregates (alternate) Area: Up to 26 acres (10.5 ha) Brayton Point, Somerset, MA Type: HVDC Converter Station Location: On the Brayton Point property area under consideration Area: Up to 7.5 acres (3.0 ha)
Transmission from Onshore Substation/HVDC Converter Station to the POI	Falmouth, MA New, 345 kV transmission line along existing utility ROW (preferred) (to be designed, permitted, and built by utility operator) Up to 5.1 mi (8.2 km) in length New, 345 kV underground transmission route within roadway layout (alternate) Up to 2.1 mi (3.4 km) in length Brayton Point, Somerset, MA New 345 kV underground transmission route to Brayton Point POI HVAC; nominal underground transmission cable voltage: up to 345 kV Up to 0.5 mi (0.8 km) on Brayton Point property
POI	Falmouth, MA Falmouth Tap (new or upgraded switching station to be designed, permitted, and built by interconnecting transmission owner) Brayton Point, Somerset, MA Existing National Grid substation

2.4 Alternatives Considered

Mayflower Wind has considered numerous alternatives for various Project elements associated with the offshore and onshore Project development. COP Section 2.0 – Project Siting and Design Development provides a discussion of alternatives considered. Alternatives relevant to the CZMA consistency determination are summarized below.

2.4.1 Lease Area Facilities

The Lease Area will include WTGs, OSPs, WTG/OSP substructures, and inter-array cables. As discussed below, considerations related to the Lease Area's depth, sea floor conditions, protected areas, and applicable

regulations, provide clarity to site-specific technologies and processes Mayflower Wind can reasonably utilize within the Project Area. Mayflower Wind also considered commercial and technical availability in evaluating Project components.

2.4.1.1 Wind Turbine Generators

Mayflower Wind is selecting WTGs based on available technology and feasibility for the proposed Project. The WTGs initially considered varied based on the size of the rotor diameter. There are tradeoffs for selecting WTG models; most notably, WTGs with larger rotor diameters will yield more power, but involve larger foundations to accommodate their size. Advancing WTG technology will lead to more efficient WTGs (with larger rotor diameters) to be available on the market prior to construction. As WTG technology advances, Mayflower Wind will select larger WTGs, such as those with rotor diameters up to 919 ft (280 m).

2.4.1.2 Site Layout

Site layout for an offshore wind project depends on a variety of factors, including sea floor conditions and navigation safety. Obstructions, sea floor slope, shipwrecks, shoal features, and seabed conditions will impact the placement of WTGs, OSPs, inter-array cables, and offshore export cables for the Project layout. Layouts must also include multiple options because some pre-planned WTG or OSP locations may be deemed unusable as additional site characterization information is collected.

Mayflower Wind worked with the United States Coast Guard (USCG), BOEM, the other MA/RI WEA leaseholders, and other regulators and stakeholders to develop an aligned 1 nm x 1 nm (1.9 km x 1.9 km) grid for WTG/OSPs layouts across all MA/RI WEA leases. This collaborative layout provides both uniform spacing and 1 nm wide corridors in both the north-south and east-west orientations (Equinor Wind US, Eversource Energy, Mayflower Wind, Orsted North America, and Vineyard Wind LLC, 2019) across all of the MA/RI WEA lease areas. Figure 1 illustrates the grid spacing for the Mayflower Wind Lease Area consistent with the above described spacing.

Additional transit lanes beyond the ample sea space provided in the predictable and measured 1 nm x 1 nm (1.9 km x 1.9 km) grid would unquestionably hinder, and in cases like Mayflower Wind, decimate the delivery of contracted electricity supply to the market and put New England's energy security at risk.

Less clean energy would be produced in the region if numerous, wide, transit lanes were established through the lease areas. Notably, the capacity within the MA/RI WEA would be reduced by approximately 3,300 MW, which is 500 MW less than current state demand for offshore wind from the MA/RI WEA. Through the Vineyard Wind NEPA process, BOEM acknowledged that the Responsible Offshore Development Alliance (RODA) transit lane alternative (Alternative F), "could further erode project economics and viability," (Mayflower Wind, 2020)[10]. If the RODA transit lanes were imposed, Mayflower Wind would specifically lose 38 WTG/OSP positions under the 2 nm wide transit lane layout and 68 WTG/OSP positions under the 4-nm-wide transit lane layout.

Mayflower Wind also considered optimized site layout plans. One layout would place OSP(s) in aligned rows or columns, but not on the 1 nm x 1 nm (1.9 km x 1.9 km) grid. Another considered optimized site layout was a grid with less than a 1 nm x 1 nm (1.9 km x 1.9 km) spacing between structures. These layouts were not selected for two primary reasons: (1) the USCG concluded that a standard and uniform grid layout maximizes safe navigation, and (2) collaboration among MA/RI WEA leaseholders concerning uniform layout and consistent lighting and marking of structures is paramount to assuring safe navigation.

2.4.1.3 Substructures

Selecting the appropriate substructures for a project requires careful consideration of conditions present at the site and the construction feasibility of considered designs.

[10] Mayflower Wind. (2020). RE: Vineyard Wind 1 COP Supplement to the Draft EIS Docket No. BOEM-2020-0005. https://www.regulations.gov/document?D=BOEM-2020-0005-13019

Floating foundation systems inherently have significantly different considerations when compared to the fixed bottom structures. Since the majority of the Lease Area resides in waters shallower than 196.8 ft (60.0 m), fixed bottom has been identified as the preferred solution. Mayflower Wind has selected four viable substructure options to potentially be used in the proposed Project. These include:

- Monopiles
- Piled jackets
- Suction-bucket jackets, and
- Gravity-based substructures

The final selection will be based on water depths and geotechnical conditions.

2.4.1.4 Offshore Substation Platforms

The OSP is where Project-generated power is transformed from the inter-array cable voltage to the offshore export cable voltage. OSPs require a robust design and can include multiple decks for equipment. Mayflower Wind originally considered a large range of platform sizes, number of OSPs, pile depths, and scour protection options. Initial designs were filtered down based on conservative assumptions for environmental impacts and front-end engineering to rule out infeasible, unsafe, or overly impactful options.

The proposed Project will include the following designs:

- Modular OSP,
- Integrated OSP, and
- DC Converter OSP

2.4.1.5 Inter-Array Cables

Submarine inter-array cables will connect the WTGs to the OSPs. Mayflower Wind will consider multiple inter-array cable layouts within the Lease Area and attempt to optimize the proposed Project by minimizing cable lengths and maximizing efficiency and reliability. Thus, only indicative layouts have been selected at this time.

Considerations for inter-array cables may include offshore physical hazards and economic or recreational use areas. Physical hazards may include shipwrecks, unexploded ordnance (UXO), other existing cables, and sea floor and subsurface obstructions. Economic or recreational uses may include commercial or recreational fishing, recreational boating and tourism, and anchoring.

2.4.2 Offshore Export Cable Routing

The proposed Project considered five export cable corridors from the Lease Area to Falmouth, Massachusetts, and three export cable corridors from the Lease Area to Brayton Point.

Numerous technical and environmental considerations and constraints have factored into determining the location of the ECCs, including:

- Water depths greater than 20 ft (6.1 m) are most suitable for accommodating the cable laying vessels that are likely to be utilized for the Project, and are preferable along the majority of the offshore corridors;
- Minimizing cable length is critical for reducing transmission losses and avoiding higher costs;
- The corridors should consider the presence of other existing offshore cables and/or pipelines, or intended location of planned future cables and/or pipelines, in order to mitigate (if possible) or carefully manage the risks associated with installing and maintaining cables in proximity to other infrastructure;

- The routes should be perpendicular, or nearly perpendicular, to any large seabed slopes, and likewise across any existing offshore cables and/or pipelines (or planned future offshore cables and/or pipelines);
- The corridors should avoid or minimize impacts to SSU natural resource areas, including North Atlantic Right Whale Habitat, hard/complex bottom, and eelgrass;
- The corridors should avoid mobile seabeds which may pose a threat of altering the cable burial depth which could risk exposing the cables to potential harm from an insufficient cable burial depth, without specific mitigation (i.e., burial to a depth to account for the mobility of the overlying sediments to avoid uncovering); and
- Anchorage areas and areas with mapped shipwrecks and boulders are to be avoided or minimized.

2.4.2.1 Falmouth Export Cable Routing

Geologic and sea floor conditions existing within the Offshore Project Area influenced the siting and selection of the Falmouth ECC. Hard or complex seabed conditions, steep slopes, ledges, extensive shallow water areas, as well as mobile seabeds will be avoided to the extent practicable in the selection of the preferred corridor and installation locations within the corridor. The results from the 2020 geophysical and geotechnical (G&G) survey as well as results of a benthic survey program were used to evaluate the offshore route segments associated with the Falmouth POI. In 2021, additional G&G and benthic surveys were conducted along the selected, western, ECC. In addition, available state mapping data were considered in the evaluation of the ECCs including: Massachusetts OMP Areas of Concern, Areas to Avoid, and Preliminary Transmission Cable Routes (Figure 7 and Figure 8); Sensitive Uses and Hard and Complex Seabed (Figure 10); Shellfish Suitability (Figure 12); and Shellfish Suitability and Eelgrass near the sea-to-shore transition (Figure 14) and regulated wetland resources for alternate landing locations (Figure 15, Figure 16, and Figure 17).

Mayflower Wind intends to maintain an ECC width between approximately 2,625 ft (800.0 m) and 3,281 ft (1,000.0 m) for the Falmouth ECC to allow for maneuverability during installation and maintenance. The ECC may be locally narrower or wider to accommodate sensitive locations, to provide sufficient area for anchoring, and/or at anticipated cable crossing locations.

Numerous ECCs were considered in Project development, including five for the Falmouth POI. Two of the five ECC options were eliminated; the first, which closely paralleled the western option, was de-selected because of its similarity to selected corridors, and the second, which routed much farther to the east, was de-selected because of a high level of technical risk because of challenging seabed conditions (i.e., high sediment mobility, very shallow bathymetry, and high seabed slopes), especially near Muskeget Island and Nantucket. Three ECC options were retained for further assessment, including eastern, western, and central export cable corridor options through Muskeget Channel are described below and illustrated in Figure 3. All three of the retained ECC options are co-located for a large portion of the total ECC length, differing only in route through Muskeget Channel.

Based on the analysis of the Falmouth ECC options, the western option was the selected route corridor for reaching the potential landfall location(s) because it will minimize technical risks and minimizes cumulative impacts to sensitive/protected habitats of the Mayflower Wind and Vineyard Wind projects. Specific advantages of the western ECC include:

- Fewer areas of high risk related to extremely shallow water depths than the other options.
- Greater length of ECC proximate to or co-located with the Vineyard Wind cables, which may reduce the cumulative impact area of both projects.
- Shortest of the three options assessed.

Western Offshore Export Cable Corridor

The western option diverges from the original common ECC from the Lease Area approximately 8 km south of the entrance to Muskeget Channel within federal waters. This ECC is located the farthest westward within Muskeget Channel, closest to Martha's Vineyard. The western ECC rejoins the common ECC north of the exit from Muskeget Channel. A portion of the western option is partially co-located in parallel with a planned

export cable corridor for Vineyard Wind OCS-A-0501 and New England Wind OCS-A 0534 Lease Area developments, which would provide the benefit of reducing the cumulative impact area of both projects. The western ECC is expected to cross the Vineyard Wind project export cable corridor south of Muskeget Channel. Up to six separate cables may be crossed depending on installation timing and as-installed locations of each respective project.

The western option through Muskeget Channel has been selected as the preferred offshore ECC route.

Central Offshore Export Cable Corridor

The central and eastern ECC options share a common ECC entering Muskeget Channel, and rejoin prior to exiting the Channel. The central option is located in between the eastern and western options within Muskeget channel, east of the western ECC and Martha's Vineyard. The central ECC enters Muskeget Channel close to Nantucket, and then turns westward before turning north passing through the central portion of Muskeget Channel. The central option reenters federal waters, after passing through Muskeget Channel within Nantucket Sound.

A small portion of the central ECC option is partially co-located in parallel with a planned export cable corridor for Vineyard Wind OCS-A-0501 and New England Wind OCS-A 0534 Lease Area developments. The common central-eastern ECC is expected to cross the Vineyard Wind project export cable corridor north of Muskeget Channel. Up to six separate cables may be crossed depending on installation timing and as-installed locations of each respective project.

The central corridor was de-selected in order to avoid confliction with other proposed offshore wind projects and because of challenging seabed conditions within Muskeget Channel that were identified during reconnaissance and site characterization surveys completed in 2020. The resulting level of technical risk was too high to carry these corridors through for the PDE.

Eastern Offshore Export Cable Corridor

The eastern ECC option includes a short segment located to the east of the central option within Muskeget Channel, farther eastward from Martha's Vineyard and closer to Nantucket. The eastern option continues north from the common ECC it shares with central option through Muskeget Channel, at a point where the central route diverges to the west before a turn northward through the Muskeget Channel. This deviation from the central route results in a slightly shorter total ECC length compared to the central option.

The eastern option generally avoids overlap with a planned ECC for Vineyard Wind OCS-A-0501 and New England Wind OCS-A 0534 Lease Area developments, except at the necessary cable crossing locations. The common central-eastern ECC is expected to cross the Vineyard Wind project export cable corridor north of Muskeget Channel. Up to six separate cables may be crossed, depending on installation timing and as-installed locations of each respective project.

The eastern corridor was de-selected in order to avoid confliction with other proposed offshore wind projects and because of challenging seabed conditions within Muskeget Channel that were identified during reconnaissance and site characterization surveys completed in 2020. The resulting level of technical risk was too high to carry these corridors through for the PDE.

2.4.2.2 Brayton Point Export Cable Routing

Geologic and seafloor conditions existing within the Offshore Project Area greatly influenced the export cable corridors from the OSPs within the Lease Area to the landfall location(s). Mayflower Wind will avoid hard bottom and complex steep slopes, ledges, extensive shallow water areas, as well as mobile seabeds to the extent practicable. The G&G, benthic, and marine archaeological surveys completed in 2021 will further inform cable routing within the Brayton Point ECC. In addition, available state mapping data were considered in the evaluation of the ECC.

Figure 8 illustrates the Massachusetts OMP Areas of Concern and Areas to Avoid in the vicinity of the Brayton Point ECC within Massachusetts waters and a small, mapped area within federal waters. The Brayton Point ECC, including both preferred and alternate landing approaches, is located within mapped Areas to Avoid within the Massachusetts Coastal Zone (Figure 9). The mapped Areas to Avoid represent areas with rock

substrate and/or shallow water depth (i.e., less than 16 ft [4.9 m]) which are prevalent within Mount Hope Bay and near the mouths of the Lee and Taunton Rivers. For interconnection at the Brayton Point POI, complete avoidance of these mapped areas is not possible.

The OMP mapping does not provide mapped hard or complex seabed conditions within this area of the Massachusetts Coastal Zone, which fall outside of the OMP boundary. However, mapping of surface sediments does show the presence of rock and gravel substrates that could contain hard or complex seabed conditions (Figure 11). Both Brayton Point ECC landing approaches traverse mapped Shellfish Suitability areas (Figure 13); however, HDD installation may avoid or minimize impact to these areas. As noted above, no seagrass beds have been mapped within the Brayton Point ECC. Figure 18 illustrates Massachusetts regulated wetland resources in the vicinity of the Brayton Point alternate landings. Impacts to regulated wetlands will be avoided with HDD installation for the sea-to-shore transition.

Three alternate ECCs were considered for the Brayton Point POI as described in COP Section 2.1.6 and illustrated in COP Figure 2-2. However, all of the alternate routes use the same corridor within the Massachusetts Coastal Zone. Therefore, these alternates are not addressed further for this CZM Certification.

2.4.3 Alternate Landfall Location(s)

Numerous landfall locations have been considered for the Mayflower Wind project.

2.4.3.1 Falmouth Landfall Location(s)

There are three landfall points being considered in the town of Falmouth (Figure 5). These landfall locations include:

1. Shore Street at its intersection with Surf Drive (Figure 15);
2. Central Park north of Grand Street (Figure 16); and
3. Worcester Avenue near its intersection with Grand Avenue (in Worcester Park) (Figure 17).

The estimated locations of sensitive coastal habitats in the nearshore areas of the three Falmouth landfall locations under consideration are shown in Figure 15 through Figure 17. The Worcester Avenue landfall location in Falmouth, MA, near the intersection of Worcester Avenue with Grand Avenue (in Worcester Park), is the preferred landfall as the area is protected by a short seawall, a broad beach, and Grand Avenue. The main appeal of this location is the municipally-owned Worcester Park that runs between the two lanes of Worcester Avenue and is surrounded by businesses and residences on either side. This area has only a slight elevation making it a prime candidate for an HDD landfall as well as being unlikely to be impacted by a typical storm event. Stakeholder engagement will be critical at this location as the area is home to a popular road race as well as hotels and inns. There are no known existing submarine cables that make landfall at Worcester Avenue and this landfall would avoid the need to cross any of the existing submarine cables between Martha's Vineyard and Falmouth. The landscaped area in Worcester Park would require re-landscaping after installation of the HDDs, transition joint bays (TJBs), and first set of splice vaults located at the northern end of the route in the park. The remaining cable installation within the park will have a smaller limit of disturbance and will not require intensive repair and re-landscaping following the installation of the onshore export cables (Figure 17).

Selection of the preferred landfall location, as well as the HDD landfall installation method, were important considerations in preventing impacts to coastal areas. All locations were evaluated for their potential effects on coastal and nearshore environments including coastal, beaches, and coastal dunes (Figure 15, Figure 16, and Figure 17). Using an HDD landfall method will prevent or avoid excessive impacts to nearshore resources such as submerged aquatic vegetation (SAV) and eelgrass beds that would be otherwise impacted with an open trench installation (Figure 14). This method will also reduce impacts to public access to coastal areas as the installation will take place beneath the coastal beach and intertidal area at Falmouth Heights Beach.

Another factor considered in the selection of the preferred landfall location is its effect on the onshore route. The landfall point will be the beginning of the onshore transmission route in Falmouth and the preferred

landfall location at the intersection of Worcester Avenue and Grand Avenue will ensure that the cable route will be able to be located within and beneath existing roadways to the substation facility. This will limit disturbances to natural areas along the Project onshore route.

2.4.3.2 Brayton Point Landfall Location(s)

Alternate landfall locations for evaluation are first identified based on the intended POI and seek to minimize the distance from the offshore OSPs to the POI. For the Brayton Point POI, Mayflower Wind has identified two alternate landfall points in the town of Somerset at Brayton Point (Figure 6). These landfall locations include:

1. Western shoreline of Brayton Point via the Lee River (preferred)
2. Eastern shoreline of Brayton Point via the Taunton River (alternate)

Selection of the preferred landfall location, as well as the HDD landfall installation method, were important considerations in preventing impacts to coastal areas. All locations were evaluated for their potential effects on coastal and nearshore environments including coastal, beaches, coastal dunes, eelgrass, and other submerged aquatic vegetation (SAV) (Figure 18). Both landfall locations avoid impacts to coastal resources. Coastal beach and bluffs are located adjacent to the preferred western landfall, and a coastal marsh and barrier beach system is located north and east of the alternate landing (Figure 18). No SAV or eelgrass beds have been mapped by MassDEP in the landfall areas at Brayton Point (see COP Appendix K, Seagrass and Macroalgae Characterization Report). Mayflower Wind has elected to use HDD for the sea-to-shore transition at Brayton Point to prevent impacts to nearshore resources that would be otherwise impacted with an open trench installation. As is best practice prior to any HDD operation, Mayflower Wind plans to obtain detailed site-specific geotechnical data at the landfall location(s) and near the HDD trajectory as part of the detailed design and engineering process.

2.4.4 Potential Onshore Substation/HVDC Converter Station Locations

Several potential onshore substation/converter station locations have been evaluated.

2.4.4.1 Falmouth Potential Onshore Substation Locations

The two locations being examined are in close proximity to the POI (Falmouth Tap) determined preliminarily by ISO-NE. The final location of the onshore substation will determine the ultimate lengths of the underground onshore export cables and alternate underground transmission route. The current preferred site for the onshore substation is the Lawrence Lynch site. This site consists predominantly of disturbed land (Figure 5). Cape Cod Aggregates is also largely disturbed bare land with low vegetations along the margins (Figure 5). For more information on potential substation locations, please see COP Section 3.3 – Project Components and Project Stages and COP Section 12.0 Zoning and Land Use (see Figures 12-13 and 12-14).

2.4.4.2 Brayton Point Onshore HVDC Converter Station Location

The converter station will be located within the Brayton Point property. As shown in Figure 6, Mayflower Wind expects to locate the converter station within the northern portion of the Brayton Point site, in an area extending from the location of the former cooling towers to the northern property boundary. For more information, please see COP Section 3.3 – Project Components and Project Stages.

2.4.5 Onshore Export Cable Routing

Mayflower Wind evaluated a number of onshore export cable routes between the landing location options and the preferred and alternate substation locations. The ultimate landfall selection will determine the route of the underground onshore export cables between the landfall and the new onshore substation.

2.4.5.1 Falmouth Onshore Export Cable Routing

The preferred and several alternate routes under consideration are shown in Figure 5. Underground onshore export cables will primarily be installed within roadways and/or the roadway layout. The exception to this is a 0.4 mi (0.6 km) segment of the underground route that would be constructed within a grassy media strip known as Worcester Park, prior to joining Worcester Court. Mayflower Wind expects that tree clearing can be largely avoided, however, there may be a few tree removals required to accommodate this installation. The disturbed park areas would be restored after construction.

2.4.6 Transmission Alternatives

Potential transmission alternatives have been assessed for the Mayflower Wind Project.

2.4.6.1 Falmouth Transmission Alternatives

The preferred interconnection transmission, an overhead transmission circuit line would be designed, permitted and constructed within the existing utility ROW by the transmission system owner, Eversource, and will extend approximately 5 mi (8 km) from the preferred substation location (Lawrence Lynch) to the Falmouth Tap POI.

The alternate underground transmission route would be built by Mayflower Wind within the paved roadway or shoulder of several local Falmouth roads (Thomas B Landers Road, Geggatt Road and Turner Road) (Figure 5). The cables would be installed within duct banks in a covered trench starting at the substation and terminating at the POI (Falmouth Tap).

2.4.6.2 Brayton Point Transmission Alternatives

A new 345-kV underground transmission line will connect the converter station to the Brayton Point POI, both located within the Brayton Point property. Because both are located within the same property, other transmission alternatives were not considered.

2.5 Affected Environment

2.5.1 Surveys and Desktop Assessments

Mayflower Wind has conducted and is conducting terrestrial and marine surveys as well as desktop studies to determine the potentially affected resources within the Offshore and Onshore Project Areas.

Marine surveys have included benthic sea floor habitat field studies along the offshore export cable corridors and Lease Area and an eelgrass survey at the landfall locations. In addition to field surveys, a number of desktop studies (shellfish, Essential Fish Habitat) have also been completed to further characterize sensitive resources in the Offshore Project Area. These surveys and studies were used to evaluate and select a preferred Falmouth export cable corridor which is feasible and minimizes impacts to sensitive resources.

Terrestrial surveys will include wetland delineations for both federal- and state-regulated wetlands, waterways, and waterbodies. Resource area delineations will also include coastal wetland resource areas including State Wetlands Protection Act-regulated Land Under the Ocean, Coastal Beach, Coastal Dune, Coastal Bank, and Land Subject to Coastal Storm Flowage. Inland resource area delineations will include areas of Bank, Bordering Vegetated Wetlands, Land Under Waterbodies and Waterways, Land Subject to Flooding, Riverfront Areas, and Vernal Pools. Mayflower Wind completed a desktop analysis of the onshore Project activities on Terrestrial Vegetation and Wildlife, including wetlands (see COP Appendix J, Terrestrial Vegetation and Wildlife Assessment).

Terrestrial areas affected by the Project primarily consist of previously disturbed and/or developed areas within the coastal zone. An effort was made by Mayflower Wind to concentrate on the installation of the underground onshore export cables or alternate underground transmission route within pre-disturbed areas, including existing roadways.

2.5.2 Characterization of Affected Environment

The Mayflower Wind COP provides a detailed characterization of the affected onshore and offshore environment. The following provides a cross reference to relevant COP sections where such information can be found.

- COP Section 5.1.1 – Air Quality
- COP Section 5.2.1 – Water Quality
- COP Section 6.1.1 – Coastal and Marine Birds
- COP Section 6.2.1 – Bats
- COP Section 6.3.1 – Terrestrial Vegetation and Wildlife
- COP Section 6.4.1 – Wetlands and Waterbodies
- COP Section 6.5.1– Coastal Habitats
- COP Section 6.6.1 – Benthic and Shellfish
- COP Section 6.7.1 – Finfish and Invertebrates
- COP Section 6.8.1 – Marine Mammals
- COP Section 6.9.1 – Sea Turtles
- COP Section 7.1.1 – Marine Archaeology
- COP Section 7.2.1 – Terrestrial Archaeology
- COP Section 7.3.1 – Above-Ground Historic Properties
- COP Section 8.1 – Visual Resources
- COP Section 9.1.3 – In-Air Acoustics
- COP Section 9.2.1 – Underwater Acoustic Environment
- COP Section 10.1.1 – Demographics, Employment, and Economics
- COP Section 10.2.1 – Environmental Justice and Minority and Lower Income Groups
- COP Section 10.3.1 – Recreation and Tourism
- COP Section 11.1 – Commercial and Recreational Fisheries and Fishing Activity
- COP Section 12.1 – Zoning and Land Use
- COP Section 13.1 – Navigation and Vessel Traffic
- COP Section 14.1 – Other Marine Uses
- COP Section 15.1 – Public Health and Safety

2.6 Potential Project Impacts

Potential Project-related impacts to coastal areas of Massachusetts may be caused by the installation of WTGs, the installation of OSPs, the installation of the offshore export cables as well as landfall of the export cables, installation of the underground onshore export cables, or underground transmission route, and the onshore substation/converter station facilities. A discussion of Project-related impacts can be found in the COP within the sections identified below:

- COP Section 5.1.6 – Air Quality
- COP Section 5.2.3 – Water Quality

- COP Section 6.1.2 – Coastal and Marine Birds
- COP Section 6.2.2 – Bats
- COP Section 6.3.2 – Terrestrial Vegetation and Wildlife
- COP Section 6.4.2 – Wetlands and Waterbodies
- COP Section 6.5.2 – Coastal Habitats
- COP Section 6.6.2 – Benthic and Shellfish
- COP Section 6.7.4 – Finfish and Invertebrates
- COP Section 6.8.2 – Marine Mammals
- COP Section 6.9.2 – Sea Turtles
- COP Section 7.1.2 – Marine Archaeology
- COP Section 7.2.2 – Terrestrial Archaeology
- COP Section 7.3.2 – Above-Ground Historic Properties
- COP Section 8.2 – Visual Resources
- COP Section 9.1.4 – In-Air Acoustics
- COP Section 9.2.5 – Underwater Acoustic Environment
- COP Section 10.1.2 – Demographics, Employment, and Economics
- COP Section 10.2.2 – Environmental Justice and Minority and Lower Income Groups
- COP Section 10.3.2 – Recreation and Tourism
- COP Section 11.2 – Commercial and Recreational Fisheries and Fishing Activity
- COP Section 12.2 – Zoning and Land Use
- COP Section 13.2 – Navigation and Vessel Traffic
- COP Section 14.2 – Other Marine Uses
- COP Section 15.2 – Public Health and Safety

Portions of the Project that will have the most potential for coastal impacts to the Commonwealth of Massachusetts will be the routing and burial of the offshore export cables as well as landfall of the offshore export cables.

2.7 Avoidance, Minimization, and Mitigation Measures

Through design and planning, construction-related impacts to the coastal environment will be minimized to the greatest extent practicable. Many of the remaining Project-related impacts will be isolated or temporary in nature. Temporary impacts to the coastal and nearshore area will include the installation of the export cables as well as facilities at the landfall locations. The COP provides additional details on avoidance, minimization, and mitigation measures for specific resources. They are summarized in COP Section 16.0 – Summary of Avoidance, Minimization, and Mitigation Measures of Potential Impacts (COP Table 16-1).

3.0 Massachusetts Coastal Program Policies

Table 3-1 details the specific enforceable policies of the Commonwealth of Massachusetts that relate to the Project, as well as provides a detailed analysis and description of how the Project, as proposed, is fully consistent with each of these policies and their underlying authorities. The enforceable policies and guidelines are found in the CZM Policy Guide published October 2011. Enforceable policies will be discussed, and therefore, growth management policies, which contain no enforceable policies, are omitted. The Legal Authority for these enforceable policies is detailed in Appendix 3 – Coastal Program Legal Authorities to the policy guide.

Table 3-1. Enforceable Policies of the CZM

Policy #	Policy Requirement	Mayflower Wind Response	COP Section Reference
Coastal Hazards			
Coastal Hazard Policy #1 (Enforceable)	Preserve, protect, restore, and enhance the beneficial functions of storm damage prevention and flood control provided by natural coastal landforms, such as dunes, beaches, barrier beaches, coastal banks, land subject to coastal storm flowage, salt marshes, and land under the ocean. (CZM, 2011 pp 19-25)	This policy protects natural areas of the Massachusetts coastline that serve valuable functions as flood and storm control features. Mayflower Wind will comply with this policy by utilizing construction techniques and placing the export cable landfall in an area where these natural ecosystem functions and landforms will not be altered. Offshore: Installation of the export cables in nearshore and offshore areas will affect Land Under the Ocean as defined in the Massachusetts Wetlands Protection Act (WPA; Massachusetts General Laws [M.G.L.] Chapter 131 Section 40) and implementing regulations (310 CMR 10.00). The minor changes to the seabed associated with the burial of the cables are not anticipated to significantly affect the storm damage prevention and flood control functions of Land Under the Ocean, nor is the more significant dredging that may be required in areas of highly mobile sediments as these areas are already subject to frequent and significant natural seabed disturbances from storms. Landfall: To avoid impacts to nearshore areas and other coastal landforms, Mayflower Wind will utilize an HDD method for all cable landfalls, which is a trenchless installation method that will allow the Project to avoid directly impacting sensitive coastline areas (see Massachusetts Department of Environmental Protection (DEP) wetlands in Figure 15 through Figure 18). The Falmouth and Brayton Point landing locations avoid mapped coastal resources. An HDD landfall method would allow for the export cables to make landfall through a horizontal tunnel bored several meters underneath these nearshore areas and coastline features. The horizontal tunnel boring will be completed by a drill rig set up on shore within previously disturbed land. For the Falmouth ECC, the drill will exit on the seafloor in Nantucket Sound several thousand feet from shore, where the direct burial of the export cables through State waters would end and the cables would be pulled to shore through the HDD borehole. For the Brayton Point ECC, the drill will exit on the seafloor in either the Lee River (preferred) or Taunton River (alternate) approximately 1,640 ft (500 m) from shore, where the direct burial of the export cables through State waters would end and the cables would be pulled to shore through the HDD borehole. Onshore: The preferred landing location for the Falmouth ECC will make landfall within a developed area near the intersection of Worcester Avenue and Grand Avenue within Worcester Park. This location was chosen for the export cable landfall because it contains a seawall, a major secondary roadway and an open grassy area between lanes of Worcester Avenue (see Figure 17). Choosing this location will control or eliminate the damage to coastal areas that assist in flood control and storm damage prevention. If the preferred landfall location is used, there will be no impacts to Coastal Dune, Coastal Beach, or Coastal Bank, as defined in the Massachusetts WPA. The preferred landing location for the Brayton Point ECC will make landfall from the Lee River within a developed area on the western shoreline of Brayton Point. This location was chosen for the export cable landfall because it contains a highly developed land area and close proximity to the converter station site and POI at the existing National Grid substation (Figure 6). Choosing this location will control or eliminate the damage to coastal areas that assist in flood control and storm damage prevention. The Project will avoid impacts to coastal landforms, including Coastal Beach, and Coastal Bank, as defined in the Massachusetts WPA (Figure 18). Following completion of onshore construction, restoration of the HDD landfall location and installation of the underground onshore export cables, the Project will have no effect on flood velocities or floodplain storage capacity, and therefore no permanent impacts to Land Subject to Flooding or Land	COP Section 6.3 - Terrestrial Vegetation and Wildlife 6.3.1 – Affected Environment 6.3.1.1 – Terrestrial Habitats 6.3.1.1.1 - Falmouth Landfall Location 6.3.1.1.2 – Falmouth Onshore Export Cable Route/Transmission Line 6.3.1.1.5 – Brayton Point Landfall Location 6.3.1.1.6 – Brayton Point Export Cable Route 6.3.1.1.7 – Brayton Point Converter Station 6.3.1.2 – Terrestrial Wildlife and Plants 6.3.2 – Potential Effects 6.3.2.1 – Ground Disturbance 6.3.2.5 – Operation of Equipment and Heavy Machinery COP Section 6.4 – Wetlands and Waterbodies 6.4.1 - Affected Environment 6.4.1.1 – Wetlands 6.4.1.2 - Streams and Ponds 6.4.2 - Potential Effects 6.4.2.1 – Ground Disturbance COP Section 6.5 – Coastal Habitats 6.5.1 – Affected Environment 6.5.1.1.1 – Seagrass 6.5.1.1.2 – Macroalgae 6.5.1.1.3 – Submerged Aquatic Vegetation Beds 6.5.2 – Potential Effects 6.5.2.1 – Seabed (or Ground) Disturbance COP Appendix J, Terrestrial Vegetation and Wildlife Assessment

Policy #	Policy Requirement	Mayflower Wind Response	COP Section Reference
		Subject to Coastal Storm Flowage would result as all Project facilities will be below the ground surface and all pre-construction grades and contours will be restored.	
Coastal Hazard Policy #2 (Enforceable)	Ensure that construction in water bodies and contiguous land areas will minimize interference with water circulation and sediment transport. Flood or erosion control projects must demonstrate no significant adverse effects on the project site or adjacent or downcoast areas. (CZM, 2011 pp 25-26)	The Project, as proposed, will not interfere with water circulation or pose a threat to the integrity of downcoast areas. Offshore: During installation of the export cables in State waters, some dredging of highly mobile sediments along the export cable route will likely be required to allow for adequate burial of the cables to ensure safe operation. The installation of scour protection as well as cable protections along the seafloor are anticipated to temporarily increase turbidity in the localized area. In regard to the Falmouth ECC and Lease Area, assessments have been completed to evaluate scour influence on built infrastructure (e.g., export cables, WTG/OSP substructures) as well as plume dispersion impacts during construction (COP Appendix F1, Sediment Plume Impacts from Construction Activities and COP Appendix F2, Scour Potential Impacts from Operational Phase and Post-Construction Infrastructure). A hydrodynamic model was developed and the Project is not expected to interfere with ongoing sediment transport functions and patterns occurring along the export cable route, and sediment will continue to naturally accumulate or erode based on pre-existing patterns of sediment transport occurring in Nantucket Sound and elsewhere. In regard to the Brayton Point ECC, an assessment is planned to evaluate sediment dispersion during installation of the cables within the Brayton Point ECC (COP Appendix F3, Sediment Plume Impacts from Construction Activities). Scour will be evaluated based on data collected during the G&G surveys, available hydrodynamic modelling results, as well as literature data. Onshore: Mayflower Wind will be constructing onshore portions of the Project within previously disturbed or developed areas of Falmouth and Brayton Point (Figure 5 and Figure 6). For the Falmouth ECC, once landfall is made, the onshore export cables will be installed within an underground duct bank buried beneath existing roadway and/or shoulder layouts. For the Brayton Point ECC, once landfall is made, the underground export cables will traverse the site from the landing to the location of a new HVDC converter station. Underground transmission cables will be constructed from the converter station to the POI, an existing National Grid substation. The onshore substation in Falmouth and HVDC converter station at Brayton Point are expected to conform to the Massachusetts Stormwater Policy and will not alter existing sediment transport or circulation patterns, or result in adverse changes in stormwater runoff and flooding.	COP Section 4.1 – Site Geology 4.1.4 – Affected Environment 4.1.4.2 – Falmouth Offshore Export Cable Corridor 4.1.4.3 – Brayton Point Export Cable Corridor 4.1.5 – Potential Effects 4.1.5.1 – Seabed Disturbance COP Section 6.4 – Wetlands and Waterbodies 6.4.1 - Affected Environment 6.4.1.1 – Wetlands 6.4.1.2 - Streams and Ponds 6.4.1.3 – Wetlands and Waterbodies in the Onshore Project Area 6.4.2 - Potential Effects 6.4.2.1 – Ground Disturbance COP Section 6.5 – Coastal Habitats 6.5.1 – Affected Environment 6.5.1.1.1 – Seagrass 6.5.1.1.2 – Macroalgae 6.5.1.1.3 – Submerged Aquatic Vegetation Beds 6.5.2 – Potential Effects 6.5.2.1 – Seabed (or Ground) Disturbance COP Appendix F1, Sediment Plume Impacts from Construction Activities COP Appendix F2, Scour Potential Impacts from Operational Phase and Post-Construction Infrastructure COP Appendix F3, Sediment Plume Impacts from Construction Activities - Brayton Point ECC (pending)
Coastal Hazard Policy #3 (Enforceable)	Ensure that state and federally funded public works projects proposed for location within the coastal zone will: • Not exacerbate existing hazards or damage natural buffers or other natural resources. • Be reasonably safe from flood and erosion-related damage. • Not promote growth and development in hazard-prone or buffer areas, especially in velocity zones and Areas of Critical Environmental Concern. • Not be used on Coastal Barrier Resource Units for new or substantial reconstruction of structures in a manner inconsistent with the Coastal Barrier Resource/Improvement Acts. (CZM, 2011 pp 26-28)	There are no state or federally funded public works projects as a result of the proposed action.	Not applicable

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Energy			
Energy Policy #1 (Enforceable)	For coastally dependent energy facilities, assess siting in alternative coastal locations. For non-coastally dependent energy facilities, assess siting in areas outside of the coastal zone. Weigh the environmental and safety impacts of locating proposed energy facilities at alternative sites. (CZM, 2011 pp 30-35)	The Project involves the installation of a commercial-scale array of offshore WTGs within an established federal lease area for wind energy generation, which will produce clean, renewable energy for the New England region, and fulfill the obligations of the 20-year Power Purchase Agreement between Mayflower Wind and six utilities within the New England area. Offshore: The Project is inherently coastal-dependent. The federal lease areas were previously subject to an analysis of alternatives completed by BOEM during establishment of the Massachusetts/Rhode Island Wind Energy Area, in which the Project is located. This analysis was conducted as a portion of the Commercial Wind Lease Issuance and Site Assessment Activities on the Atlantic Outer Continental Shelf Offshore Rhode Island and Massachusetts: Environmental Assessment which received a Finding of No Significant Impact in May 2013. This Environmental Assessment included a prepared Consistency Determination pursuant to 15 CFR 930.36(a) sent to the Commonwealth of Massachusetts on August 20, 2012 for review. The Environmental Assessment provided all data and information required under 30 CFR 939.39 to support the Consistency Determination. BOEM determined that the activities described in the revised Environmental Assessment were consistent with the enforceable policies of the Massachusetts Coastal Zone Management Program. The Commonwealth of Massachusetts concurred with BOEM's determination on January 30, 2013.[11] To transmit electricity generated from the offshore WTG array to the onshore administered electrical grid, the shortest practicable paths to shore will be utilized while considering engineering feasibility, environmental constraints, and regulatory concerns. This path to transmit the generated electricity will naturally cross through the coastal areas of Massachusetts, and Mayflower Wind has assessed multiple alternative routes for the export cables, as well as potential landfall locations. The evaluation of these alternatives is detailed within the COP Section 2.0 – Project Siting and Design Development. Landfall and Onshore: The evaluation of multiple different landfall locations necessitated the evaluation of multiple onshore export cable routes with the coastal zone as well. Mayflower Wind also evaluated multiple different potential sites for the onshore substation and converter station facilities. Mayflower Wind completed these efforts to site the Project in a way that would ensure minimal displacement of water dependent industries and minimize environmental impact to the extent practicable. Additionally, BOEM has commissioned a third-party EIS that will further document and evaluate Project alternatives. Therefore, the Project is consistent with this CZM policy requiring the assessment of siting project facilities within alternative coastal locations.	COP Section 2.0 – Project Siting and Design Development 2.1 – Offshore Facilities 2.1.6 – Offshore Export Cables 2.1.6.1 – Offshore Export Cable Corridors Selected for PDE 2.2 – Onshore Facilities 2.2.1 – Landfall Location 2.2.1.1 – Landfall Locations Selected for PDE 2.2.2 – Sea-to-Shore Transition 2.2.2.1 – Sea-to-Shore Transition Selected for PDE 2.2.3 – Onshore Export Cable Route 2.2.3.1 – Onshore Cable Routes Selected for PDE 2.2.4 – Onshore Substation 2.2.4.1 – Onshore Substation Sites Selected for PDE COP Section 3.0 – Description of Proposed Activities 3.1 – Proposed Project Location 3.4 – Summary of Impact-Producing Factors 3.4.1 – Seabed (or Ground) Disturbance 3.4.1.1 – Offshore Export Cable and Inter-Array Cable Installation 3.4.1.1.1 – Seabed Disturbance – Seabed Preparation and Cable Burial 3.4.1.1.1.1 – Seabed Disturbance – Horizontal Directional Drilling
Habitat			
Habitat Policy #1 (Enforceable)	Protect coastal, estuarine, and marine habitats—including salt marshes, shellfish beds, SAV, dunes, beaches, barrier beaches, banks, salt ponds, eelgrass beds, tidal flats, rocky shores, bays, sounds, and other ocean habitats—and coastal freshwater streams, ponds, and wetlands to preserve critical wildlife habitat and other important functions and services including nutrient and sediment attenuation, wave and storm damage protection, and landform movement and processes. (CZM, 2011 pp 41-48)	Mayflower Wind has designed the Project to avoid impacts to ecologically sensitive areas to the maximum extent practicable, including nearshore coastal areas, natural shoreline areas, as well as saltwater and freshwater wetlands that are particularly sensitive to impacts. Offshore: Figure 10, Figure 12, and Figure 14 show the Falmouth ECC in relation to areas of concern or sensitive ocean habitat for consideration in siting transmission cables as mapped within the Massachusetts OMP. Figure 15 through Figure 17 show locations of coastal and marine habitats in the vicinity of the Falmouth ECC landfall locations. Selection of the preferred landfall location and use of HDD in Falmouth will avoid impacts to mapped coastal salt marshes, tidal flats, barrier beaches, salt ponds, bays and sounds, coastal beach, dunes, and rocky shores. Figure 9, Figure 11, and Figure 13 show the Brayton Point ECC in relation to areas of concern or sensitive ocean habitat for consideration in siting transmission cables as mapped within the Massachusetts OMP. Figure 18 shows locations of coastal and marine habitats in the vicinity of the Brayton Point export cable landfall locations. Selection	COP Section 6.4 – Wetlands and Waterbodies 6.4.1 - Affected Environment 6.4.1.1 – Wetlands 6.4.1.2 – Stream and Ponds 6.4.1.3 – Wetlands and Waterbodies in the Onshore Project Area 6.4.2 - Potential Effects 6.4.2.1 – Ground Disturbance 6.4.2.2 – Planned Discharges 6.4.2.3 – Accidental Events COP Section 6.5 – Coastal Habitats 6.5.1 – Affected Environment 6.5.1.1.1 – Seagrass

[11] U.S. Department of the Interior, Bureau of Ocean Energy Management (BOEM). May 2013. Commercial Wind Lease Issuance and Site Assessment Activities on the Atlantic Outer Continental Shelf Offshore Rhode Island and Massachusetts, Revised Environmental Assessment. OCS EIS/EA BOEM 2013-1131

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		of the preferred landfall location and use of HDD at Brayton Point will avoid impacts to mapped coastal salt marshes, tidal flats, barrier beaches, salt ponds, bays and sounds, coastal beach, dunes, or rocky shores. The Falmouth ECC is located entirely within areas designated as Land Under the Ocean by the Massachusetts WPA (M.G.L. Chapter 131 Section 40). These areas may also contain shellfish and SAV (Figure 14). The Falmouth ECC has been evaluated for technical feasibility and environmental considerations, such as the presence of hard bottom habitat, mapped shellfish suitability areas, and the amount of dredging required. The Falmouth ECC crosses some areas of mapped hard bottom and shellfish suitability areas (Figure 10, Figure 12). The Falmouth ECC is up to 3,280.8 ft (1,000 m) in width and is intended to allow maximum flexibility to refine siting to avoid sensitive habitats and resources. The Falmouth ECC width may be narrower or wider in certain locations to avoid known obstructions and/or to allow maximum flexibility to avoid critical features (e.g., complex hardbottom habitat) with micro-siting during installation. Not all sensitive habitat and resource areas can be avoided. Mayflower Wind has selected a preferred ECC to avoid impacts to these areas to the greatest extent practicable. Within the Massachusetts Coastal Zone Boundary, the Brayton Point ECC is located within areas designated as Land Under the Ocean by the Massachusetts WPA (M.G.L. Chapter 131 Section 40). These areas may contain shellfish (Figure 13); no SAV has been mapped in the vicinity of the Brayton Point ECC. Mayflower Wind will use the findings of ongoing surveys of the ECC to evaluate technical feasibility and environmental considerations, such as the presence of hard bottom habitat, mapped shellfish suitability areas, and the extent to which dredging may be required. The OMP mapping of hard bottom/complex habitat (an OMP SSU) does not include the area of the Brayton Point ECC. However, as illustrated in Figure 11, mapped surface sediments identify the presence of gravel and rock substrates in certain areas that may represent hard bottom or complex habitat. Not all sensitive habitat and resource areas can be avoided. Mayflower Wind has selected a preferred export cable route to avoid impacts to these areas to the greatest extent practicable. The ECC under consideration is up to 2,300 ft (700 m) in width to allow maximum flexibility to refine siting to avoid sensitive habitats and resources and may be locally narrower or wider in sensitive or constrained areas. Benthic sampling was conducted along the Brayton Point ECC in Summer 2021 to identify sensitive habitat; this information will support final cable alignment to avoid and/or minimize impacts. In addition to sediment profile imaging/plan view (SPI/PV) images and grab cam videos, video transects have been collected along the Brayton Point ECC to the preferred and alternate landings. Sampling results do not identify seagrass in the ECC within Massachusetts waters. The benthic data in combination with the geophysical survey data will also be used to identify the potential hard bottom and/or complex habitat. Export cable and WTG/OSP substructure installation will temporarily alter the seabed habitat, resulting in some effects associated with mortality and/or displacement during construction and some effects associated with recovery time from the areas affected by their placement. Where the bottom substrate is characterized by more heterogeneous, complex habitats, disturbance of the benthic communities is expected to require a longer period (estimated one to three years) to recover[12] (COP Appendix M, Benthic and Shellfish Resources Characterization Report). Construction related impacts are expected to be temporary. Nearshore/Landfall: The Project will utilize an HDD method for the Falmouth export cable landfall which will limit impacts to both nearshore areas as well as coastal landforms, including Coastal Beach, Coastal Bank, and Coastal Dune (Figure 15 through Figure 17). Mayflower Wind has conducted surveys to identify and delineate areas of SAV, including eelgrass, at the Falmouth landfall locations	6.5.1.1.2 – Macroalgae 6.5.1.1.3 – Submerged Aquatic Vegetation Beds 6.5.2 – Potential Effects 6.5.2.1 – Seabed (or Ground) Disturbance 6.5.2.2 – Changes in Ambient Lighting 6.5.2.3 – Changes in Ambient EMF 6.5.2.4 – Actions that may Displace Biological Resources (Eelgrass and Macroalgae) 6.5.2.5 – Actions that may Cause Direct Injury or Death 6.5.2.6 – Planned Discharges 6.5.2.7 – Accidental Events COP Section 6.6 – Benthic and Shellfish 6.6.1 – Affected Environment 6.6.1.3 – Falmouth Export Cable Corridor 6.6.1.4 – Brayton Point Export Cable Corridor 6.6.1.6 – Benthic Seafloor Substrate Classifications 6.6.1.6.2 – Falmouth Export Cable Corridor – Southern Portion 6.6.1.6.3 – Falmouth Export Cable Corridor – Northern Portion 6.6.1.6.4 – Brayton Point Export Cable Corridor 6.6.1.8 – Substrate and Biota – Integrated Habitat Classification 6.6.1.8.2 – Southern Falmouth Export Cable Corridor Stations 045, 046 and 047 6.6.1.8.3 – Northern Falmouth Export Cable Corridor Transect 005 6.6.2 – Potential Effects 6.6.2.1 – Introduced Sound into the Environment (in-Air or Underwater) 6.6.2.2 – Disturbance of Softbottom Habitat and Species 6.6.2.3 – Introduction of Novel Hardbottom Habitat 6.6.2.4 – Change in Ambient EMF 6.6.2.5 – Planned Discharges 6.6.2.6 – Accidental Events COP Appendix K, Seagrass and Macroalgae Report COP Appendix M, Benthic and Shellfish Resources Characterization Report

[12] Guarinello, M., D. Carey, and L.B. Read. 2017. Year 1 Report for 2016 Summer Post-Construction Surveys to Characterize Potential Impacts and Response of Hard Bottom Habitats to Anchor Placement at the Block Island Wind Farm (BIWF). INSPIRE Environmental prepared for Deepwater Wind Block Island LLC. May.

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		(see COP Appendix K, Seagrass and Macroalgae Report). Based on the results of the 2020 survey, mapped eelgrass beds extend approximately 3,100 ft (945 m) from shore in some locations. Mayflower Wind anticipates that the use of HDD will avoid impacts to mapped eelgrass beds. This information was used in selection of the preferred landfall location and will be used in the design of the HDD. The location that has been chosen for the landfall is a highly developed area near the intersection of Worcester Avenue and Grand Avenue. The HDD construction method will avoid or significantly limit impacts to eelgrass beds, shellfish beds, SAV, dunes, beaches, tidal flats, and rocky shores. As noted above, benthic habitat surveys confirmed the absence of eelgrass at Brayton Point landfall sites. Onshore: For the Falmouth POI, the onshore export cables will largely be installed in a duct bank within existing roadway and/or roadway layout from the landfall location to the onshore substation location. This will eliminate or greatly limit impacts to onshore coastal habitat areas to the maximum extent practicable. For the Brayton Point landfall location, the onshore export cables will be installed underground from the landfall location to the converter station. From the converter station, underground transmission cables will be installed to connect to the POI, the existing National Grid substation location. The Brayton Point site has been previously developed and disturbed, and as such natural habitat and regulated resources are not present on the site within the proposed Project footprint. This will eliminate or limit impacts to onshore coastal habitat areas to the maximum extent practicable.	
Habitat Policy #2 (Enforceable)	Advance the restoration of degraded or former habitats in coastal and marine areas. (CZM, 2011 pp 48-50)	The Project has been designed to avoid impacts to coastal and marine habitats to the maximum extent practicable, and those impacts that cannot be avoided will be mitigated for in accordance with applicable federal, state, and local regulations. Mayflower Wind will comply with performance standards identified in the Massachusetts WPA. In doing so, the Project will serve the protected statutory interests. See also response provided above for Habitat Policy #1.	See references provided for Habitat Policy #1
Ocean Resources			
Ocean Resources Policy #1 (Enforceable)	Support the development of sustainable aquaculture, both for commercial and enhancement (public shellfish stocking) purposes. Ensure that the review process regulating aquaculture facility sites (and access routes to those areas) protects significant ecological resources (salt marshes, dunes, beaches, barrier beaches, and salt ponds) and minimizes adverse effects on the coastal and marine environment and other water-dependent uses. (CZM, 2011 pp 50-53)	The Project is not an aquaculture development, nor will it adversely affect any current aquaculture facilities or local shellfishing areas. As detailed in the COP Section 11.0 – Commercial and Recreational Fisheries and Fishing Activity, commercial and recreational fishing areas will not be permanently impacted by the Project nor will access to these areas be affected. More specifically, as described in COP Section 11.1.2.6 Aquaculture and as illustrated in COP Figures 11-20 and 11-21, there are no aquaculture lease sites in the vicinity of the Falmouth or Brayton Point ECCs within the MA Coastal Zone Boundary or in federal waters.	COP Section 11.0 – Commercial and Recreational Fisheries and Fishing Activity 11.1 – Affected Environment 11.1.1 – Data Sources 11.1.2 – Summary of Commercial Fishing in the Offshore Project Area 11.1.2.6 - Aquaculture 11.1.3 – Recreational Fishing 11.2.2 – Actions that may Displace Biological Resources
Ocean Resources Policy #2 (Enforceable)	Except where such activity is prohibited by the Ocean Sanctuaries Act, the Massachusetts OMP, or other applicable provision of law, the extraction of oil, natural gas, or marine minerals (other than sand and gravel) in or affecting the coastal zone must protect marine resources, marine water quality, fisheries, and navigational, recreational and other uses. (CZM, 2011 pp 53-55)	The Project does not include the extraction of oil, natural gas, or marine minerals.	Not applicable
Ocean Resources Policy #3 (Enforceable)	Accommodate offshore sand and gravel extraction needs in areas and in ways that will not adversely affect marine resources, navigation, or shoreline areas due to alteration of wave direction and dynamics. Extraction of sand and gravel, when and where permitted, will be primarily for the purpose	The Project does not include the extraction of sand and gravel from marine areas and it is not anticipated to affect any ongoing or planned sand and gravel extraction activities.	Not applicable

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	of beach nourishment or shoreline stabilization. (CZM, 2011 pp 55-57)		
Ports and Harbors			
Ports and Harbors Policy #1 (Enforceable)	Ensure that dredging and disposal of dredged material minimize adverse effects on water quality, physical processes, marine productivity, and public health and take full advantage of opportunities for beneficial re-use. (CZM, 2011 pp 57-61)	At this time, it is not anticipated that construction of the Mayflower Wind Project would require dredging at any port or harbor facilities. As such, there will be no dredge material produced from port and harbor areas, nor will there be any need to dispose of dredge material originating from such facilities.	Not Applicable
Ports and Harbors Policy #2 (Enforceable)	Obtain the widest possible public benefit from channel dredging and ensure that Designated Port Areas and developed harbors are given highest priority in the allocation of resources. (CZM, 2011 pp 61-63)	The Project does not anticipate any dredging activities within channels to any port or harbor facilities. At this time, Mayflower Wind does not propose to implement any port or harbor improvements to support the Project and anticipates using existing ports and facilities that are suitable to support the types and sizes of vessels required for use during construction. Similarly, during operations and maintenance (O&M) of the Project, Mayflower Wind would utilize existing port and harbor facilities that are capable of accommodating the necessary vessels and support activities required during that phase of the Project lifecycle.	Not Applicable
Ports and Harbors Policy #3 (Enforceable)	Preserve and enhance the capacity of Designated Port Areas to accommodate water-dependent industrial uses and prevent the exclusion of such uses from tidelands and any other Designated Port Areas lands over which an EEA agency exerts control by virtue of ownership or other legal authority. (CZM, 2011 pp 63-67)	Mayflower Wind is planning to use existing port and harbor facilities that are suitable to support the types and sizes of vessels required for use both during construction, as well as O&M of the Project.	Not Applicable
Ports and Harbors Policy #4 (Enforceable)	For development on tidelands and other coastal waterways, preserve and enhance the immediate waterfront for vessel-related activities that require sufficient space and suitable facilities along the water's edge for operational purposes. (CZM, 2011 pp 68--70)	The export cables located within State waters, including the Falmouth ECC landfall, will not preclude the use of the immediate waterfront for vessel-related activities or other water-dependent activities. The Project will use an HDD landfall method to minimize impacts to nearshore and coastal waters. During construction, this installation method will require a temporary, short-term prohibition on access to the waterfront within the immediate construction work areas and HDD paths for safety reasons. However, there will be no long-term impacts to immediate waterfront areas, public access, or vessel related activities along the waterfront area.	COP Section 3.0 – Description of Proposed Activities 3.4 – Summary of Impact-Producing Factors 3.4.1 – Seabed (or Ground) Disturbance 3.4.1.1 – Offshore Export Cable and Inter-Array Cable Installation 3.4.1.1.1 – Seabed Disturbance – Seabed Preparation and Cable Burial 3.4.1.1.1.1 – Seabed Disturbance – Horizontal Directional Drilling COP Section 6.4 – Wetlands and Waterbodies 6.4.1 - Affected Environment 6.4.1.1 – Wetlands 6.4.1.2 – Stream and Ponds 6.4.1.3 – Wetlands and Waterbodies in the Onshore Project Area 6.4.2 - Potential Effects 6.4.2.1 – Ground Disturbance COP Section 6.5 – Coastal Habitats 6.5.1 – Affected Environment 6.5.1.1.1 – Seagrass 6.5.1.1.2 – Macroalgae 6.5.1.1.3 – Submerged Aquatic Vegetation Beds 6.5.2 – Potential Effects 6.5.2.1 – Seabed (or Ground) Disturbance COP Section 12.0 – Zoning and Land Use 12.1 - Affected Environment

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			12.1.2 – Landfall Locations and HDD Sites 12.1.2.1 – Falmouth Landfall Location Option 1: Falmouth Heights Beach – Worcester Avenue 12.1.2.6 – Brayton Point Export Cable Corridor Intermediate Landfall 12.2 – Potential Effects 12.2.1 – Land Use COP Section 13.0 – Navigation and Vessel Traffic 13.1 – Affected Environment 13.1.1 – Vessel Traffic 13.1.2 - Navigation 13.2 – Potential Effects 13.2.2 – Actions that may Displace or Impact Fishing and Recreation and Tourism COP Section 14.0 – Other Marine Uses 14.1 – Affected Environment 14.1.3 – Federal Offshore Energy 14.1.4 – Cables and Pipelines 14.2 – Potential Effects 14.2.2 – Installation and Maintenance of Infrastructure
Protected Areas			
Protected Areas Policy #1 (Enforceable)	Preserve, restore, and enhance coastal Areas of Critical Environmental Concern, which are complexes of natural and cultural resources of regional or statewide significance. (CZM, 2011 pp 72-75)	There are no Areas of Critical Environmental Concern in proximity to the Project; therefore, the Project will have no effect on Areas of Critical Environmental Concern.	Not applicable
Protected Areas Policy #2 (Enforceable)	Protect state designated scenic rivers in the coastal zone. (CZM, 2011 pp 75-76)	There are no designated scenic rivers within the area of the Project, and therefore, there will be no impact on these resources.	Not applicable
Protected Areas Policy #3 (Enforceable)	Ensure that proposed developments in or near designated or registered historic places respect the preservation intent of the designation and that potential adverse effects are minimized. (CZM, 2011 pp 76-77)	Mayflower Wind is conducting assessments of historical and archaeological resources within the area of potential effect for the Project. This includes both the terrestrial (onshore) and marine (nearshore and offshore) facilities for the Project. Mayflower Wind has obtained a permit from the Massachusetts Board of Underwater Archaeological Resources to conduct a marine archaeological survey of the Falmouth ECC and initiated surveys in July 2020 along the ECC and within the Lease Area. Additional marine archaeological surveys initiated in 2021 covered additional areas of the Falmouth ECC, the Lease Area and the Brayton Point ECC. Mayflower Wind has submitted a Project Notification Form to the Massachusetts Historical Commission (MHC) for the onshore Project facilities, secured a permit from MHC to conduct reconnaissance terrestrial surveys (Phase 1A) and has prepared a Phase 1A report for the Project (see COP Appendix R, Terrestrial Archaeological Resources Assessment). For Brayton Point, Mayflower Wind submitted a Project Notification Mayflower Wind and completed a reconnaissance terrestrial survey (Phase 1A); the archaeologist concluded that construction of the Brayton Point HVDC converter station, underground cable system and HDD site will not impact significant historic properties eligible to the National/State Registers and recommended no further archaeological investigation.	COP Section 7.1 – Marine Archaeology 7.1.1 – Affected Environment 7.1.1.1 – Shipwrecks and Obstructions 7.1.1.2 – Paleolandscape 7.1.2 – Potential Effects 7.1.2.1 – Seabed (or Ground) Disturbance 7.1.2.2 – Sediment Suspension and Deposition COP Section 7.2 – Terrestrial Archaeology 7.2.1 – Affected Environment 7.2.1.1 – Landfall Locations and HDD Sites 7.2.1.1.1 – Falmouth Landfall Location Option A: Falmouth Heights Beach – Worcester Avenue 7.2.1.1.4 – Brayton Point Location Option 1: Brayton Point – Western

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		Mayflower Wind also anticipates conducting intensive surveys, as necessary, within areas identified as potentially sensitive for presence of previously unknown historic or archaeological resources. Potential effects, if any, to historic resources will be addressed with BOEM, the Tribes, Board of Underwater Archaeological Resources, and MHC through established review procedures, and all appropriate measures consistent with Section 106 of the National Historic Preservation Act and state register review process will be taken. Offshore: Mayflower Wind has evaluated potential visual impacts to historic resources as a result of the Project facilities (see COP Appendix S, Analysis of Visual Effects to Historic Properties). There are no anticipated visual impacts to mainland (Upper Cape Cod) historic resources from the WTGs/OSPs due to the distance of the Lease Area. Mayflower Wind has conducted visual simulations from various key observation points on Martha's Vineyard and Nantucket, including designated or registered historic places. In many instances, these properties were not designated or listed due to the significance of the viewshed from the historic property, and therefore, the significance of the designation or listing would not be diminished. Also, based on the distance of the Lease Area from these resources coupled with common weather conditions, it is anticipated that the WTGs/OSPs may not be visible from these resources for a significant portion of the year. Onshore: Similarly, for the onshore Project facilities, Mayflower Wind has assessed the potential visual impact of these facilities on historic resources (see COP Appendix S, Analysis of Visual Effects to Historic Properties and COP Appendix T, Visual Impact Assessment). The underground onshore export cables will have no visual impact on historic resources as the cables will be buried beneath existing paved roadways, and following completion of construction, the only visual indicators of the presence of the cables will be manhole covers within the paved roadway surface. For the Falmouth ECC, the potential onshore substation sites are not located within any designated or registered historic districts, though the preferred substation location (Lawrence Lynch) located at 396 Gifford Street in Falmouth is located next to the Oak Grove Cemetery, which is a listed property on the National Register of Historic Places (NRHP). If this site was selected for construction of the onshore substation facility, Mayflower Wind does not believe the Project would have an unacceptable adverse effect this NRHP-listed historic property as the substation facility would be built within an existing industrial sand and gravel pit facility and would not require tree clearing or land disturbance any closer to the cemetery than currently exists. Visual impacts may be minimized or avoided by vegetative screening. Because the Brayton Point site was previously occupied by the Brayton Point Power Station, the largest coal-fired generating station in New England, historic resources within the viewshed would have previously had views of the power plant cooling towers, stacks and other structures. As such, the visual effect of the Project on historic resources is expected to be less impactful than the previous long-term views of the power plant. The HVDC converter station site is not located within any designated or registered historic districts. Beyond the visual effects mentioned above, the onshore construction at Brayton Point is not expected to directly or indirectly affect historic properties.	7.2.1.1.5 – Brayton Point Location Option 2: Brayton Point – Eastern 7.2.1.3 – Onshore Export Cable Routes 7.2.1.4 – Onshore Substation and Converter Station Sites 7.2.2 – Potential Effects 7.2.2.1 – Ground Disturbance 7.2.2.2 – Accidental Events COP Section 7.3 – Above-Ground Historic Properties 7.3.1 – Affected Environment 7.3.1.1 – Offshore APE 7.3.1.2 – Onshore APE 7.3.2 – Potential Effects 7.3.2.1 – Altered Visual Conditions COP Section 8.0 – Visual Resources 8.1 – Affected Environment 8.1.1 – Offshore Project Area 8.1.2 – Onshore Project Area 8.2 – Potential Effects 8.2.1 – Altered Visual Conditions COP Appendix Q, Marine Archaeological Resources Assessment COP Appendix R, Terrestrial Archaeological Resources Assessment COP Appendix S, Analysis of Visual Effects to Historic Properties COP Appendix T, Visual Impact Assessment
Public Access			
Public Access Policy #1 (Enforceable)	Ensure that development (both water-dependent or non-water-dependent) of coastal sites subject to state waterways regulation will promote general public use and enjoyment of the water's edge, to an extent commensurate with the Commonwealth's interests in flowed and filled tidelands under the Public Trust Doctrine. (CZM, 2011 pp 78-87)	The Project, as proposed, will have no appreciable effects on the Commonwealth's interests in flowed and filled tidelands under the Public Trust Doctrine or on the general public's use and enjoyment at the water's edge. For the Falmouth ECC, the export cables will make landfall in a highly developed section of the Massachusetts coastline utilizing an HDD method that will avoid impacting the public's use and recreation in coastal areas. For the Brayton Point ECC, the area of landfall is in private property that was formerly used as an industrial site (coal fired power plant), and therefore not commonly used for recreation. During the installation of the export cables there will be a temporary, short-term prohibition on access to the waterfront within the immediate construction work areas and HDD path for safety	COP Section 10.3 – Recreation and Tourism 10.3.1 – Affected Environment 10.3.1.1 – Land-based and Near-shore-based Recreation and Tourism Resources 10.3.1.1.1 – Falmouth Onshore Project Area 10.3.1.1.2 – Brayton Point Onshore Project Area

Policy #	Policy Requirement	Mayflower Wind Response	COP Section Reference
		reasons. However, it is anticipated that the installation of the export cables and landfall construction will take place outside of peak tourism season so as to not interfere with public access to waterfront areas. Additionally, there will be no long-term impacts to waterfront areas or to public access to the water's edge resulting from the Project.	10.3.1.2 – Water-based Recreation and Tourism Resources 10.3.2 – Potential Effects 10.3.2.1 – Construction Areas and Traffic 10.3.2.2 – Saturation of Tourism-related Services (Boat Rentals, Outfitters, etc.) COP Section 11.0 – Commercial and Recreational Fisheries and Fishing Activity 11.1 – Affected Environment 11.1.1 – Data Sources 11.1.2 – Summary of Commercial Fishing in the Offshore Project Area 11.1.3 – Recreational Fishing 11.1.4 – Fisheries Outreach 11.2 - Potential Effects 11.2.1 – Vessel Activity and Presence of Infrastructure 11.2.3 – Gear Interactions COP Section 12.0 – Zoning and Land Use 12.1 - Affected Environment 12.1.2 – Landfall Locations and HDD Sites 12.1.2.1 – Falmouth Landfall Location Option 1: Falmouth Heights Beach – Worcester Avenue 12.1.2.6 – Brayton Point Export Cable Corridor Intermediate Landfall 12.2 – Potential Effects 12.2.1 – Land Use 12.2.2 – Construction Areas / Traffic 12.2.3 – Noise and Vibration COP Section 15.0 – Public Health and Safety 15.1 – Affected Environment 15.1.1 – Health and Safety Regulations Related to the Proposed Project 15.1.2 – Communities Health and Safety 15.2 – Potential Effects 15.2.1 – Unplanned Events
Water Quality			
Water Quality Policy #1 (Enforceable)	Ensure that point-source discharges and withdrawals in or affecting the coastal zone do not compromise water quality standards and protect designated uses and other interests. (CZM, 2011 pp 92-95)	Offshore: Construction and installation activities associated with the Project have the potential to impact coastal and marine water quality through structure installations and removal, as well as vessel discharges such as domestic wastewater, uncontaminated bilge water, treated deck drainage and sumps, uncontaminated ballast water, and uncontaminated fresh or seawater from vessel air conditioning. Bilge water discharges may only occur in nearshore and offshore waters provided that the effluent is processed by an approved oil and water separator and the oil content of the bilge water is less than 15 parts per million. Bilge water that cannot be discharged in compliance with regulations will be retained onboard the vessel for disposal at an approved receiving facility back in port. Generally, ballast water is pumped into and out of separate compartments and is not usually contaminated with oil. However, the same discharge criteria for oil content also applies to ballast water. All vessels will be required to comply with federal and state discharge requirements, as well as requirements for the control and prevention of accidental spills, which are detailed in the Oil Spill Response Plan developed for the Project (see COP Appendix AA, Oil Spill Response Plan). By	COP Section 3.3 – Project Components and Project Stages 3.3.16 – Waste Generation and Disposal COP Section 5.2 – Water Quality 5.2.1 – Affected Environment 5.2.1.2 – Massachusetts Department of Environmental Protection 5.2.3 – Potential Effects 5.2.3.1 – Seabed or Ground Disturbance 5.2.3.2 – Planned Discharges 5.2.3.3 – Accidental Events COP Section 15.0 – Public Health and Safety

Policy #	Policy Requirement	Mayflower Wind Response	COP Section Reference
		complying with these state and federal regulations, no adverse impacts to water quality are anticipated. Within the Lease Area, Falmouth ECC and Brayton Point ECC, installation of the WTGs/OSPs, as well as burial of the export cables, will cause a temporary increase in turbidity. However, mapped ocean currents should allow this sediment to settle rapidly into the local environment. Cable burial will also occur for all inter-array cables between the WTGs and the OSPs using a similar method to the laying of the export cables. This is not anticipated to be a significant impact, as sediment that will be resuspended is anticipated to settle rapidly within the local environment (ECCs or Lease Area) (see Section 5.2 – Water Quality of the COP document, and the COP Appendix H, Water Quality Report). As part of the federal and state permitting processes under the federal Clean Water Act Section 404 and Section 401 Water Quality Certification frameworks, Mayflower Wind will engage with the permitting agencies and comply with the conditions of the permit issued. The installation of cable scour protection (armoring) as well as cable protections along the seafloor are anticipated to temporarily increase turbidity in the localized area. The surface sediments, however, are predominately sandy and anticipated to settle quickly and present temporary conditions similar to the installation of the WTG/OSP foundations and the inter-array cables (see COP Appendix F1, Sediment Plume Impacts from Construction Activities and COP Appendix F2, Scour Potential Impacts from Operational Phase and Post-Construction Infrastructure). Landfall: Use of the HDD construction technique for installation of the export cable landfalls is proposed to avoid large-scale disturbance of surface and underwater sediments that would have a more significant effect on water quality. However, the HDD activity still has the ability to affect water quality as a result of an inadvertent release of the drilling fluid used to lubricate the drill head and help maintain the bore hole during drilling activities. The drill fluid is composed of non-hazardous	15.1 – Affected Environment 15.1.1 – Health and Safety Regulations Related to the Proposed Project 15.1.2 – Communities Health and Safety 15.2 – Potential Effects 15.2.1 – Unplanned Events COP Appendix A, Agency Correspondence COP Appendix H, Water Quality Report COP Appendix X, Navigation Safety Risk Assessment COP Appendix AA, Oil Spill Response Plan
		compounds and typically consists of mixture of bentonite mud and water. Regardless, any inadvertent release of this drilling fluid to coastal waters has the ability to negatively impact water quality. Mayflower Wind will develop and implement an HDD drill fluid management and contingency plan to avoid inadvertent returns before they occur, and to clean up any drill fluid that is released through an inadvertent return to the ground surface. Provisions of this plan will be a requirement that the Project constantly monitor fluid pressures within the borehole and re-assess conditions and potentially re-align the bore path any time there is a drop in fluid pressure that could indicate the loss of drill fluid to an inadvertent return. Mayflower Wind will require all vessels to comply with applicable regulations for the prevention and control of accidental spills of fuels, oils, and other hazardous materials. Mayflower Wind has also included an Oil Spill Response Plan (COP Appendix AA, Oil Spill Response Plan) that includes provisions for responding to oil and fuel spills. Other wastes generated during offshore construction and O&M activities, including septage, solid wastes or other hazardous materials (chemicals, solvents, oils, greases, etc.) from equipment operation or maintenance will be temporarily stored and properly disposed of on land or otherwise disposed of in accordance with all applicable regulations (see COP Section 3.3 – Project Components and Project Stages). Onshore: Construction of the onshore substation facility and HVDC converter station will be subject to the Massachusetts Stormwater Standards and will be designed with a stormwater management system to adequately manage stormwater runoff originating from these developments. By designing the stormwater management systems in compliance with state regulations pertaining to stormwater, the point source discharges associated with these discrete site developments is anticipated to have no adverse effect on water quality within the coastal zone.	

Policy #	Policy Requirement	Mayflower Wind Response	COP Section Reference
Water Quality Policy #2 (Enforceable)	Ensure the implementation of nonpoint source pollution controls to promote the attainment of water quality standards and protect designated uses and other interests. (CZM, 2011 pp 95-98)	Nonpoint source pollution controls will be utilized during the construction and installation of all onshore portions of the Project to ensure that nonpoint source pollution will not adversely affect water quality within the coastal zone. These include construction phase best management practices, such as limiting of vegetation disturbance and soil grading, installation of erosion and sedimentation controls at the limit of work to manage stormwater runoff, implementation of vehicle refueling restrictions within 100 ft (30 m) of wetlands and waterbodies, strict storage and management of oils and hazardous materials incidental to construction activities, and provisions for immediate containment, cleanup, and reporting (as necessary) of any inadvertent releases of oils and hazardous materials. As part of the National Pollution Discharge Elimination System Construction General Permit for construction projects disturbing one or more acres (0.4 ha or more), Mayflower Wind will develop and implement a construction phase Erosion and Sediment Control Plan for the onshore Project facilities that includes all of the provisions detailed above and more and establishes requirements to inspect the construction areas on a weekly basis at minimum to determine compliance with the Construction General Permit conditions and the Project-specific Erosion and Sediment Control Plan.	COP Section 3.3 – Project Components and Project Stages 3.3.15 – Health, Safety and Environmental Protections COP Appendix A, Agency Correspondence COP Appendix F2, Scour Potential Impacts from Operational Phase and Post-Construction Infrastructure COP Appendix H, Water Quality Report
Water Quality Policy #3 (Enforceable)	Ensure that subsurface waste discharges conform to applicable standards, including the siting, construction, and maintenance requirements for on-site wastewater disposal systems, water quality standards, established Total Maximum Daily Load limits, and prohibitions on facilities in high-hazard areas. (CZM, 2011 pp 98-100)	The Project does not propose any facilities that include a subsurface wastewater disposal system as the onshore facilities will not be manned by any O&M personnel. Temporary sanitation facilities will be provided during construction of the onshore Project components through the use of portable latrines that will be periodically emptied and cleaned by a portable latrine service provider. Likewise, the offshore facilities will not be manned by any O&M personnel. However, during construction and O&M activities, sanitation would be provided on the service vessels utilized by O&M personnel for transport to the offshore facilities. The transport vessels would hold sewage within holding tanks and dispose of all raw or treated sewage in accordance with all applicable discharge rules and regulations.	COP Section 5.2 – Water Quality 5.2.1 – Affected Environment 5.2.1.2 – Massachusetts Department of Environmental Protection 5.2.3 – Potential Effects 5.2.3.1 – Seabed or Ground Disturbance 5.2.3.2 – Planned Discharges 5.2.3.3 – Accidental Events COP Appendix A, Agency Correspondence COP Appendix H, Water Quality Report

4.0 Consistency Certification

Mayflower Wind has evaluated all applicable enforceable policies of the Massachusetts CZM for the Project to determine if the activities are consistent with those policies. Mayflower Wind believes the Project and related activities comply with the enforceable policies of Massachusetts' approved coastal zone management program and will be conducted in a manner fully consistent with that program.

Attachment 1 – Figures

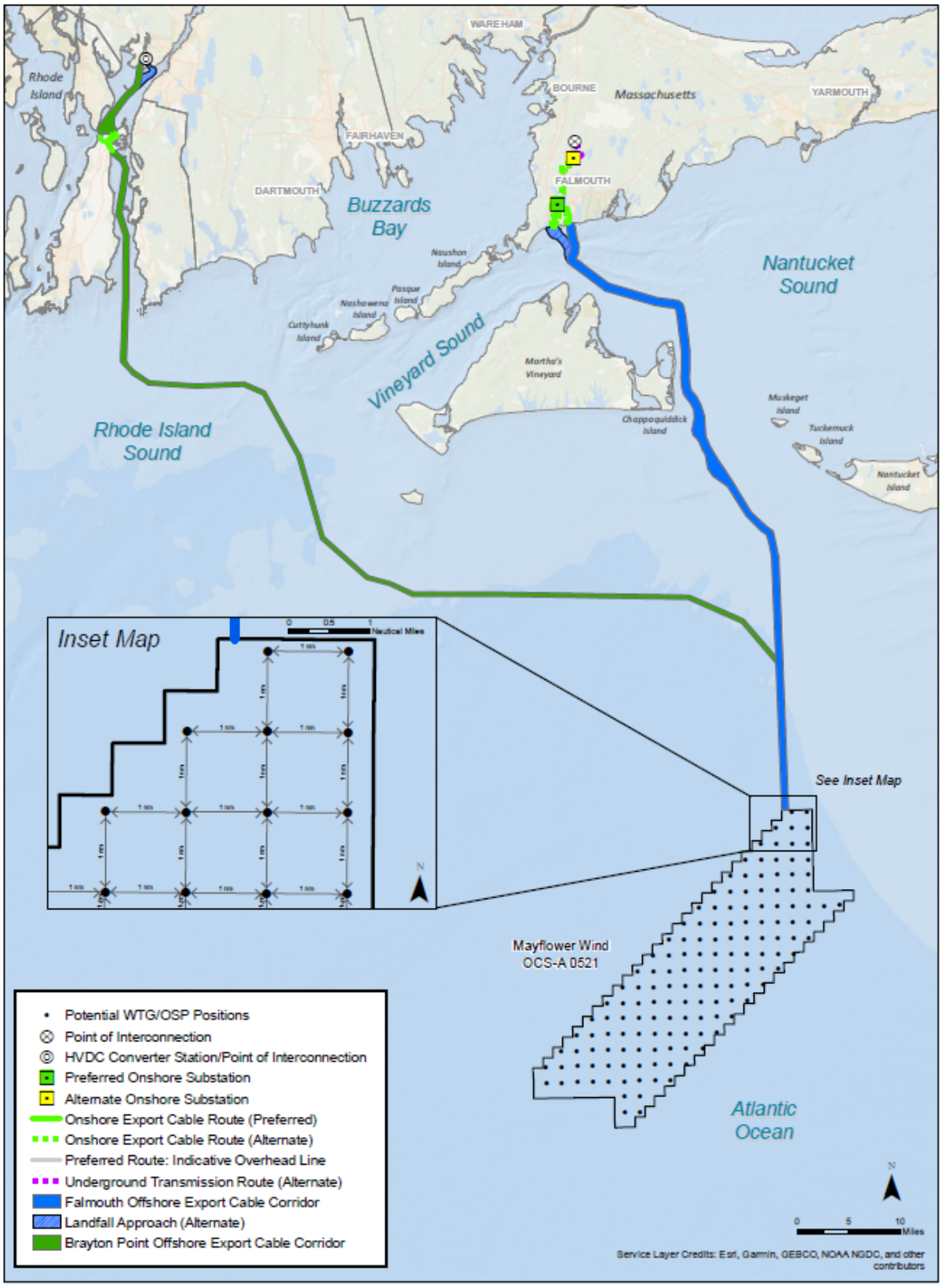


Figure 1. Overview of Mayflower Wind Offshore Renewable Energy Generation Project

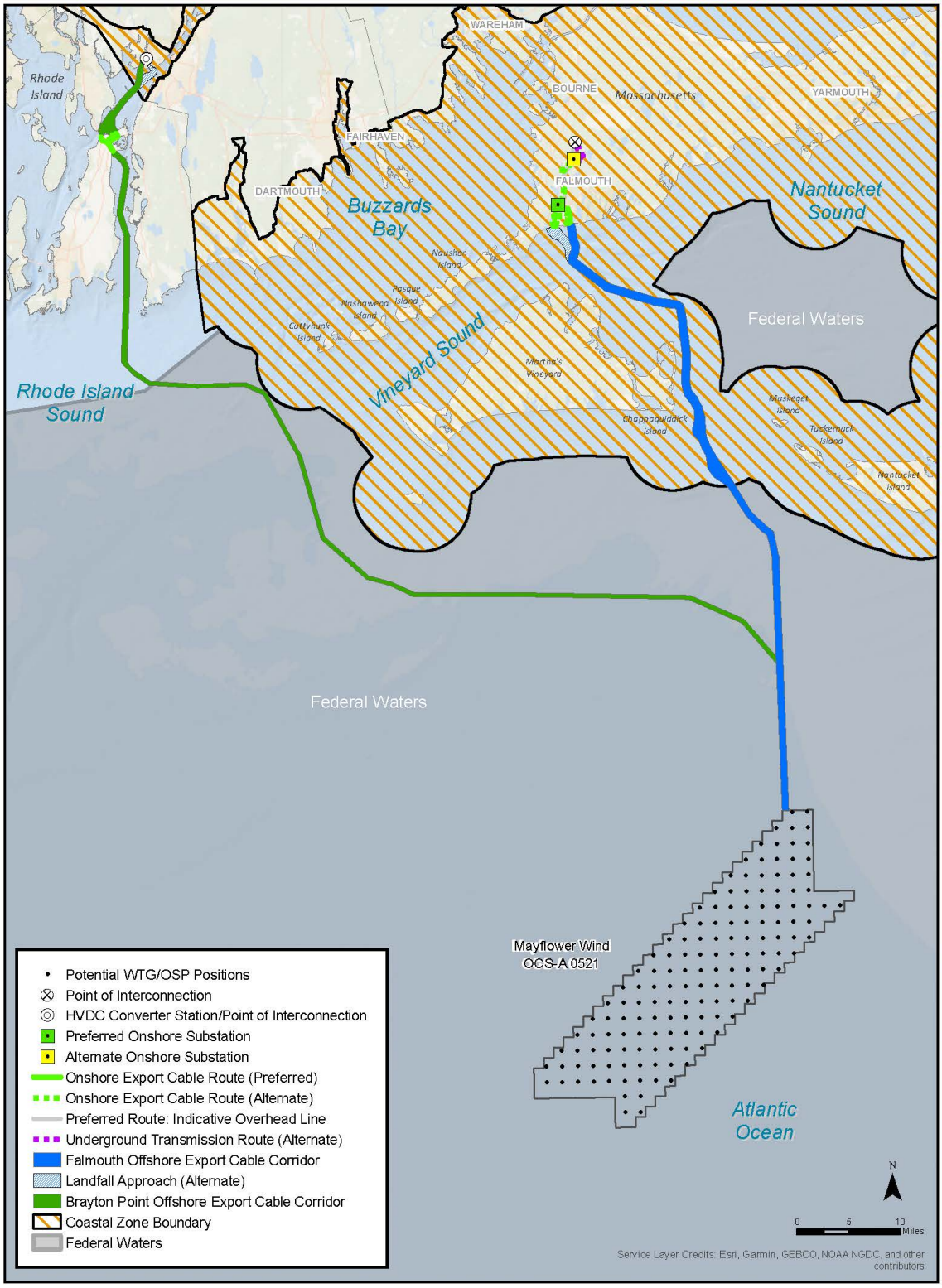


Figure 2. Offshore and Onshore Project Areas with Massachusetts CZM Boundary and Federal Waters

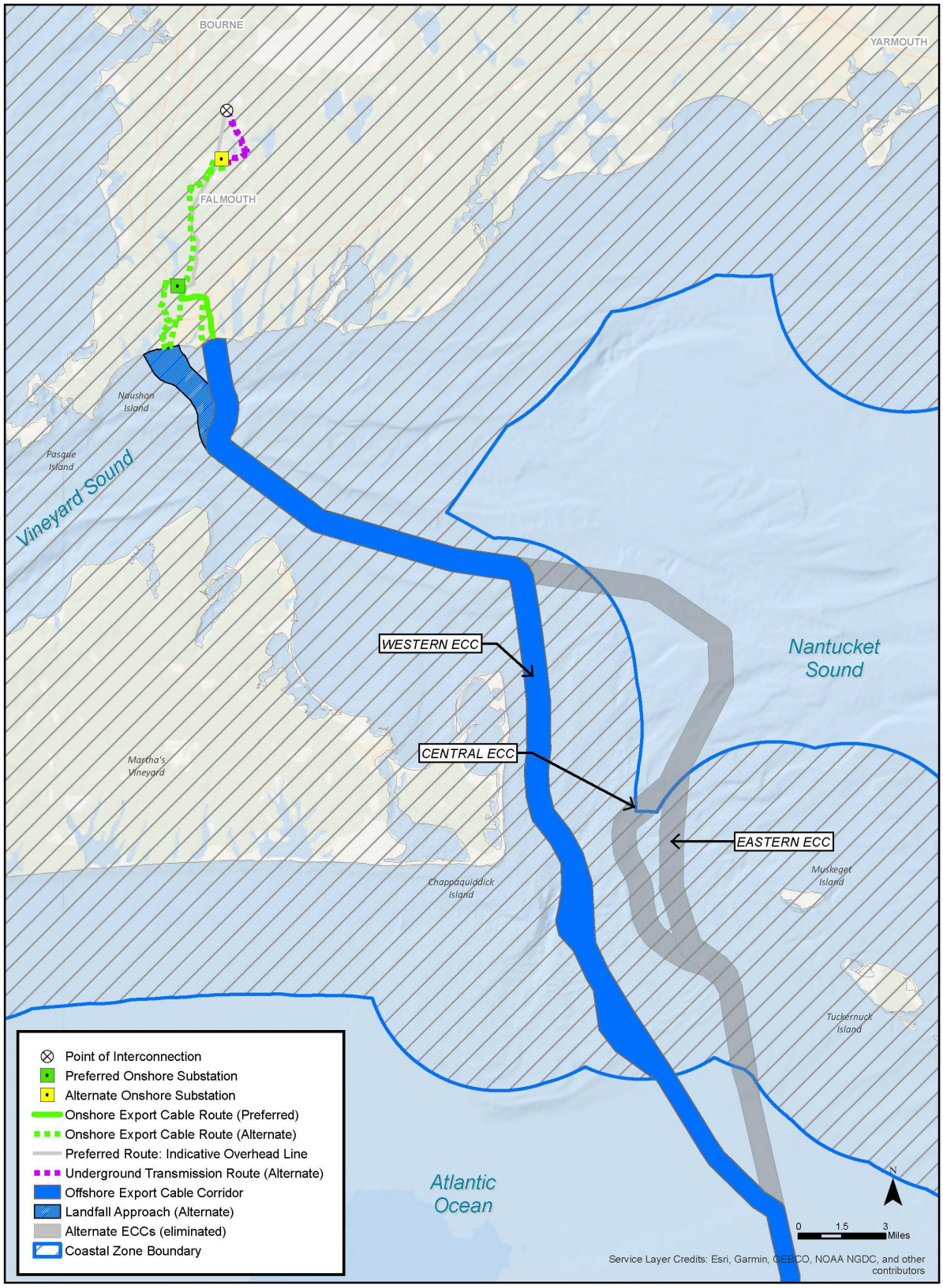


Figure 3. Falmouth ECC Alternatives and Onshore Project Area and Massachusetts CZM Boundary

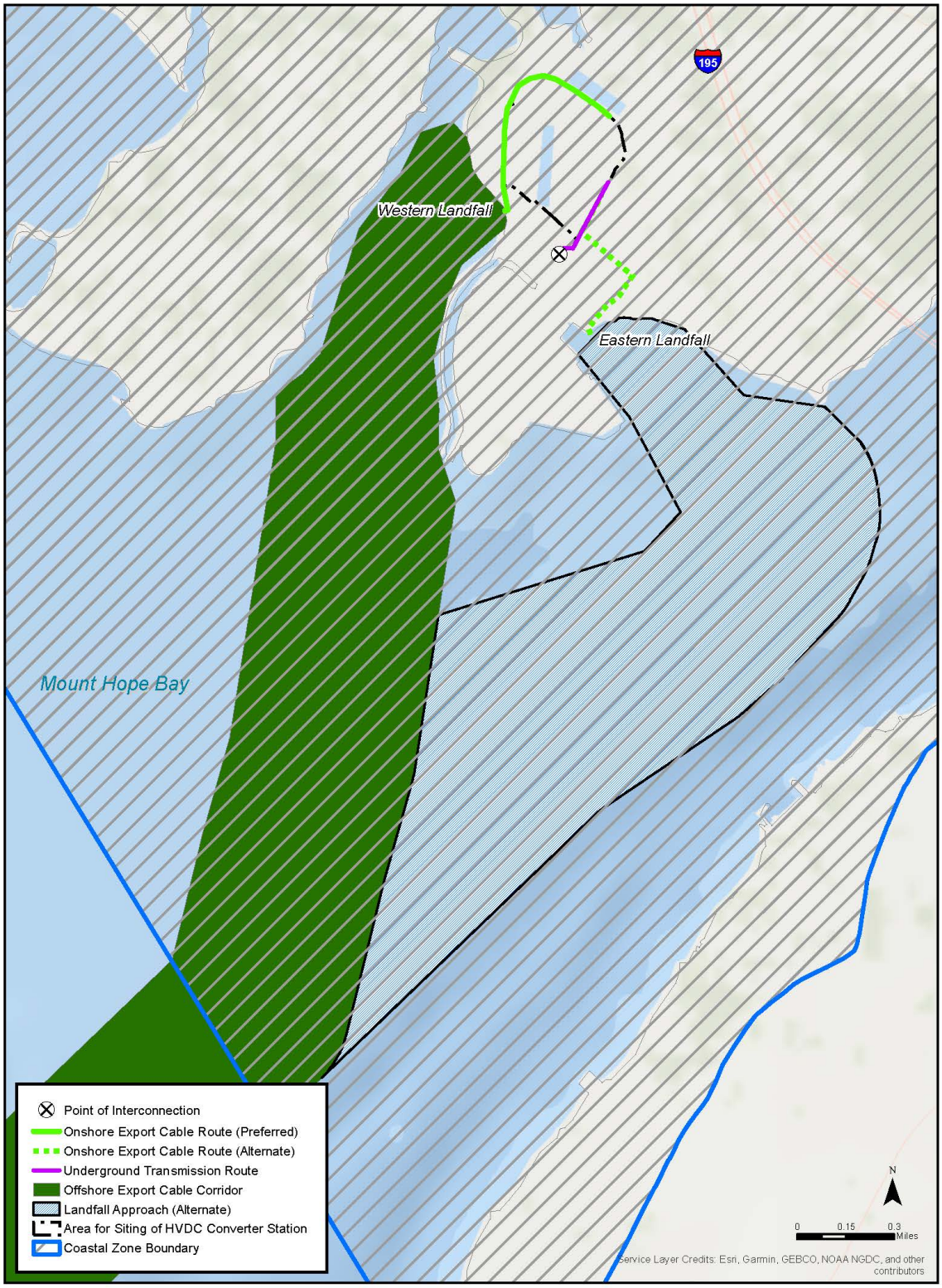


Figure 4. Brayton Point ECC and Onshore Project Area and Massachusetts CZM Boundary

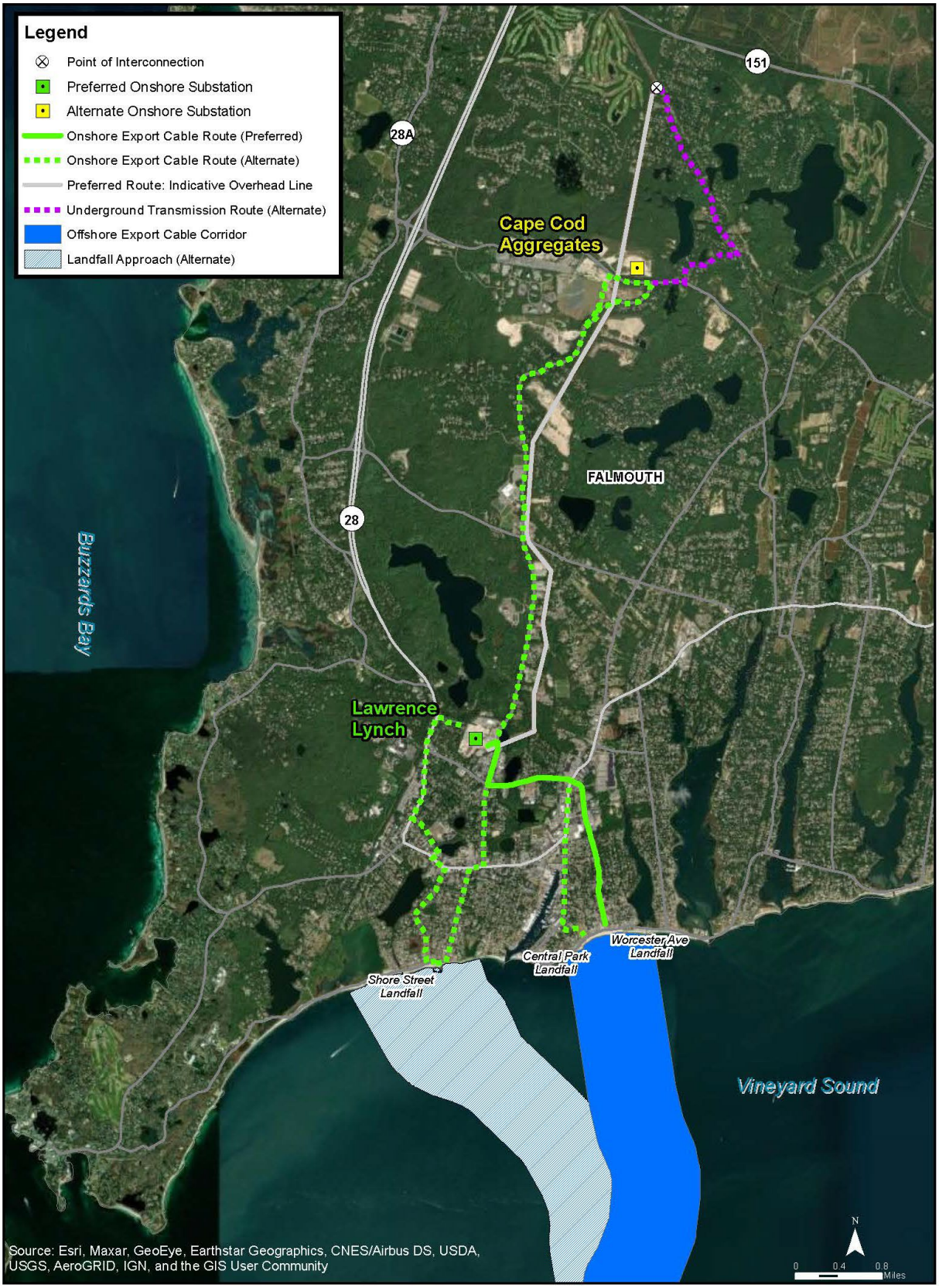
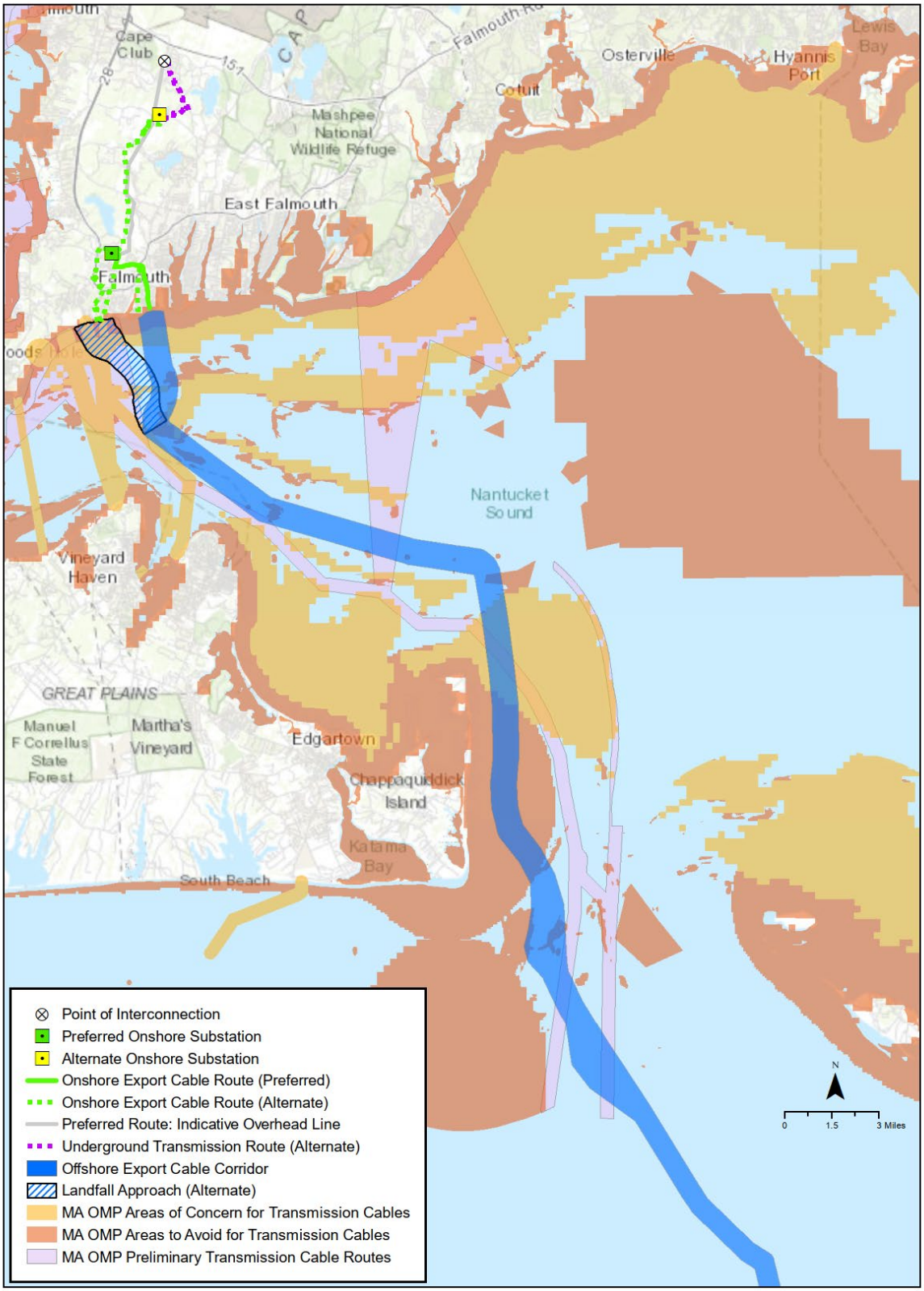


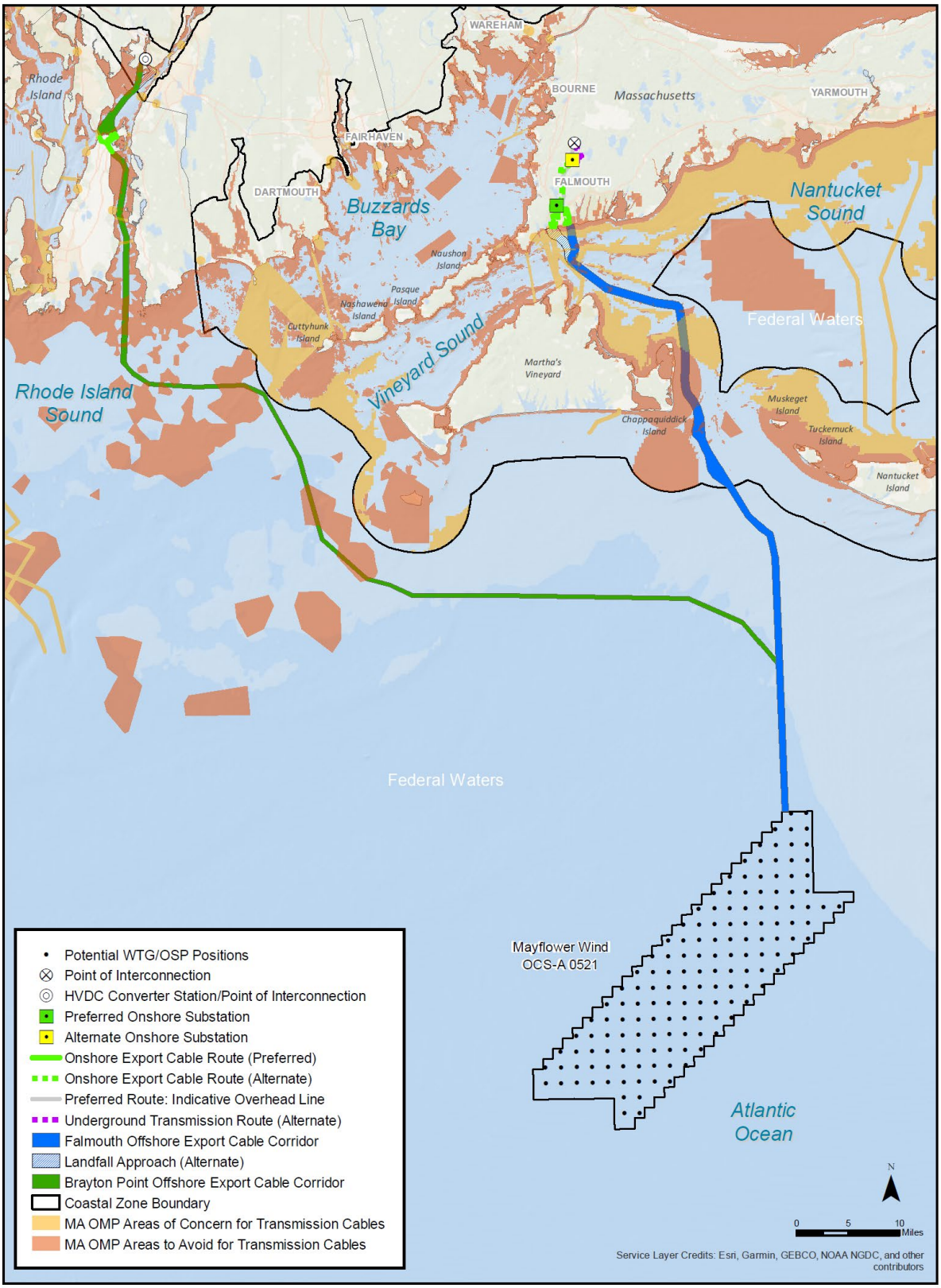
Figure 5. Location of the Falmouth Onshore Project Area

Figure 6. Location of the Brayton Point Onshore Project Area



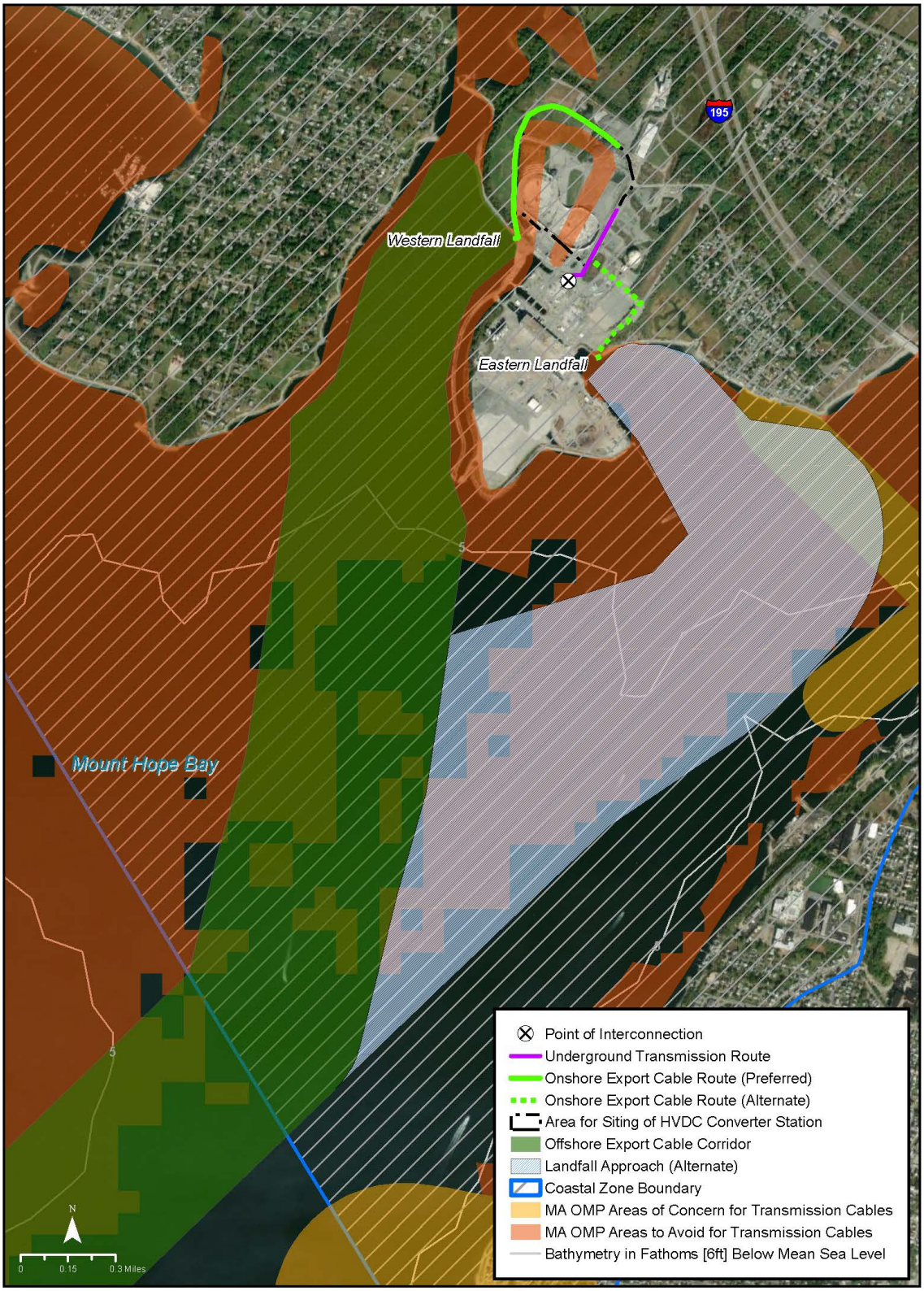
Sources: (1) and (2): See full citation of sources on page Att 1-19

Figure 7. MA OMP Areas of Concern, Areas to Avoid, and Preliminary Transmission Cable Routes within the Massachusetts Coastal Zone Boundary – Falmouth ECC



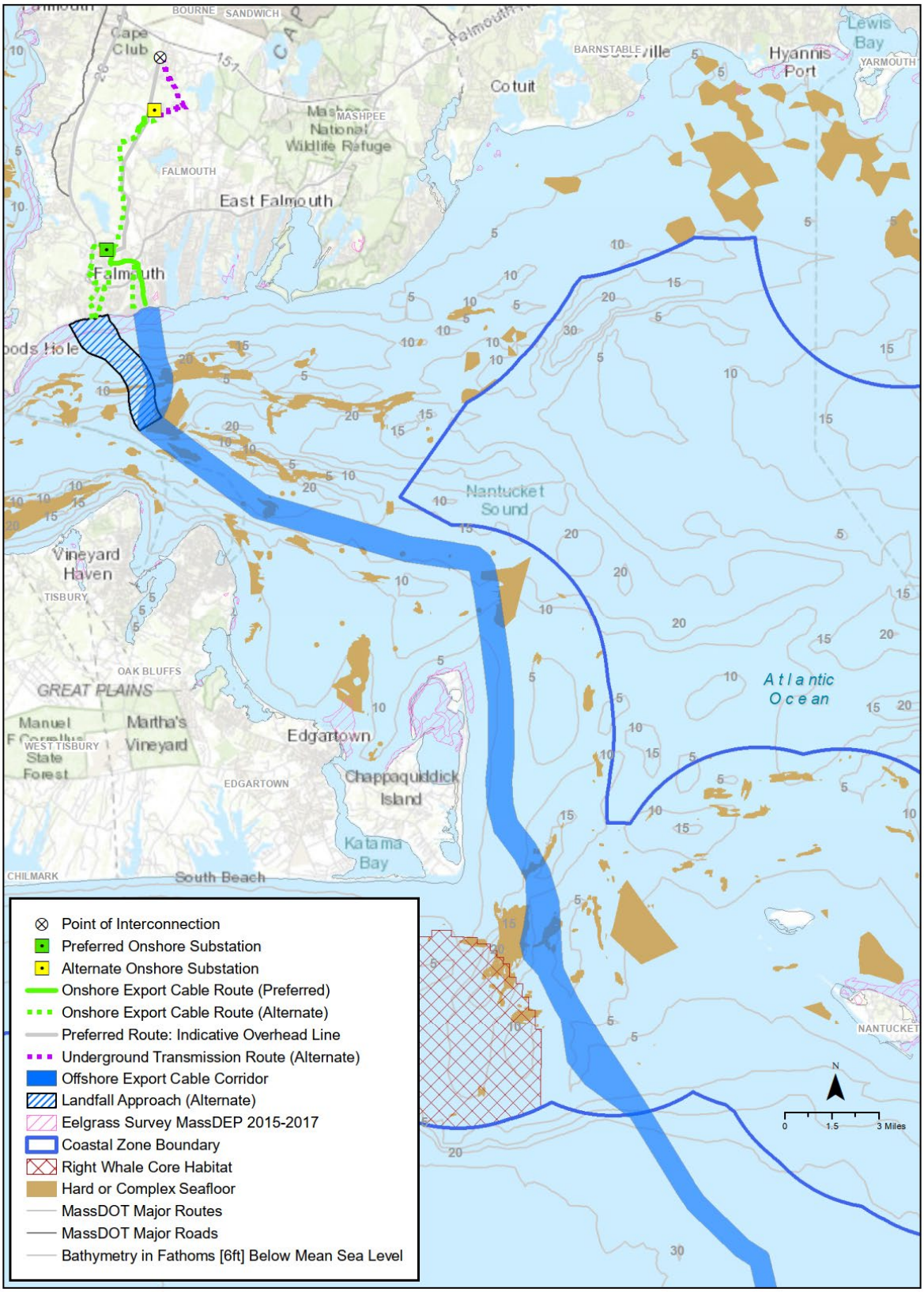
Source: (2): See full citation of source on page Att 1-19

Figure 8. MA OMP Areas of Concern and Areas to Avoid Mapped in the MA Coastal Zone Boundary and Federal Waters



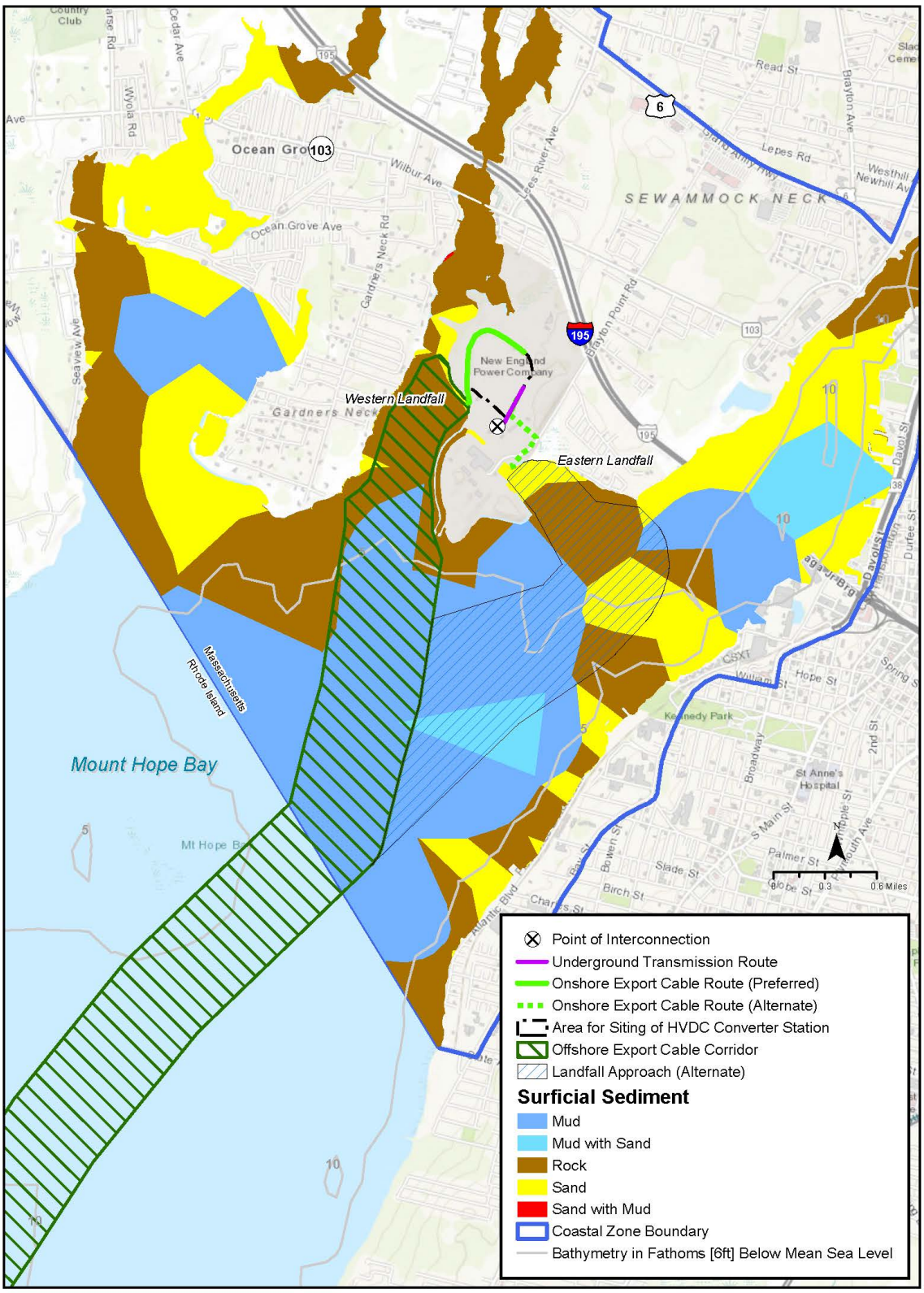
Source: (2): See full citation of source on page Att 1-19

Figure 9. MA OMP Areas of Concern, Areas to Avoid, and Preliminary Transmission Cable Routes within the Massachusetts Coastal Zone Boundary – Brayton Point ECC



Sources: (3), (4): See full citation of sources on page Att 1-19 Notes: Substrate hard/complex seafloor data is from MA CZM. Mayflower Wind field collected-data of substrate type pending. Mayflower Wind collected eelgrass data. See COP Appendix K.

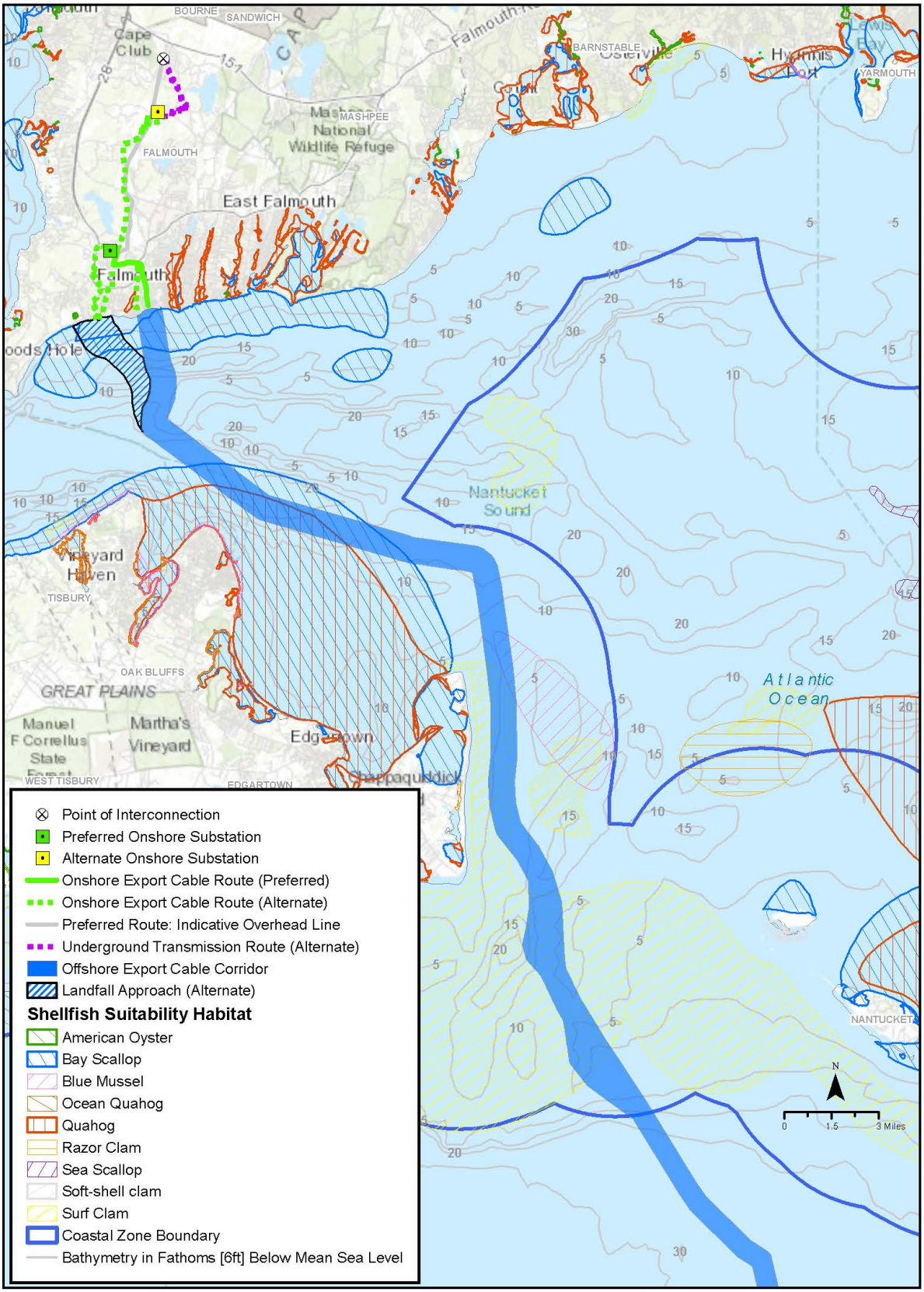
Figure 10. Sensitive Resources and Hard or Complex Seafloor within the Massachusetts Coastal Zone Boundary – Falmouth ECC



Sources: (3), (4): See full citation of sources on page Att 1-19

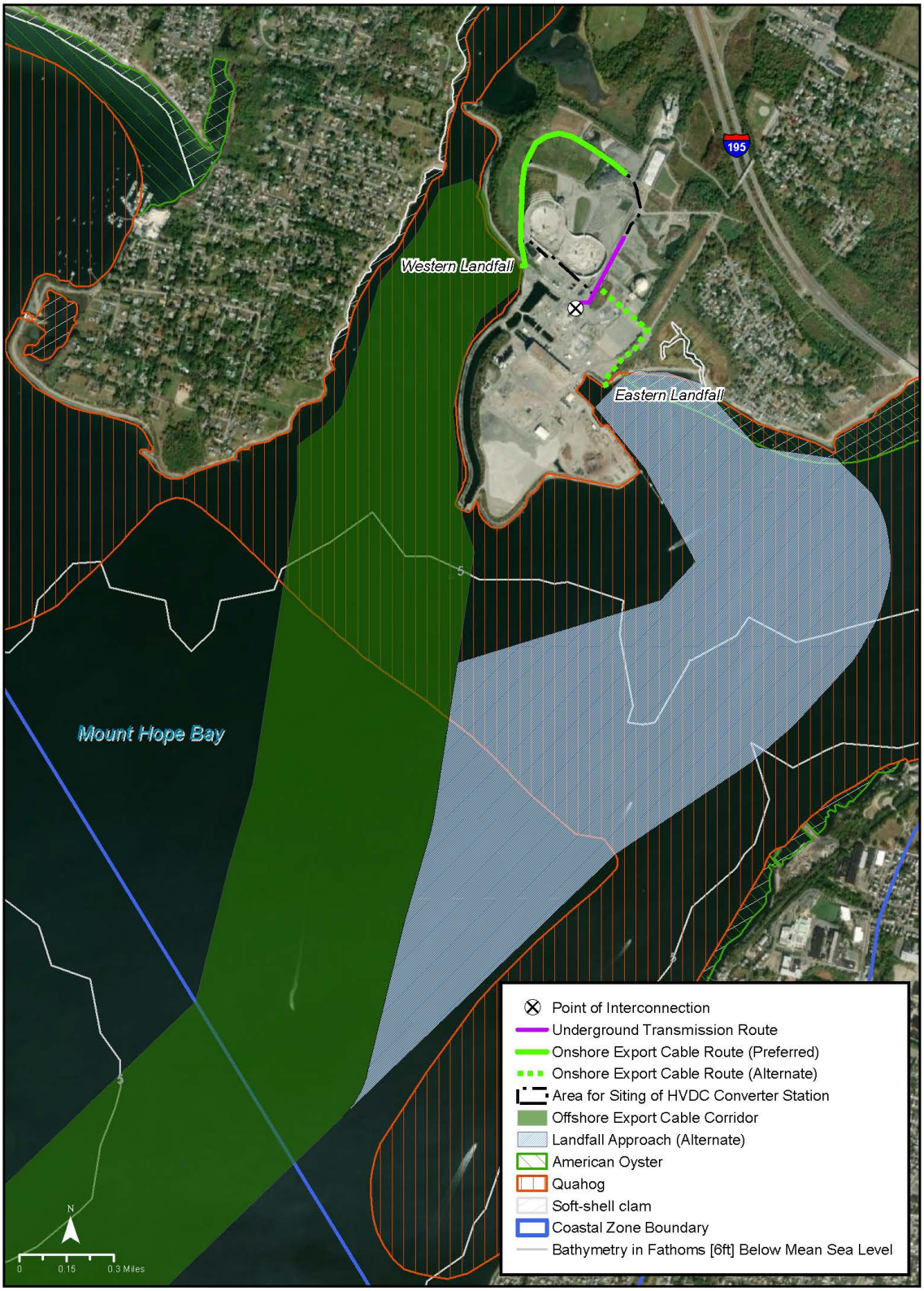
Note: Substrate hard/complex seafloor data is from MA CZM. Mayflower Wind field collected-data of substrate type pending.

Figure 11. Hard or Complex Seafloor within the Massachusetts Coastal Zone Boundary – Brayton Point ECC



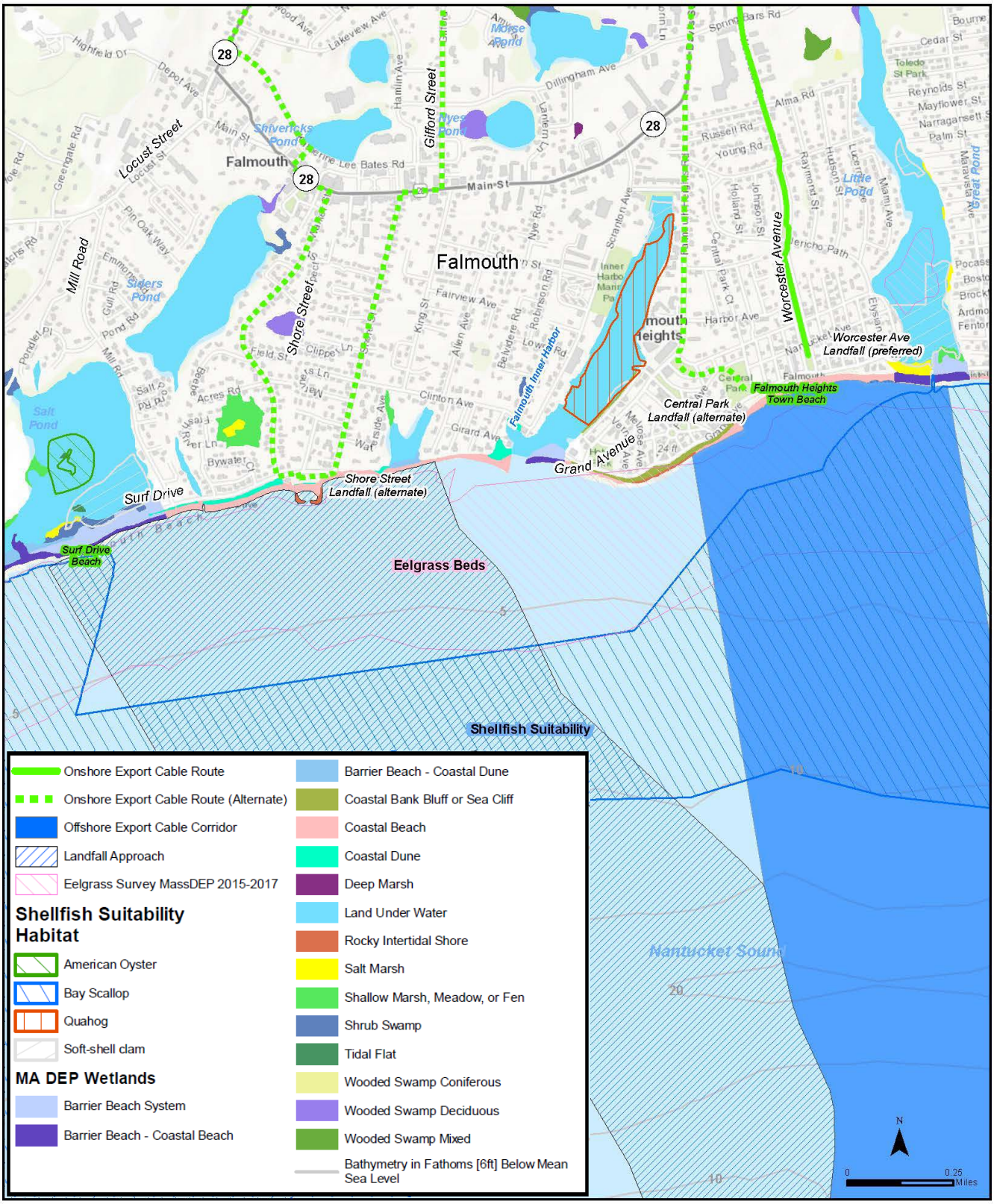
Source: (5): See full citation of source on page Att 1-19

Figure 12. Shellfish Suitability Areas within the Massachusetts Coastal Zone Boundary – Falmouth ECC



Source: (5): See full citation of source on page Att 1-19

Figure 13. Shellfish Suitability Areas within the Massachusetts Coastal Zone Boundary – Brayton Point ECC



Sources: (5), (6), (7): See full citation of sources on page Att 1-19

Note: Mayflower Wind conducted an eelgrass survey in August 2020. See COP Appendix K.

Figure 14. Estimated Location of Sensitive Coastal Habitats, SAV, and Shellfish Suitability Areas at Falmouth Landfall Locations

Source: (7): See full citation of source on page Att 1-19

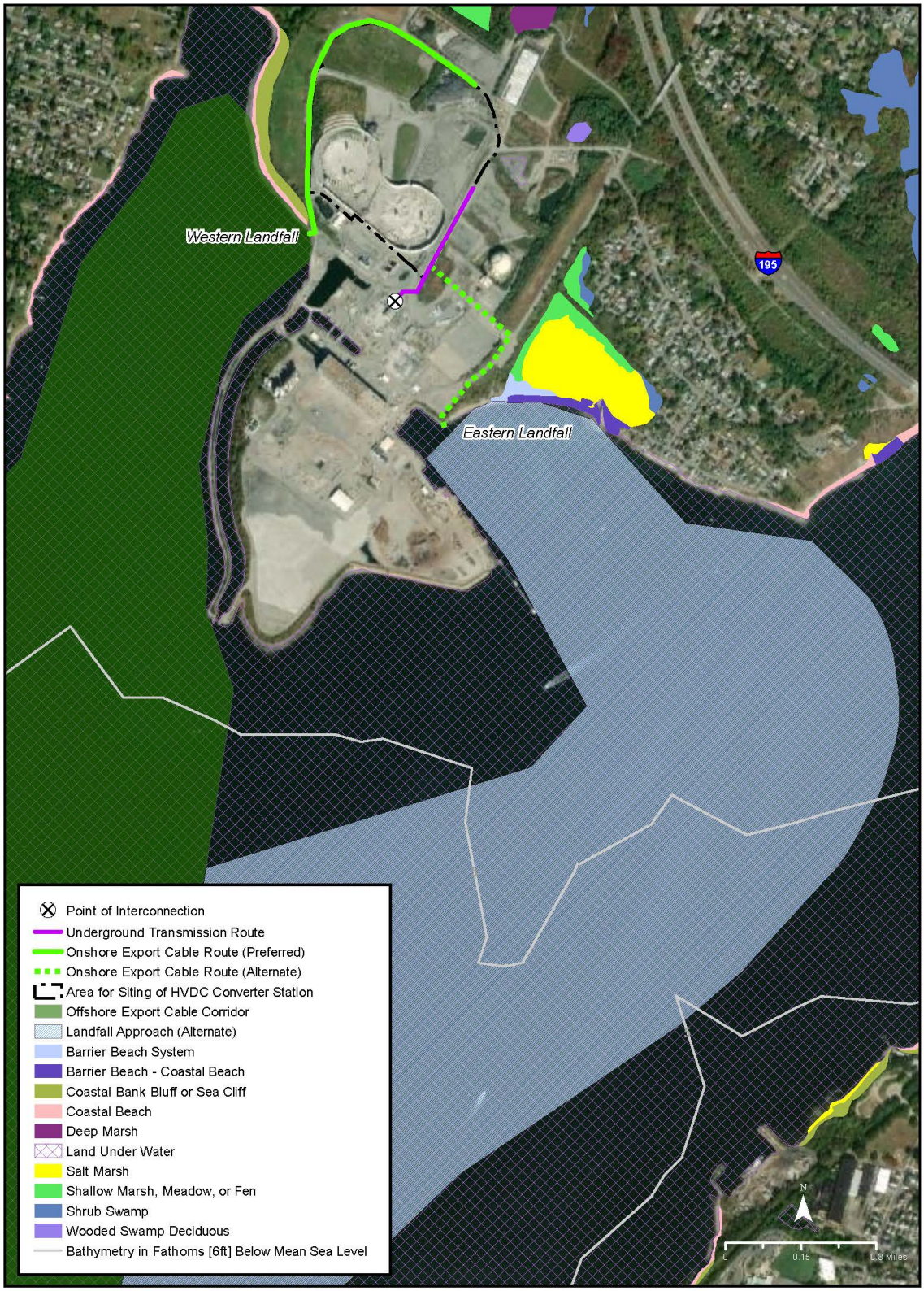
Figure 15. Massachusetts DEP Wetlands and Coastal Resource Areas in the Vicinity of the Shore Street Landfall

Source: (7): See full citation of source on page Att 1-19

Figure 16. Massachusetts DEP Wetlands and Coastal Resource Areas in the Vicinity of the Central Park Landfall

Source: (7): See full citation of source on page Att 1-19

Figure 17. Massachusetts DEP Wetlands and Coastal Resource Areas in the Vicinity of the Worcester Avenue Landfall



Source: (7): See full citation of source on page Att 1-19

Figure 18. Massachusetts DEP Wetlands and Coastal Resource Areas in the Vicinity of Brayton Point Landfall Locations

Data Sources used in Attachment 1 - Figures

1) MA OMP Preliminary Transmission Cable Routes - Massachusetts Office of Coastal Zone Management; Preliminary Areas for Offshore Wind Transmission Cable Corridors, 2015 Massachusetts Ocean Management Plan; Published 1/6/2015; *https://maps.massgis.state.ma.us/czm/moris/metadata/moris_om_prelim_transmsn_cable_poly.htm*

2) MA OMP Areas to Avoid/Areas of Concern – Massachusetts Office of Coastal Zone Management; Areas to Avoid and Areas of Concern for Siting of Potential Offshore Wind Transmission Cables Corridors, 2015 Massachusetts Ocean Management Plan; Published 1/6/2015; *https://maps.massgis.state.ma.us/czm/moris/metadata/moris_om_areas_to_avoid_cables_poly.htm*

3) *MA Dept of CZM; 2015. https://maps.massgis.state.ma.us/czm/moris/metadata/moris_om_hard_complex_seafl_poly.htm, https://maps.massgis.state.ma.us/czm/moris/metadata/moris_om_n_atl_right_w_core_poly.htm, https://maps.massgis.state.ma.us/czm/moris/metadata/moris_om_surficial_sediments_poly.htm*

4) *MassDEP Eelgrass Surveys 2015-2017 – MassDEP; MassDEP Eelgrass 2015-2017; Published 6/2018; https://www.mass.gov/info-details/massgis-data-massdep-eelgrass-2015-2017*

5) *MassGIS, MA Dept of CZM, NOAA; Shellfish Suitability Areas; 05/2011. Shellfish Suitability Areas; 05/2011; https://www.mass.gov/info-details/massgis-data-shellfish-suitability-areas*

6) *MassDEP Eelgrass Surveys 2015-2017 – MassDEP; MassDEP Eelgrass 2015-2017; Published 6/2018; https://www.mass.gov/info-details/massgis-data-massdep-eelgrass-2015-2017*

7) *MassDEP Wetlands – MassDEP; MassDEP Wetlands (2005); Published 2017; https://www.mass.gov/info-details/massgis-data-massdep-wetlands-2005*