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APPENDIX X

Seascape, Landscape, and Visual Impact Assessment

Photo credit: Matt Goldsmith, Equinor

June 2023

Prepared for

Beacon Wind LLC

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Abbreviations and Acronyms

Acronym	Definition
3D	three dimensional
ac	acre(s)
ADLS	Aircraft Detection Lighting System
AGL	above ground level
AGRE	Astoria Gateway for Renewable Energy
AMSL	above mean sea level
AOD	above ordnance datum
APSLVI	Area of Potential Seascape, Landscape and Visual Impact
APVI	Area of Potential Visual Impact
Beacon Wind	Beacon Wind LLC
BLM	Bureau of Land Management
BMP	Best Management Practices
BOEM	Bureau of Ocean Energy Management
BW1	Beacon Wind 1
BW2	Beacon Wind 2
CFR	Code of Federal Regulations
CMP	Coastal Management Program
COP	Construction and Operations Plan
CRMP	Coastal Resources Management Program
CZMA	Coastal Zone Management Act
CZMP	Coastal Zone Management Program
DEM	Digital Elevation Model
DOI	Department of Interior
DSM	Digital Surface Model
EIS	Environmental Impact Statement
EJ	Environmental Justice
EPA	Environmental Protection Agency
EP	Establishment Phase
FAA	Federal Aviation Administration
FEIS	Final Environmental Impact Statement

Acronym	Definition
ft	foot/feet
GIS	Geographic Information System
GLD	geographic location description
ha	hectare(s)
HRVEA	Historic Resources Visual Effects Assessment
HVAC	high voltage alternating current
HVDC	high voltage direct current
IEMA	Institute of Environmental Management and Assessment
ISO-NE	New England ISO
km	kilometer
KOP	Key Observation Point
kV	kilovolt
LCA	Landscape Character Area
LED	light emitting diode
LI	Landscape Institute
LiDAR	Light Detection and Ranging
LNM	Local Notice to Mariners
LWRP	Local Waterfront Revitalization Program
MA	Massachusetts
MAEEA	Massachusetts' Executive Office of Energy and Environmental Affairs
mi	miles
NCDC	National Climate Data Center
NCF	Nantucket Conservation Foundation
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
nm	nautical mile
NRHP	National Register of Historic Places
NWS	National Weather Service
NYCP	New York City Planning
NYCRR	New York Codes, Rules and Regulations
NY ISO	New York Independent System Operator

Acronym	Definition
NYPA	New York Power Authority
NYSDEC	New York State Department of Environmental Conservation
NYSDOS	New York State Department of State
NYSERDA	New York State Energy Research and Development Authority
OCA	Ocean Character Area
OCS	Outer Continental Shelf
OCSLA	Outer Continental Shelf Lands Act
PAPE	Preliminary Area of Potential Effect
PDE	Project Deign Envelope
POI	Point of Interconnection
PSL	Public Service Law
RFPA	Reasonably Foreseeable Planned Actions
RI	Rhode Island
ROD	Record of Decision
SASS	Scenic Areas of Statewide Significance
SCA	Seascape Character Area
SLCA	Seascape and Landscape Character Area
SLIA	Seascape, Landscape Impact Assessment
SLVIA	Seascape, Landscape Visual Impact Assessment
SPS	Significant Peripheral Structures
TCP	Traditional Cultural Property
TOB	Top of Blade
U.S.	United States
USCG	United States Coast Guard
USDA	United States Department of Agriculture
VIA	Visual Impact Assessment
WEA	Wind Energy Area
WRP	Waterfront Revitalization Program

Appendix X Seascape, Landscape, and Visual Impact Assessment

X.1 Introduction

Beacon Wind LLC (Beacon Wind) proposes to construct and operate an offshore wind facility located in the designated Renewable Energy Lease Area OCS-A 0520 (Lease Area). The Lease Area covers approximately 128,811 acres (ac) (52,128 hectares [ha]) and is located approximately 20 statute miles (mi) (17 nautical miles [nm], 32 kilometers [km]) south of Nantucket, Massachusetts and 60 mi (52 nm, 97 km) east of Montauk, New York.

Beacon Wind proposes to develop the entire Lease Area with up to two wind farms, known as Beacon Wind 1 (BW1) and Beacon Wind 2 (BW2) (collectively referred to hereafter as the Project). The individual wind farms within the Lease Area will be electrically isolated and independent from the other via transmission systems that connect two separate offshore substations to two onshore Points of Interconnection (POIs). However, if BW1 and BW2 both interconnect with the New York Independent System Operator (NYISO), the Project will assess the possibility of cable linkage between BW1 and BW2. Each wind farm will gather the power from the associated turbines to a central offshore substation and deliver the generated power via a submarine export cable to an onshore substation for final delivery into the local utility distribution system at the selected POI. The purpose of the Project is to generate renewable electricity from an offshore wind farm(s) located in the Lease Area. The Project addresses the need identified by northeast states to achieve offshore wind goals: New York (9,000 megawatts [MW]), Connecticut (2,000 MW), Rhode Island (up to 1,000 MW), and Massachusetts (5,600 MW).

BW1 will be developed first and constitutes the northern portion of the Lease Area. It covers approximately 56,535 ac (22,879 ha). The BW1 wind farm has a 25-year offtake agreement with the New York State Energy Research and Development Authority (NYSERDA) to deliver the power to its identified POI in Queens, New York.

BW2 spans the southern portion of the Lease Area and will be developed after BW1. It covers approximately 51,611 ac (20,886 ha). Beacon Wind is considering an Overlap Area of 20,665 ac (8,363 ha) that may be included in either wind farm. BW2 is being developed to addresses the need for renewable energy identified by states across the region, including New York, Massachusetts, Rhode Island, and Connecticut. The interconnectedness of the New England transmission system, managed by the New England ISO (ISO-NE), allows a single point of interconnection in the region to deliver offshore wind energy to all of the New England states (Connecticut, Rhode Island, Massachusetts, Vermont, New Hampshire, and Maine). The magnitude of regional targets for offshore wind and the limited amount of developable area, given current and reasonably foreseeable Bureau of Ocean Energy Management (BOEM) leasing activity, demonstrates a need for full-build out of the Lease Area.

BW2 plans to deliver power to identified POIs either in Waterford, Connecticut or Queens, New York. Two locations are under consideration in Queens, New York for the single proposed BW1 landfall and onshore substation facility. These locations include the New York Power Authority (NYPA) site in the northeastern corner of the Astoria power complex and the Astoria Gateway for Renewable Energy

(AGRE) site (which includes AGRE East and AGRE West) situated centrally and on the northern end of the complex adjacent to the East River, both collectively referred to hereafter as NYPA and AGRE. The Queens, New York, onshore substation facility sites that are not used (NYPA, AGRE East, or AGRE West) for BW1 will remain under consideration, in addition to the Waterford, Connecticut, site, for the single proposed BW2 onshore substation facility.

If a project is visible from the shore, a seascape, landscape, and visual impact assessment (SLVIA) is required by the BOEM to support the National Environmental Policy Act (NEPA) review process. The SLVIA has two parts: a seascape and landscape impact assessment (SLIA) and a visual impact assessment (VIA). The inclusion of both an SLIA and VIA in the SLVIA is consistent with NEPA's objective of providing Americans with aesthetically and culturally pleasing surroundings and its requirement to consider all potentially significant impacts of development. This SLVIA has been prepared in general conformance with the BOEM SLVIA methodology as detailed in the "*Assessment of Seascape, Landscape, and Visual Impacts of Offshore Wind Energy Developments on the Outer Continental Shelf of the United States*," (BOEM 2021), hereafter referred to as the "BOEM SLVIA Methodology".

SLIA analyzes and evaluates impacts on both the physical elements and features that make up a landscape or seascape and the aesthetic, perceptual, and experiential aspects of the landscape or seascape that make it distinctive. These impacts affect the "feel," "character," or "sense of place" of an area of landscape or seascape, rather than the composition of a view from a particular place. In SLIA, the impact receptors (the entities that are potentially affected by the Project) are the seascape/landscape itself and its components, both its physical features and its distinctive character.

VIA analyzes and evaluates the impacts on people of adding the Project to views from selected viewpoints. VIA evaluates the change to the composition of the view itself and assesses how the people who are likely to be at that viewpoint may be affected by the change to the view. Enjoyment of a particular view is dependent on the viewer, and in VIA, the impact receptors are people.

X.1.1 Assessment Objectives

SLVIA is an impact assessment tool for identifying and evaluating the likely significance of the effects of change resulting from development on both seascapes and landscapes as environmental resources in their own right, and on the people who experience particular views that they value.

Seascape and landscape as "resources in their own right" refers primarily to seascape and landscape character. As noted in GLVIA3 (LI and IEMA 2013), "landscape results from the interplay of the physical, natural and cultural components of our surroundings. Different combinations of these elements and their spatial distribution create the distinctive character of landscapes in different places, allowing different landscapes to be mapped, analyzed and described. Character is not just about the physical elements and features that make up a landscape, but also embraces the aesthetic, perceptual and experiential aspects of the landscape that make different places distinctive." Assessing seascape and landscape impacts thus means assessing impacts on seascape and landscape character, including both the physical elements and features that make up a landscape or seascape area as well as the aesthetic, perceptual, and experiential aspects of the landscape or seascape area that make it distinctive.

VIA assesses the impacts of the Project on people who would see the Project from particular viewpoints. VIA evaluates how the addition of the visible elements of the Project to the view (or the associated removal or change to existing visual elements) would change the composition of the views, and how those changes would affect people's experience of the view.

The general sequence and approach of the SLVIA is as follows:

- Provides a detailed description of the project, including its location and the project components, any alternatives under consideration, and the Project Design Envelope (PDE). The project description and PDE identifies the possible sources of seascape/landscape and visual impacts of the Project and its alternatives.
- The geographic scopes of the SLIA and VIA are identified, that is, the areas within which seascape and landscape impacts and visual impacts will be assessed, based on the PDE and associated viewshed analyses.
- The descriptions of impact receptors and existing conditions for the SLIA and VIA are presented. The applicable regulatory context for both assessments is identified and described.
- The potential impacts of the Project are identified and described. Potential seascape and landscape impacts are identified separately from visual impacts. After the nature and extent of the potential impacts have been identified, determinations of the corresponding impact levels are made. Impact level refers to the importance of the impact: negligible, minor, moderate, or major. Impacts are evaluated for each impact receptor.
- In light of the impact level findings, mitigation measures that could further reduce project impacts are identified.

The SLVIA report is intended to assist BOEM, cooperating agencies, interested stakeholders, and the general public in their assessment of potential seascape, landscape, and visual impacts of the Project.

X.1.2 Report Organization

This report includes a description of the federal and state regulatory framework (**Section X.2**), a general Project Description and Project components overview (**Section X.3**), and an explanation of the viewshed calculations and the geographic scope of impacts (**Section X.4**). **Section X.5** provides the results of the SLIA for the Offshore and BW1/BW2 Onshore Project Areas, and **Section X.6** provides the results of the VIA for the Offshore and BW1/BW2 Onshore Project Areas . **Section X.7** provides an explanation of the effects of reasonably foreseeable planned actions (RFPA) and **Section X.8** provides mitigation measures for both the Offshore and Onshore project components. References are provided in **Section X.9,** and a Glossary of Terms is available in **Section X.10**.

X.2 Regulatory Framework

The BOEM is the lead federal agency for permitting the Beacon Wind Project. Several other federal, state, and local agencies working collaboratively with BOEM have regulatory jurisdiction for permitting and determining Project-related conditions and compliances. The wind turbines, interarray cables, offshore substations, and a portion of the submarine export cables will be located entirely within federal waters of the United States (U.S.) on the Outer Continental Shelf (OCS). A portion of the submarine export cable route on the OCS crosses the Rhode Island Coastal Resources Management Program's 2018 amended geographic location description (GLD) area.

A portion of the HVDC submarine export cable route for BW1 will be located within New York state waters with the onshore HVAC interconnection cables and onshore substation for BW1 to be located in Queens, New York. A portion of the HVDC submarine export cable route for BW2 will be located within New York and/or Connecticut state waters with the HVAC onshore interconnection cables and onshore substation for BW2 to be located in either Queens, New York or Waterford, Connecticut.

X.2.1 Federal and State

X.2.1.1 National Environmental Policy Act

Under the Outer Continental Shelf Lands Act (OCSLA), the Secretary of the Interior was charged with the administration of mineral exploration and development of the OCS (Title 43, Chapter 29, Subchapter I, Section 1301). In 2005, the OCSLA was amended to authorize the Department of the Interior (DOI) to issue submerged land leases for alternate uses and alternative energy development on the OCS (Section 388 of the Energy Policy Act of 2005). Through this amendment and subsequent delegation by the Secretary of the Interior, BOEM has the authority to issue these leases and regulate activities that occur within them, including the authorization of a Construction and Operations Plan (COP).

As the federal agency charged with OCS lease issuance and review and, as appropriate, authorizing the COP, BOEM will serve as the lead federal agency throughout the permitting process. As part of the COP approval process, BOEM must ensure that any activities approved are safe, conserve natural resources on the OCS, are undertaken in coordination with relevant federal agencies, provide a fair return to the U.S., and are compliant with applicable laws and regulations (30 CFR § 585.102). This includes the NEPA, which requires the preparation of an Environmental Impact Statement (EIS) for any major federal action with the potential to affect the quality of the human environment. Assessments of visual resources are required to support BOEM's NEPA review process for an offshore wind energy lease. BOEM's *Information Guidelines for a Renewable Energy Construction and Operations Plan* (BOEM 2020b) notes that a visual impact assessment may be needed to satisfy requirements under 30 CFR 585.627(a)(6) Archaeological Resources and 30 CFR 585.627(a)(7) Social and Economic Resources and to support the NEPA review process.

This SLVIA has been prepared in general conformance with the BOEM SLVIA Methodology. The BOEM SLVIA Methodology provides guidelines for assessing the potential seascape/landscape and visual impacts of proposed offshore wind energy developments.

X.2.1.2 Coastal Zone Management Programs

The National Coastal Zone Management Program (CZMP) addresses the nation's coastal policies through a voluntary partnership between the federal government and coastal and Great Lakes states and territories. Authorized by the Coastal Zone Management Act (CZMA) of 1972, the program provides the basis for protecting, restoring, and responsibly developing our nation's diverse coastal communities and resources. The CZMA requires that any federal action that has the potential to impact a state's coastal zone or use must be consistent with the state's federally approved coastal zone management plan. Under this federal consistency review, the state's coastal program has the authority to review the proposed action and confirm that it is consistent with the enforceable policies detailed in their plans.

The majority of the BW1 offshore submarine export cable, onshore interconnection cables, and onshore substation facility will be located within the New York coastal zone in addition to jurisdictional

Local Waterfront Revitalization Programs (LWRPs) in the state of New York. The majority of the BW2 offshore submarine export cable, onshore interconnection cables, and onshore substation facility will be located within either the New York or Connecticut coastal zone. A portion of the submarine export cable also crosses the Rhode Island Coastal Resources Management Program's 2018 amended GLD area.

In New York, the enforceable coastal policies are those in the New York Coastal Management Program (CMP), LWRPs, and Long Island Sound CMP. The LWRPs serve as the New York State Department of State (NYSDOS) Office of Planning and Development's primary program for working in partnership with waterfront communities to address local and regional (coastal or inland) waterway issues, improve water quality and natural areas, guide development to areas with adequate infrastructure and services and away from sensitive resources, promote public waterfront access, and provide for redevelopment of underutilized waterfronts. Each community prepares its LWRP in partnership with NYSDOS, and in accordance with the New York State Waterfront Revitalization of Coastal Areas and Inland Waterways Act (New York State Executive Law, Article 42). With local adoption and approval by the New York State Secretary of State, the LWRP allows communities to review local, state and federal actions that could impact the community's goals for its waterfront.

The Connecticut Department of Energy and Environmental Protection (CT DEEP) administers the state's CMP as authorized by the Connecticut Coastal Management Act.

A discussion of the enforceable policies of the New York and Connecticut CMPs with respect to visual resources are included in the sections below. Relevant LWRPs are discussed in **Section X.2.2**. A discussion of the enforceable policies of the Long Island Sound CMP and the Rhode Island Coastal Resources Management Program (CRMP) are excluded here as Project development activities within these GLDs are limited to submarine export cable which has no operational phase visibility.

X.2.1.3 New York State Coastal Management Program: Policy 24 and 25

New York CMP Policy 24 aims to prevent the impairment of Scenic Areas of Statewide Significance (SASS) identified by the CMP (NYSDOS 2017). Policy 24 outlines evaluation methods to determine whether a project would impact these resources and provides guidelines to comply with this policy. In this case, impairments to scenic resources are defined as:

- The irreversible modification of geologic forms; the destruction or removal of vegetation; the modification, destruction, or removal of structures, whenever the geologic forms, vegetation or structures are significant to the scenic quality of an identified resource; and
- The addition of structures, which, because of siting or scale, will reduce identified views or which because of scale, form, or materials will diminish the scenic quality of an identified resource.

There are no SASSs identified within either the Offshore or Onshore viewsheds (see **Section X.1.1** for a discussion of study areas). The closest SASS is the East Hampton SASS, located at the eastern end of Long Island, near Montauk (NYSDOS 2017).

Policy 25 aims to protect, restore, and enhance natural and man-made resources that contribute to the overall scenic quality of the coastal area (NYSDOS 2017). These resources are not identified as SASS, though the same compliance guidelines and evaluation methods in Policy 24 apply. The boundaries of the Long Island Sound CMP are located outside of the Onshore Area of Potential

Seascape Landscape Visual Impact (APSLVI). One LWRP was identified within the Onshore APSLVI and is discussed in **Section X.2.2.2**.

X.2.1.4 Connecticut Coastal Zone Management Program: Policy 83

Connecticut CMP Policy 83 is specific to the siting of electric generation and transmission facilities. The purposes of the policy are: to provide for the balancing of the need for adequate and reliable public utility services at the lowest reasonable cost to consumers with the need to protect the environment and ecology of the state and to minimize damage to scenic, historic, and recreational values; to provide environmental quality standards and criteria for the location, design, construction and operation of facilities for the furnishing of public utility services at least as stringent as the federal environmental quality standards and criteria, and technically sufficient to assure the welfare and protection of the people of the state; to encourage research to develop new and improved methods of generating, storing and transmitting electricity and fuel and of transmitting and receiving television and telecommunications with minimal damage to the environment and other values described above; to require annual forecasts of the demand for electric power, together with identification and advance planning of the facilities needed to supply that demand and to facilitate local, regional, state-wide and interstate planning to implement the foregoing purposes.

The BW2 POI and Waterford, Connecticut onshore substation facility are consistent with this policy to the extent applicable as they are associated with a responsibly sited renewable and sustainable offshore wind energy source. The proposed facilities would constitute infrastructure improvements and connecting renewable energy in Waterford will strengthen the state's energy grid and will help to advance Connecticut's renewable energy goals.

X.2.1.5 Article VII of the New York Public Service Law

The wind turbines and offshore substations will be located entirely within federal waters of the U.S. on the OCS and are under the jurisdiction of BOEM. Portions of the submarine export cables, the onshore export cables, interconnection cables, and one or both onshore substation facilities will be located in the State of New York. In the State of New York, the Public Service Law (PSL) defines a major electric transmission facility as any project "with a design capacity of 100 kilovolts (kV) or more extending for at least 10 mi, or 125 kV and over, extending a distance of one mile or more". As the proposed transmission system connecting the offshore wind farm to the interconnecting onshore substation facility meets this definition, the Project is required to submit an application for a major electric transmission line, as governed by the Article VII process described in 16 New York Codes, Rules, and Regulations (NYCRR) Part 86 and 88. The Article VII process is the primary state environmental review and approval for the Project.

As required by Article VII of the PSL and its implementing regulations at 16 NYCRR §§ 86 and 88, the components of a major electric transmission system must be evaluated for potential impacts to visual resources. This review of visual impacts under Article VII is typically conducted in accordance with the New York State Department of Environmental Conservation (NYSDEC) Program Policy DEP-00-2: *Assessing and Mitigating Visual Impacts* (NYSDEC 2019).

X.2.2 Local Land Use Plans and Guidance

X.2.2.1 Vision 2020: New York City Comprehensive Waterfront Plan

The Vision 2020: New York City Comprehensive Waterfront Plan, released every ten years, provides guidance on expanding the use of New York City waterfront areas for parks, housing, and economic development and opening up the waterways for transportation, recreation, and natural habitat. The plan provides citywide policies and site-specific recommendations and is organized into eight overarching goals with strategies for achieving them. Goals associated with enhancing visual and scenic resources include:

- Goal 1: Expand public access to the waterfront and waterways on public and private property for all New Yorkers and visitors alike. Parks, piers, esplanades, beaches, and other kinds of publicly accessible spaces on the shoreline provide opportunities for recreation, relaxation, sightseeing, and waterfront events. The City has dramatically expanded publicly accessible waterfront space since 1992, and it plans to secure even more waterfront access, taking fuller advantage of New York's unique geography and allowing residents and visitors to experience our city as a waterfront metropolis. Not only do we want more places where people can reach the water's edge, we also seek additional spots where people can gain access to the water itself.
- Goal 6: Enhance the public experience of the waterways that surround New York – Our Blue Network. Our waterways are a great resource, and Vision 2020 proposes to better connect people with them—physically, visually, and culturally. Increasing waterborne transportation, promoting water recreation, and creating the waterfront infrastructure needed for events, cultural activities, and educational programs will allow residents and visitors to engage more fully with the Blue Network and help New York realize its potential as a great waterfront city.

X.2.2.2 New York City Waterfront Revitalization Program

The New York City Waterfront Revitalization Program (WRP) (New York City Planning [NYCP] 2016) establishes the City's policies for waterfront planning, preservation, and development projects to ensure consistency over the long term. The goal of the WRP is to maximize the benefits derived from economic development, environmental conservation, and public use of the waterfront, while minimizing any potential conflicts among these objectives (NYCP 2016). The WRP includes policies that are intended to protect and enhance scenic resources:

- Policy Nine: Protect scenic resources that contribute to the visual quality of the New York City coastal area;
- Policy 9.1: Protect and improve visual quality associated with New York City's urban context and the historic and working waterfront;
    - Ensure that new buildings and other structures are compatible with and add interest to existing scenic elements, such as landmarks, maritime industry, recreational boating facilities, natural features, topography, landforms, and the botanic environment. Among the measures that may be considered are grouping or orienting structures to preserve open space and maximize views to and from the coast and incorporating sound existing structures into development where harmonious with their surroundings;
    - Where feasible and practicable, provide views of visually interesting elements of water dependent uses;
    - New development should be compatible with the scenic elements defining the character of the area. The New York City Zoning Resolution provides standards for waterfront landscaping;

- Preserve existing vegetation or establish new vegetation where necessary to enhance scenic quality;
- Minimize introduction of uses that would be discordant with existing scenic elements, and screen unattractive aspects of uses that detract from the visual quality of nearby public parks and waterfront open spaces; and
    - Provide public viewing at and interpretive signage of industrial uses where compatible and appropriate.

X.3 Project Description

X.3.1 Project Overview

The Beacon Wind Lease Area covers approximately 128,811 ac (52,128 ha) and is located approximately 20 statute mi (17 nm, 32 km) south of Nantucket, Massachusetts and 60 mi (52 nm, 97 km) east of Montauk, New York. Beacon Wind proposes to develop the entire Lease Area with up to two individual wind farms, known as BW1 and BW2.

BW1 will be developed first and constitutes the northern portion of the Lease Area. It covers approximately 56,835 ac (22,879 ha). The BW1 wind farm has a 25-year offtake agreement with the NYSERDA to deliver the power to its identified POI in Queens, New York.

BW2 spans the southern portion of the Lease Area and will be developed after BW1. It covers approximately 51,611 ac (20,886 ha). Beacon Wind is considering an Overlap Area of 20,665 ac (8,363 ha) that may be included in either wind farm.

BW2 plans to deliver power to identified POIs either in Waterford, Connecticut or Queens, New York. Two locations are under consideration in Queens, New York for the single proposed BW1 landfall and onshore substation facility. These locations include the NYPA site in the northeastern corner of the Astoria power complex and the AGRE site (which includes AGRE East and AGRE West) situated centrally and on the northern end of the complex adjacent to the East River. The Queens, New York, onshore substation facility sites that are not used (NYPA, AGRE East, or AGRE West) for BW1 will remain under consideration, in addition to the Waterford, Connecticut, site, for the single proposed BW2 onshore substation facility. A BW1 and BW2 overview is shown in **Figure X.3-1**. The BW1 and BW2 Onshore Project Areas in Queens, New York are shown in **Figure X.3-2** and the BW2 Onshore Project Area in Waterford, Connecticut is shown in **Figure X.3-3**.

This section describes the location and infrastructure currently under consideration within the PDE. The PDE represents “a reasonable range of project designs” associated with the various components of the Project. The primary goal of applying a design envelope is to allow for meaningful assessments by the jurisdictional agencies of the proposed project elements and activities while concurrently providing the Leaseholder reasonable flexibility to make prudent development and design decisions prior to construction. The maximum design parameters in the PDE were utilized as the basis of the viewshed analysis, visual simulations, and the visual effects analysis contained in this VIA.

FIGURE X.3-1. PROJECT OVERVIEW

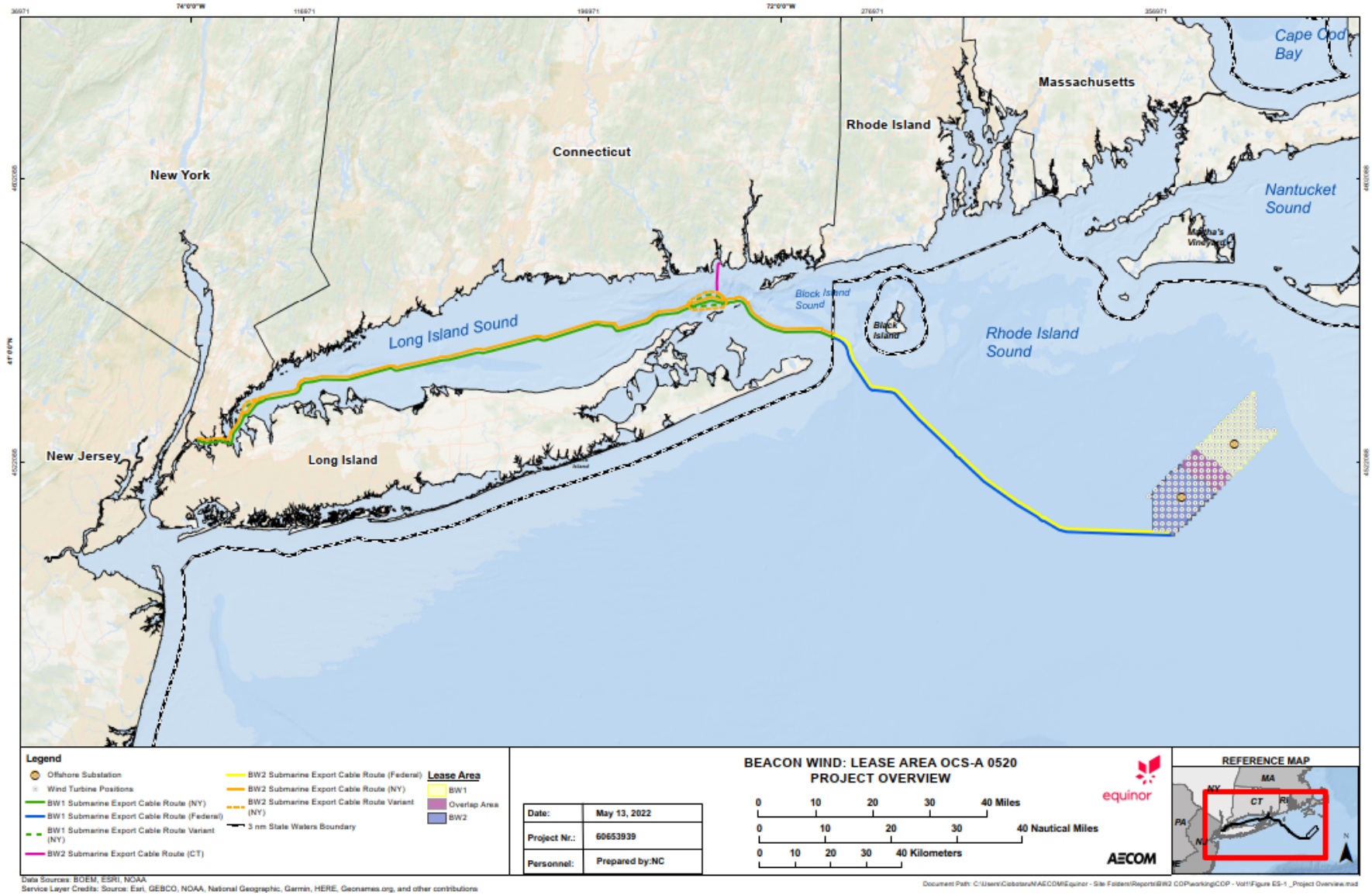


FIGURE X.3-2. LOCATION OF BEACON WIND ONSHORE PROJECT AREA – QUEENS, NEW YORK

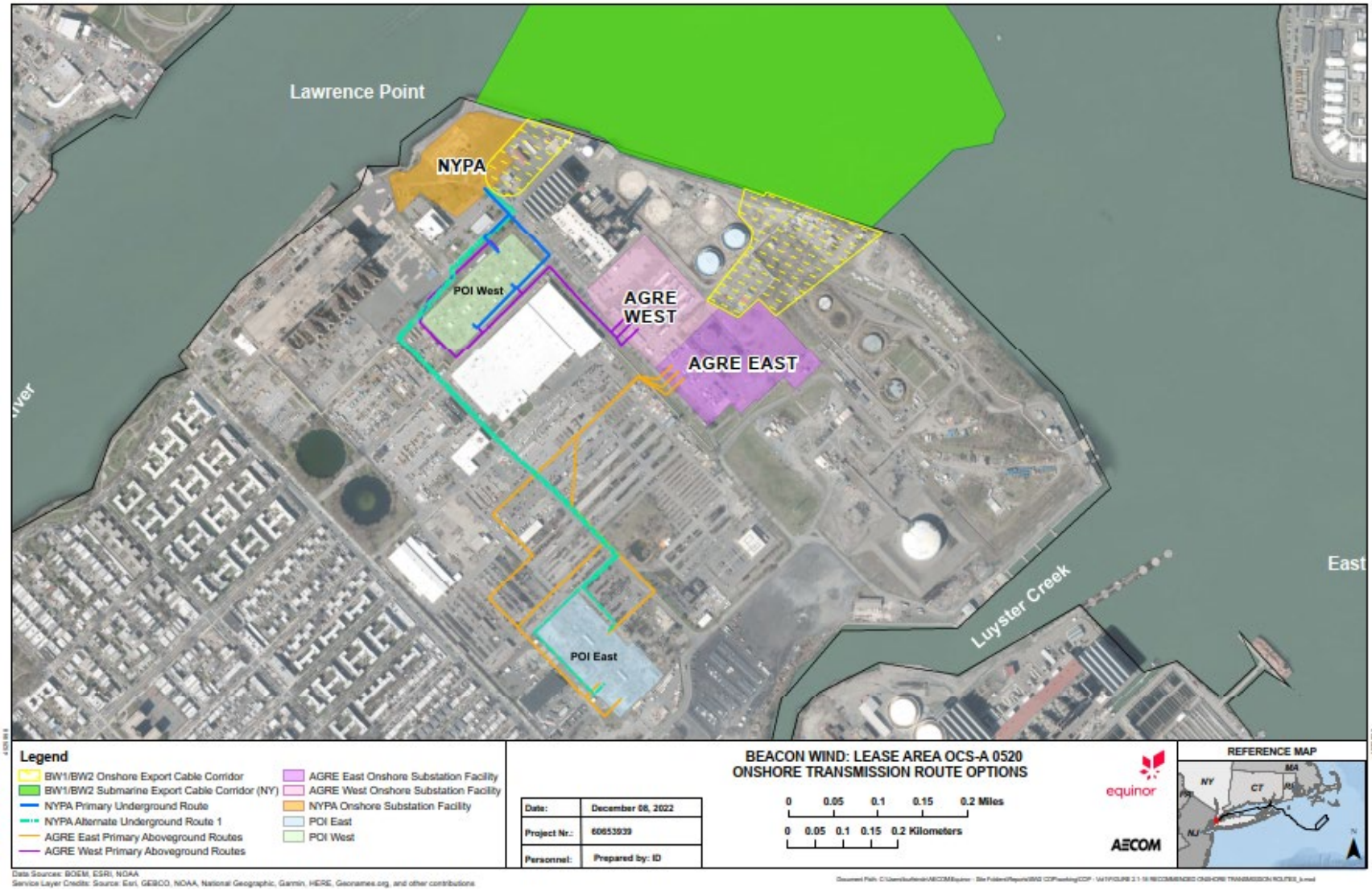
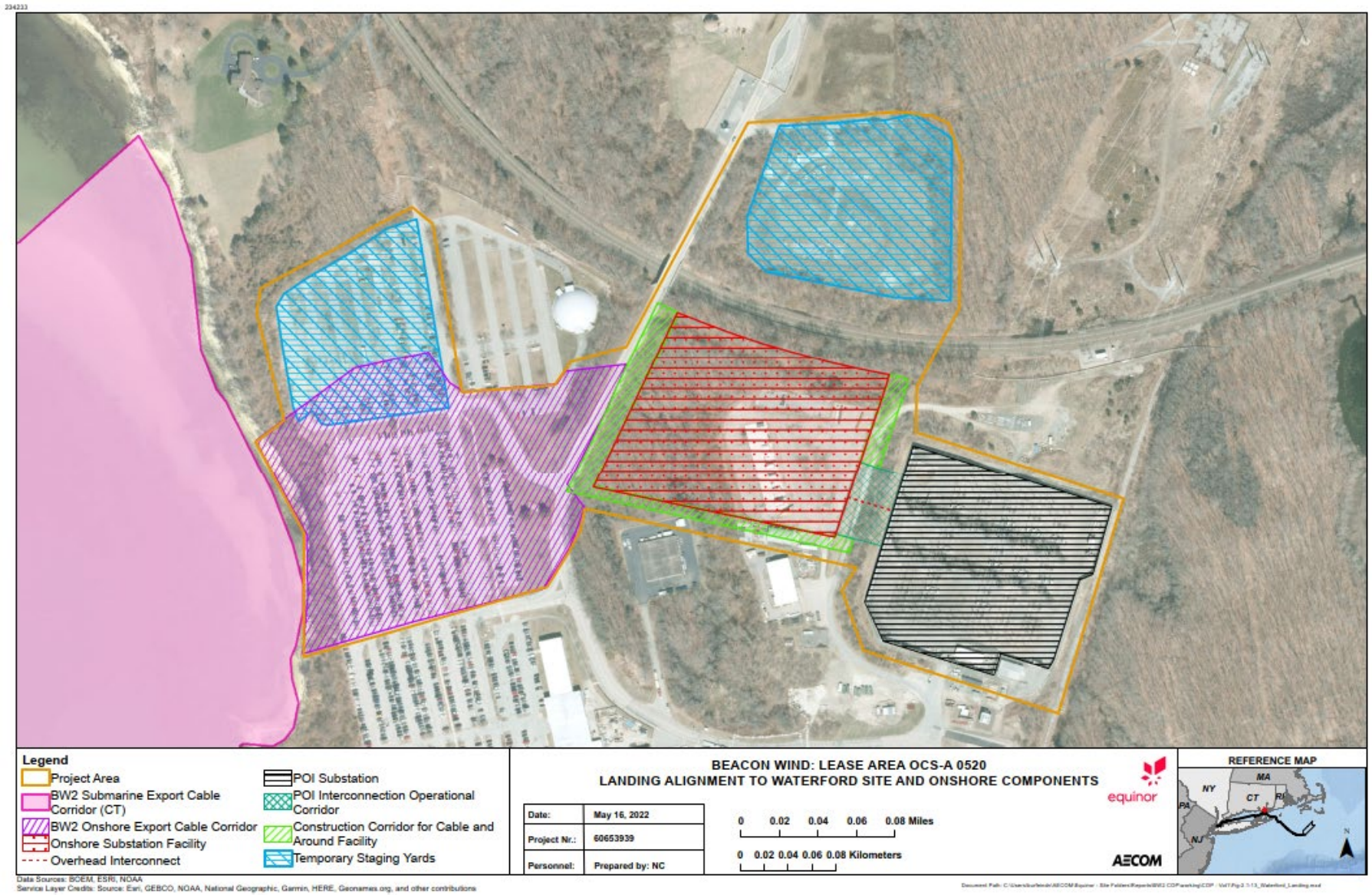


FIGURE X.3-3. LOCATION OF BEACON WIND ONSHORE PROJECT AREA – WATERFORD, CONNECTICUT



X.3.2 Offshore Project Design Assumptions

Offshore components of the Project will consist of up to 155 wind turbines[1] and up to two offshore substation facilities for a total of up to 157 foundations. In addition, there will be up to 324 nm (600 km)[2] of interarray cable, all of which will be located in federal waters within the Lease Area. Renewable energy produced in the Lease Area will be delivered onshore via:

- BW1: HVDC submarine export cable route to the State of New York:
  - Up to 202 nm (375 km) to the BW1 landfall in Queens, New York, of which 87 nm (162 km) is in federal waters and 115 nm (213 km) is in state waters; and
- BW2: HVDC submarine export cable route to a landfall location in the State of New York or State of Connecticut:
  - Up to 202 nm (375 km) to the BW2 landfall in Queens, New York, of which 87 nm (162 km) is in federal waters and 115 nm (213 km) is in New York state waters; or
  - Up to 113 nm (209 km) to the BW2 landfall in Waterford, Connecticut, of which 87 nm (162 km) is in federal waters, 26 nm (48 km) is in state waters with 21 nm (39 km) in New York state waters and 5 nm (9 km) in Connecticut state waters.

The maximum design parameters in the PDE were utilized as the basis of the viewshed analysis, visual simulations, and the impacts analysis in the Offshore SLIA and VIA. The PDE utilized in the Offshore SLIA and VIA consists of the components and design parameters presented in **Table X.3-1** and **Figure X.3-4** below.

TABLE X.3-1. MAXIMUM WIND TURBINE DESIGN ASSUMPTIONS

Design Parameter	Maximum Representative Wind Turbine
Maximum number of wind turbines	155
Rotor Diameter	984 ft (300 m)
Hub Height above Highest Astronomical Tide (HAT)	591 ft (180 m)
Hub Height above Mean Sea Level (MSL)	594 ft (181 m)
Upper Blade Tip above HAT	1,083 ft (330 m)
Upper Blade Tip above MSL	1,086 ft (331 m)
Lower Blade Tip above HAT	85 – 125 ft (26 – 38 m)
Lower Blade Tip above MSL	88 – 128 ft (25 – 37 m)
Marking and Lighting	The wind turbines will be lit and marked in accordance with Federal Aviation Administration (FAA) and USCG requirements for aviation and navigation obstruction lighting, respectively, including USCG First District Local Notice to Mariners (LNM) entry 44-20. Beacon Wind will light and mark the wind turbines in accordance with FAA Advisory

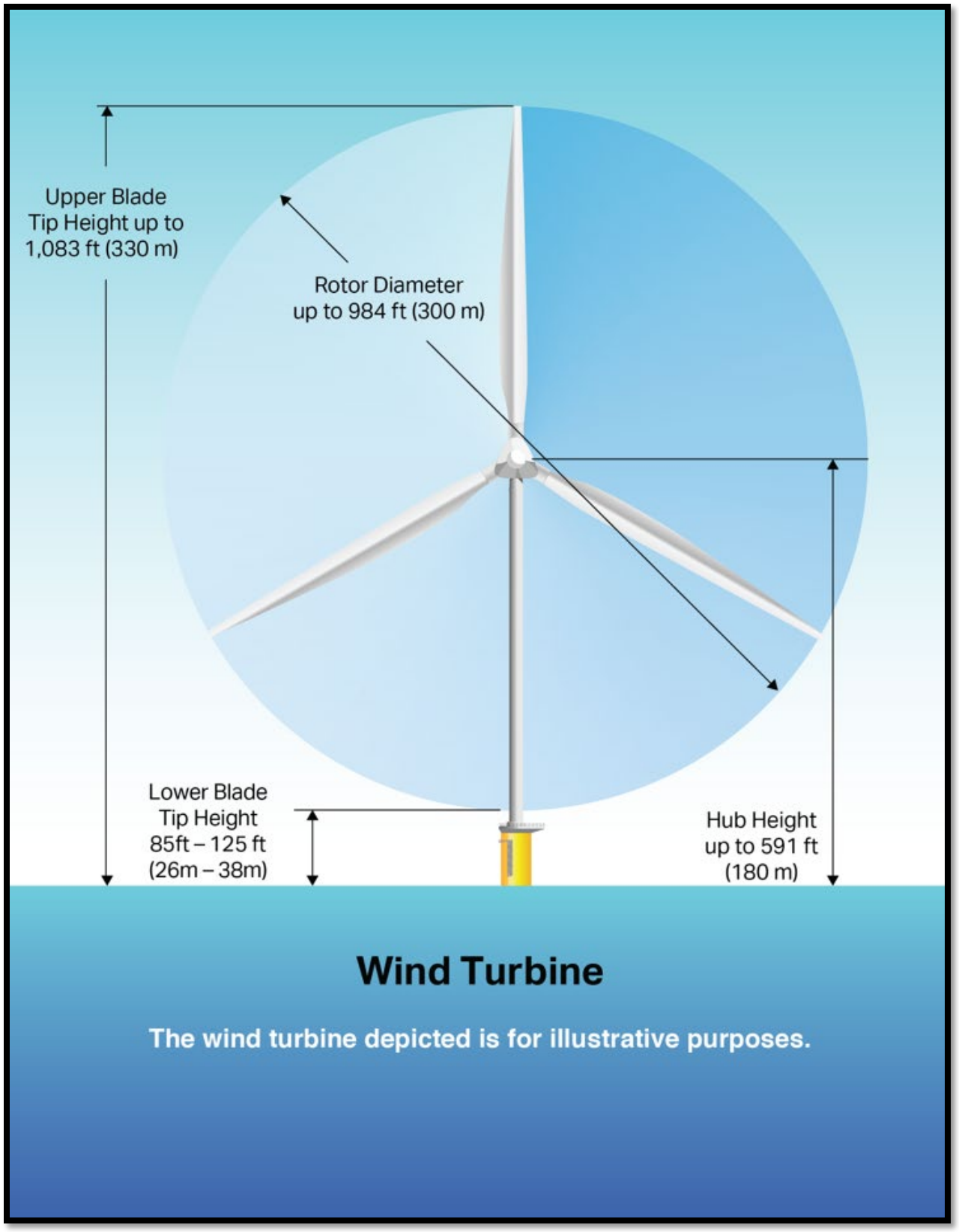
[1] Assuming full build-out of the Lease Area with use of all available locations under the 1x1 nm (1.9x1.9 km) layout described in the United States Coast Guard (USCG) Massachusetts and Rhode Island Port Access Route Study (MARIPARS) report, regardless of wind turbine size. The number of wind turbines for the Project will not exceed 155. BW1 will include between 61 and 94 wind turbines and BW2 will include between 61 and 94 wind turbines. The Overlap Area includes 33 wind turbines that could be incorporated into either BW1 or BW2.

[2] Assuming up to 162 nm (300 km) for BW1 and up to 162 nm (300 km) for BW2.

Design Parameter	Maximum Representative Wind Turbine
	Circular 70/7460-1L, BOEM's Guidelines for Providing Information on Lighting and Marking of Structures Supporting Renewable Energy Development (BOEM 2021b, and *IALA to Navigation and Lighthouse Authorities Recommendation O-139 on The Marking of Man-Made Offshore Structures* (IALA 2013), as applicable and detailed below, unless a variance is approved by the applicable agency prior to construction. • The foundation structures will be painted yellow from the level of HAT up to a minimum of 50 ft (15.3 m). Paint colors for blades and towers will follow BOEM visual guidelines (BOEM 2021b). • Wind turbines above the yellow demarcation line for navigational aids will be painted no lighter than RAL 9010 Pure White and no darker than RAL 7035 Light Grey[3]. • The wind turbines in excess of 699 ft (213 m) aboveground level (AGL) level will require two synchronized flashing red lights (with medium intensity L-864 and light emitting diode [LED] color between 800 and 900 nanometers) placed on the back of the nacelle on opposite sides. • Additionally, mid-level lighting (model L-810) will be required at a half-way point on the tower between the top of the nacelle and ground level. Mid-level lighting should be flashing red lights configured to flash in unison with the nacelle lighting and should contain a minimum of three of the L-810 lights. In accordance with IALA 0-139 and USCG Local Notice to Mariners (LNM) entry 33-20 (USCG 2020), the following will also apply: • Lighting will be located on turbine structures and visible throughout a 360-degree arc from the water's surface. • Corner Towers/Significant Peripheral Structures (SPSs) will have quick flashing yellow lights (QY) energized at a 5-nm (9.3-km) range. • Outer Boundary Towers will have yellow 2.5-second lights (FL Y 2.5s) energized at 3 nm (5.6 km) range. • Interior Towers will have yellow 6-second or yellow 10-second lights (FL Y 6/FL Y 10) energized at a 2-nm (3.7-km) range and the lights should be synchronized by their structure location within the field of structures.

[3] The wind turbines and towers have been simulated in RAL 9010 Pure White which was the basis for the evaluation of visual impacts in the VIA. As discussed with BOEM, the RAL 9010 color treatment is considered a conservative worst-case scenario with respect to visual contrast and has been utilized in the VIA to provide flexibility for final selection of a wind turbine supplier for the Project.

FIGURE X.3-4. WIND TURBINE SCHEMATIC DRAWING WITH RELEVANT MEASUREMENTS



X.3.3 Onshore Project Design Assumptions

The onshore components of the Project will include the landfall areas, HVDC onshore cables, HVDC converter stations, and high-voltage alternating-current (HVAC) interconnection cables:

- Two export cable landfall areas:
  - One export cable landfall area in Queens, New York for BW1; and
  - One export cable landfall area in Queens, New York or Waterford, Connecticut for BW2.
- Onshore export and interconnection cables, consisting of two routes:
  - One HVDC onshore export cable route of approximately 2,000 ft (600 m) and up to 0.93 mi (1.5 km) of HVAC interconnection cable route in Queens, New York for BW1; and
  - One HVDC onshore export cable route and HVAC interconnection cable route selected from two potential locations for BW2 in Queens, New York [up to 4,921 ft (1,500 m)] or Waterford, Connecticut [up to 2,000 ft (600 m)].
- Two onshore substation facilities:
  - One onshore substation facility (inclusive of an onshore converter station and onshore substation) in Queens, New York for BW1; and
  - One onshore substation facility (inclusive of an onshore converter station and onshore substation) in Queens, New York or Waterford, Connecticut.

X.3.3.1.1 BW1 and BW2 Onshore Substation Facilities – Queens, New York

The maximum design parameters of the onshore substation and HVAC interconnection facilities contained in the PDE were utilized as the basis of the viewshed analysis, visual simulations, and the impacts analysis in the New York Onshore SLIA and VIA. The PDE utilized in the New York Onshore SLVIA consists of the components and design parameters presented in **Table X.3-2** below.

TABLE X.3-2. BW1 AND BW2 ONSHORE DESIGN ASSUMPTIONS – QUEENS, NEW YORK

Project Attribute	Description
Onshore Substation Facilities	• Two locations under consideration: AGRE and NYPA. • Up to a 7 ac (2.8 ha) per onshore substation facility. • Onshore converter building and control buildings with a maximum height of 87 ft (26.5 m) above existing ground level; and • Maximum height of onshore substation facility equipment (e.g., aerials, lightning protection) 87 ft (26.5 m) above existing ground level. • Onshore substation facility buildings (converter and control buildings) to be steel framed and finished with aluminium cladding[4]. • Fencing to be composed of woven galvanized steel on steel posts approximately 8 ft (2.4 m) above existing ground level. • Outdoor LED flood lights, perimeter lights, and security lights.
Queens Interconnection Cables	• Two conductor bundles per phase, six phase conductors per circuit with a total of three circuits each for BW1 and BW2 (18 conductors total for three circuits)

[4] Beacon Wind will work with the municipal land use authorities and original equipment manufacturers on the layout and design of substation elements and the finishing of structures in a color that is acceptable to municipal land use authorities and in compliance with the substantive provisions of applicable zoning and building codes.

Project Attribute	Description
	• The base case for the HVAC onshore outgoing circuits from the AGRE onshore substation facility to the Astoria East and West POIs is overhead installation but could potentially be considered for underground installation. • The total length of onshore interconnection cable is 4,921 ft (1,500 m) • Up to 59 steel transmission structures each with a maximum height of 100 ft (30.5 m) above existing ground level • The base case for HVAC interconnection circuits between the NYPA site and the POIs is underground.

The Astoria power complex in Queens, New York was selected as the landfall and POI location for the BW1 and/or BW2 Project. Two onshore substation facility locations and two possible POI substation locations within the Astoria power complex are under consideration. Both potential POI substations are owned and operated by Consolidated Edison and are referred to Astoria East and Astoria West. The onshore substation facility locations are referred to as NYPA and AGRE (AGRE East and AGRE West), as depicted in **Figure X.3-2** and as summarized in **Table X.3-3** below. The Queens, New York, onshore substation facility sites that are not used (NYPA, AGRE East, or AGRE West) for BW1 will remain under consideration, in addition to the Waterford, Connecticut, site, for the single proposed BW2 onshore substation facility, therefore potentially siting two onshore substation facilities within this power complex.

TABLE X.3-3. BW1 AND BW2 ONSHORE SUBSTATION FACILITY SITE DESCRIPTIONS – QUEENS, NEW YORK

Substation Option	Site Description
AGRE	The AGRE location consists of two sites: AGRE East and AGRE West. The AGRE site is situated centrally and on the northern end of the Astoria power complex. The AGRE location is bounded to the west by the NYPA operated Eugene W. Zeltman Power Project and to the north by the EG Tank Farm site. Existing land use at the AGRE location includes an existing power generation plant that would be demolished prior to construction. The existing land use at the AGRE site and the surrounding land uses are compatible with use for a new onshore substation facility, and therefore the location is not expected to introduce significant seascape, landscape, or visual impact. The available AGRE parcel is approximately 16 ac (6.5 ha) with AGRE East encompassing approximately 8.9 ac (6.4 ha) and AGRE West encompassing approximately 7.1 ac (2.9 (ha). Both the AGRE East and AGRE West are large enough to accommodate the onshore substation facility for BW1 and BW2 and peripheral equipment. The location itself is relatively flat and minor ground preparation work would be required prior to construction.
NYPA	The NYPA site is located at the northern edge of the Astoria power complex with just over 1,000 ft (305 m) of shoreline along the East River. This site is bound by the NYPA administration building to the southwest, NYPA electric plants to the southwest, and the riprap coastlines to the northwest and northeast. The available parcel is approximately 7.7 ac (3.1 ha), which is sufficient to accommodate the onshore substation facility and peripheral equipment. The existing site is relatively flat and minimum ground preparation work or demolition work would be required prior to construction. On the opposite shore of the East River, on and adjacent to Randall's Island, is a recreation area with sports fields and an area of industrial uses, including buildings for the New York Post, a Wastewater Treatment Plant, and commercial waste, recycling and environmental services.

The base case scenarios for the Queens, New York HVAC onshore interconnection circuits evaluated in this SLVIA and as depicted in visual simulations are as follows:

- **Scenario 1**: BW1 comprised of overhead interconnection between AGRE West onshore substation facility and the Astoria West POI; and BW2 comprised of overhead interconnection between AGRE East onshore substation facility and the Astoria East POI.
- **Scenario 2**: BW1 comprised of underground interconnection between NYPA onshore substation facility and Astoria West POI; and BW2 comprised of overhead interconnection between AGRE East onshore substation facility and the Astoria East POI.

X.3.3.1.2 BW2 Onshore Substation Facility – Waterford, Connecticut

The maximum design parameters of the onshore substation and HVAC interconnection facilities contained in the PDE were utilized as the basis of the viewshed analysis, visual simulations, and the impacts analysis in the Connecticut Onshore SLIA and VIA. The PDE utilized in the Connecticut Onshore SLVIA consists of the components and design parameters presented in **Table X.3-4** below.

TABLE X.3-4. BW2 ONSHORE DESIGN ASSUMPTIONS

Project Attribute	Description
Waterford, Connecticut Onshore Substation Facility	• Up to a 7 ac (2.8 ha) for the onshore substation facility; • Onshore substation facility and control buildings maximum height of 65 ft (19.8 m) above existing ground level; and • Maximum height of onshore substation facility equipment (e.g., aerials, lightning protection) 80 ft (24.4 m) above existing ground level. • Onshore substation facility buildings (converter and control buildings) to be steel framed and finished with aluminum cladding • Fencing to be composed of woven galvanized steel on steel posts approximately 8 ft (2.4 m) above existing ground level • Outdoor LED flood lights, perimeter lights, and security lights
Waterford, Connecticut Interconnection Structures	• One overhead HVAC circuit with two uninsulated conductors per phase • Three (3) single phase steel monopoles a maximum height of 80 ft (24.4 m) above existing ground level

Millstone Point in Waterford, Connecticut and the Waterford power complex property was selected as a potential landfall and POI location for BW2. The Waterford, Connecticut POI is within an existing power complex situated on a peninsula with Niantic Bay immediately to the west where the property edge is characterized by a rocky shoreline with small areas of sandy beach. To the east is a small area of forested land and beyond a small residential area situated along Jordan Cove. To the north is undeveloped forest and then pockets of residential development. There is one POI proposed for interconnection that is immediately adjacent to the onshore substation facility: Eversource Substation. The location of the proposed onshore substation facility site is depicted in **Table X.3-4** and **Figure X.3-3**.

The area immediately surrounding the onshore substation facility site is nearly all developed at a high density, associated with the power complex, and relatively flat. However, less than 0.5 mi (0.8 km) from the site, the land cover changes dramatically, with deciduous forest and wetlands covering the majority of the area with the exception of scattered residential developments. The Niantic Bay waterbody lies to the west of the site, connecting to the Niantic River to the north of the site, the Long Island Sound to the south, and Jordan Cove to the east. Just north and adjacent to the site is an existing Amtrak rail line. Approximately 0.3 mi (0.48 km) east of the site lies a concentrated residential community and baseball/softball fields. The available parcel is 7.07 acres (2.9 ha), which is sufficient to accommodate the onshore substation facility and peripheral equipment. Additionally, there will be two temporary staging yards (5.5 ac [2.2 ha] and 4.3 ac [1.7 ha]). Mixed tree and shrub vegetation is present along the edge of Millstone Point and throughout the existing site. There are areas of grassland along roads which run through the power complex. These areas of vegetation are not considered to be of high value in terms of amenity; however, the trees along the coastline provide value to the views towards Millstone Point.

X.4 Viewshed and Geographic Scope of Impacts

The SLVIA requires determining the area of land and sea to be included in the SLIA and the VIA. The primary determinant of the geographic scope of the analyses is visibility of the project components, both offshore and onshore. The primary tool for determining potential project visibility is Geographical Information System (GIS) viewshed analysis.

Given an elevation data set for the area of the analysis, a set target height and location, and a set viewer height and location, the viewshed analysis determines whether a line of sight exists between the viewer and target, taking into consideration topography and other obstructions, such as buildings and vegetation, if they are included in the elevation data. Multiple viewshed analyses were run as part of the SLVIA to determine the locations that might have visibility of all or part of the Project.

The viewshed analyses were performed using GIS tools including Global Mapper and ESRI ArcGIS Pro software with Spatial Analyst extension. Based on the maximum project parameters defined in the PDE (as described in **Section X.3.2**) including maximum wind turbine hub and nacelle heights, wind turbine blade tip heights, and maximum structure heights (substation structures and overhead interconnection poles) associated with the onshore substation facilities (as described in **Section X.3.3**), viewshed analyses were conducted to identify the areas from which project components could theoretically be visible. The viewshed analysis for onshore components (e.g., substation structures and overhead interconnection poles associated with the project) was run separately from the viewshed analysis for the offshore components (wind turbines and electrical service platforms). Viewsheds for the onshore substation facilities treated the structures as polygons rather than points. Separate viewsheds for the offshore components were run for wind turbine nacelle height and maximum blade tip height.

The viewsheds accounted for both curvature of the earth and refraction, using the default values identified in the software. Due to the curvature of the earth's surface, objects viewed on the horizon are not seen in their entirety, because they begin to fall below the visible horizon. Therefore, as the distance from the viewing location to the object continues to increase, less of the object will be visible. **Figure X.4-1** illustrates the influence of the curvature of the earth on visibility for a viewer located at Cisco Beach on Nantucket. Because of the curvature of the earth, no Project component located more than 44.02 mi (70.84 km) from a viewer on Cisco Beach would be visible. The wind turbine hubs would

be completely obscured at a distance of 33.51 mi (53.93 km) from a viewer on Cisco Beach. It is important to note that **Figure X.4-1** is based on the perspective of a viewer at 9 ft (4.4 m) above mean lower low water (MLLW). There is increased potential visibility from viewing locations at higher elevations, creating an increased range of view towards the Project components. When distance from the wind turbines is consistent, viewers at higher elevations will see larger portions of the wind turbines when compared to viewing conditions at beach level.

There are shortcomings to computer-based viewshed analysis and viewshed analyses are not perfectly accurate for a variety of reasons (especially because of limitations in elevation data accuracy). Viewshed analysis does also not account for the impacts of weather or other meteorological and oceanic conditions (see **Section X.4.5**). The viewshed analysis can be used as a predictive screening tool to: determine the geographic extent of Project visibility and needed field reconnaissance; identify affected SLCAs, visually sensitive resources, and KOPs; and to aid in the selection of views for simulations and visual impact analysis.

X.4.1 Offshore ZTV

An important viewshed concept relevant to the SLVIA is the zone of theoretical visibility (ZTV), that is, the viewshed that results from ignoring all screening elements except topography. ZTV viewshed analysis was performed using a digital elevation model (DEM) that provides the elevation of the surface of the earth (and/or a body of water) and does not consider the potential for screening from vegetation, buildings, or other structures. The DEM used in the ZTV viewshed was the United States Geological Survey (USGS) National 3D Elevation Program (3DEP) dataset. Given that vegetation and structure obstructions may significantly reduce visibility in some seascapes/landscapes, the ZTV generally overestimates visibility of the project and can be considered a “worst-case scenario” for project visibility.

In accordance with the BOEM SLVIA Methodology, given that the closest turbine is located less than 43 km (23 nm) from shore, the outer limit of impact analysis for the VIA for daytime impacts was determined by running the DEM viewshed from the top of blade (TOB) tip height of the proposed project turbines until intercepted by terrain (adjusted for viewer height and elevation) or limited by earth. A second viewshed was run from the height of the top of the nacelle of the Project turbines to determine the outer limit of assessment of nighttime impacts. In accordance with the BOEM SLVIA Methodology, neither TOB or nacelle viewsheds shall exceed 74 km (40 nm, 46 mi), so the ZTV was limited to a maximum of 46 mi from the edge of the Lease Area. The results of the DEM viewshed analysis for the offshore Project components and the resulting ZTV are depicted in **Figure X.4-2**.

The rationale behind this approach is that for projects within 43 km (23 nm) of shore, blade motion is sometimes visible during the day and therefore blade tip height should be considered in determining project visibility. At night, blade movement is not visible but aviation obstruction lighting could be, and therefore the height of the top of the nacelle (where the light is mounted) should be considered in determining project visibility. Beyond 43 km (23 nm), blade motion is not likely to be visible, or if it were, its impacts would be negligible, and the height of the top of the nacelle should be considered in determining project visibility for both daytime and nighttime views.

X.4.2 Offshore APSLVI

A second viewshed model was created for both TOB and nacelle, using high-resolution Light Detection Ranging (LIDAR) point cloud data obtained from the USGS National Map [2013-2014 USGS CMGP

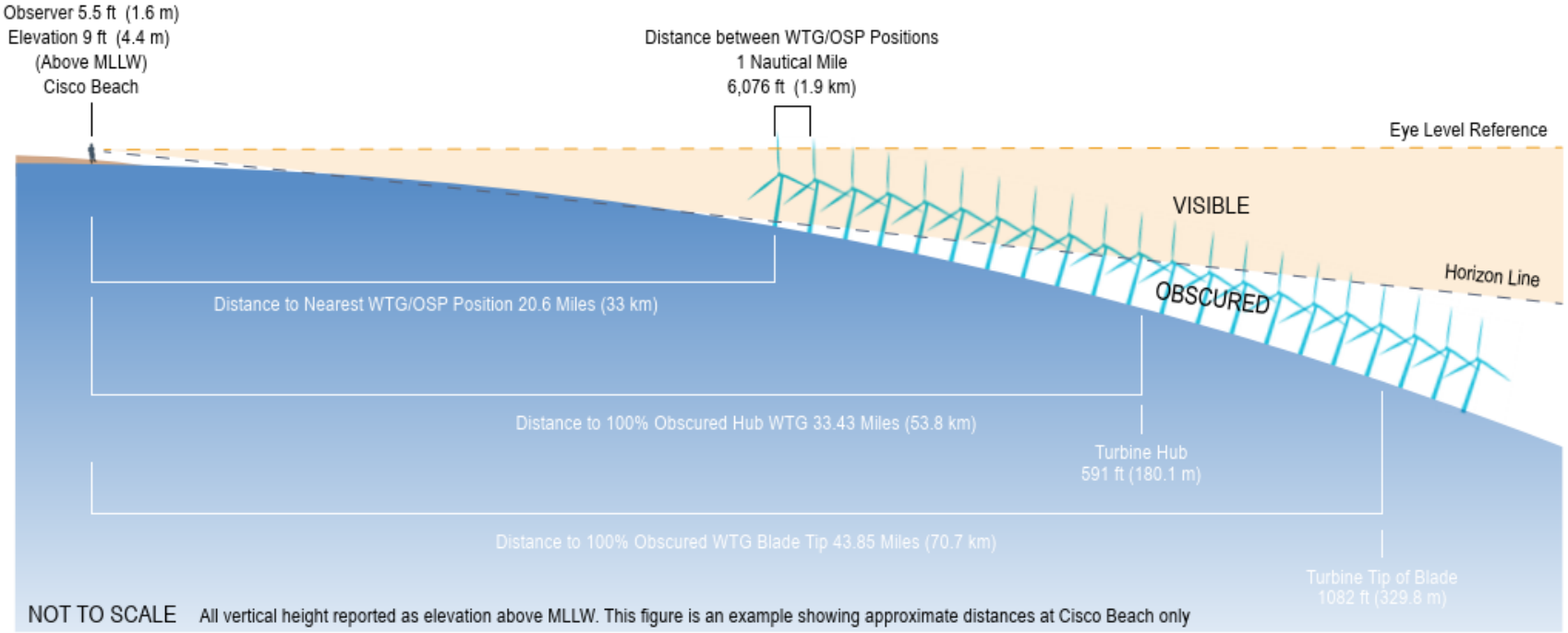
LiDAR: Post Sandy (MA, NH, RI)]. The point cloud data was processed to create 20-foot square grid cell resolution digital surface model (DSM) raster models. A viewer height of 5.5 ft (1.7 m) above the terrain was assigned to represent the eye level of a typical viewer in the landscape. The resulting rasterized DSM represents features that are aboveground that would obstruct visibility including vegetation and structures within the 46 mi ZTV.

The rasterized DSM is then compared to the "bare earth" topography DEM to identify the delta between the DSM and DEM. Any areas in this surface comparison with a value (height) difference of 5.5 ft or greater (representing typical viewer height) are identified and converted to polygon areas. This is done using raster reclassification in ArcMap to create a raster in which a value of 0 is assigned to each cell with a greater than 5.5 ft difference. The reclassified raster is then mosaicked into the existing viewshed, erasing any "visible" areas where the raster = 0. Any areas that are supported by only one 20-foot square grid cell are also removed.

The output of the DSM viewshed is referred to hereafter as the Offshore APSLVI which was utilized for the VIA and SLIA impacts analysis. The Offshore APSLVI maps presented in **Figure X.4-3**, **Figure X.4-4**, **Figure X.4-5**, **Figure X.4-6**, and **Figure X.4-7** illustrate the results of this refined DSM viewshed indicating potential visibility of the offshore components of the Project.

The viewshed analysis was developed to analyze the potential or theoretical visibility of the Project from viewer locations. Notwithstanding the theoretical visibility, as modelled in the viewshed analysis described above, the actual visibility of the Project is likely to be substantially less than that indicated in the Offshore APSLVI. Other factors affecting visibility including meteorological and atmospheric conditions such as precipitation, fog, haze, and other ambient air-related conditions are discussed in **Section 4.5.2** below. Field reconnaissance was conducted at potential KOPs within the APSLVI to determine if structures or vegetation obstructed visibility of the Project, beyond that which is reflected in the model. The effect of such screening is evaluated for each KOP. A summary of that analysis based on the findings of field reconnaissance is included in **Attachment X-1**.

FIGURE X.4-1. EXAMPLE CURVATURE OF EARTH DIAGRAM (CISCO BEACH, NANTUCKET)



Note: MLLW = Mean Lower Low Water
WTG = Wind Turbine Generator
OSP = Offshore Platform (Offshore Substation)

FIGURE X.4-2. OFFSHORE ZTV (DEM-BASED VIEWSHED)

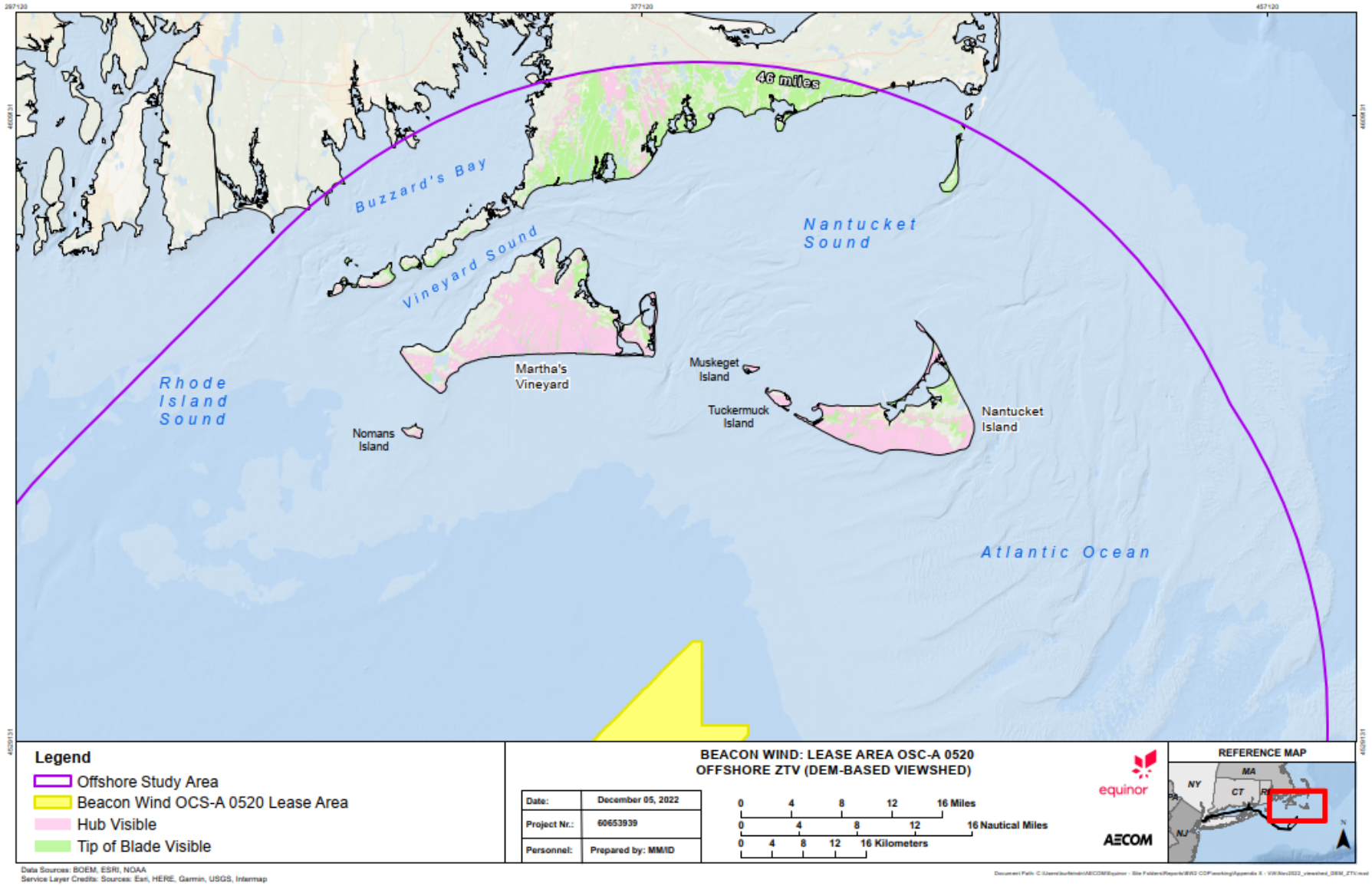


FIGURE X.4-3. OFFSHORE APSLVI (DSM-BASED VIEWSHED)

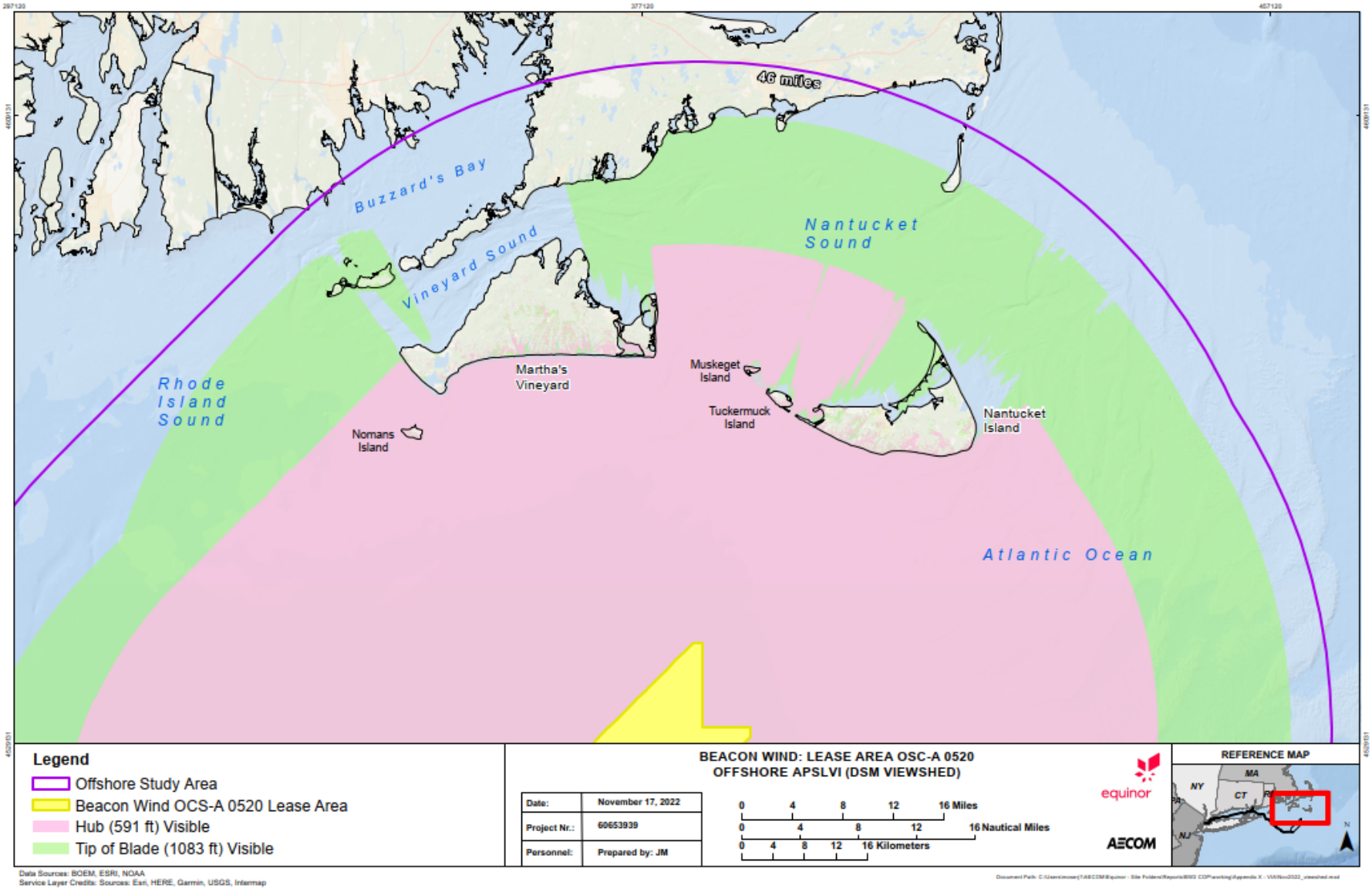


FIGURE X.4-4. OFFSHORE DSM VIEWSHED – MARTHA'S VINEYARD

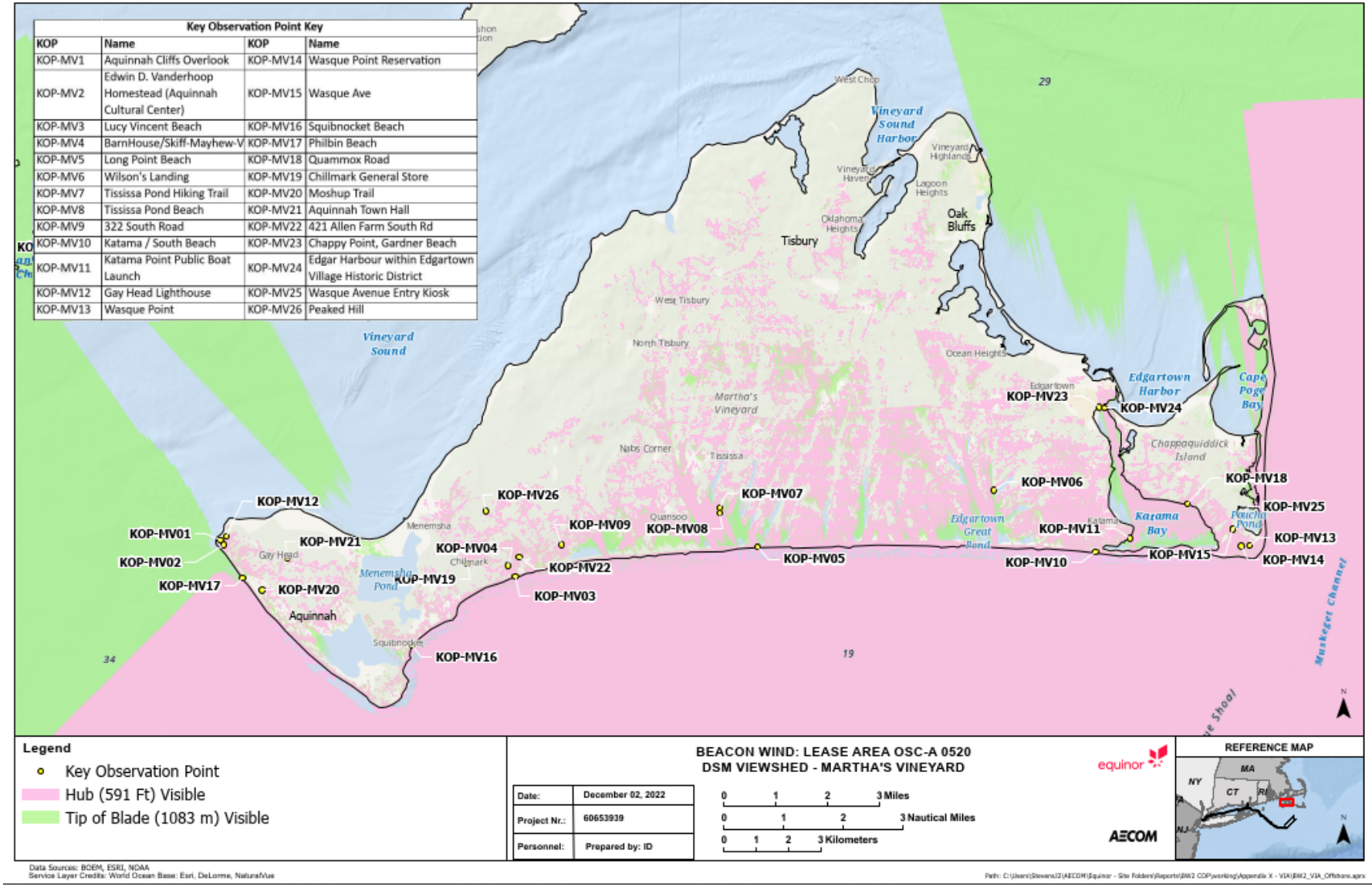


FIGURE X.4-5. OFFSHORE DSM VIEWSHED – NANTUCKET

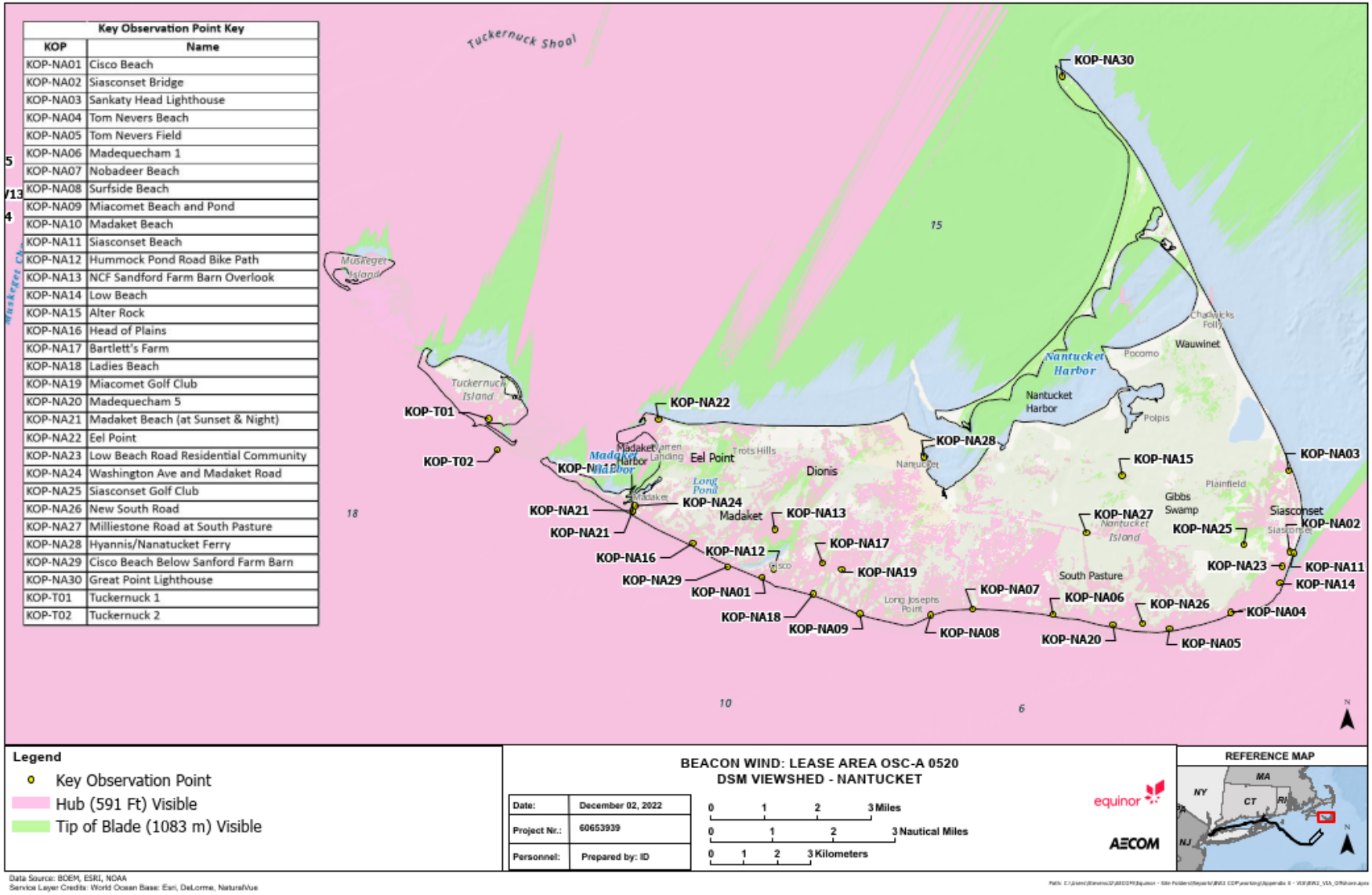


FIGURE X.4-6. OFFSHORE DSM VIEWSHED – CAPE COD

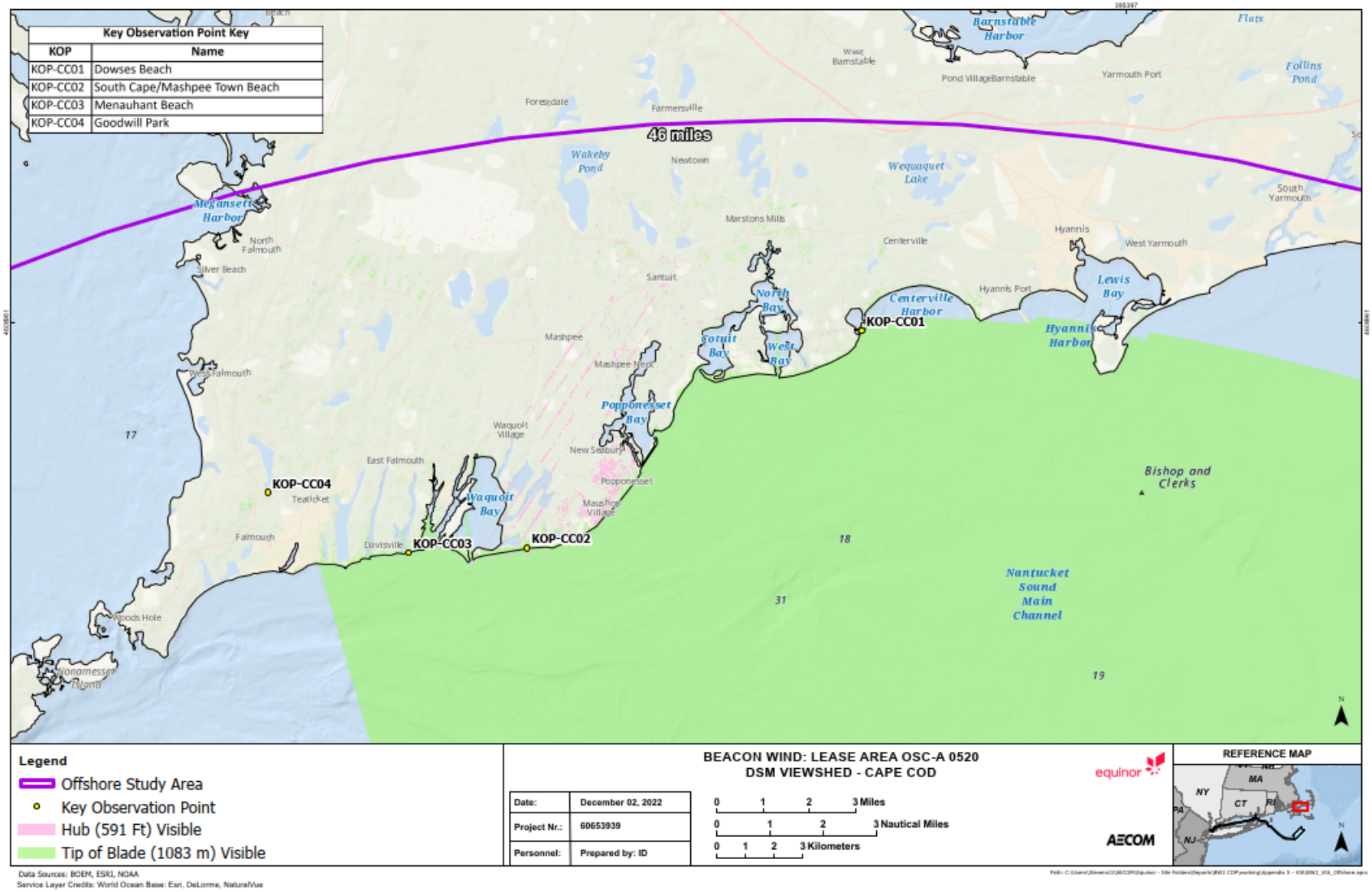
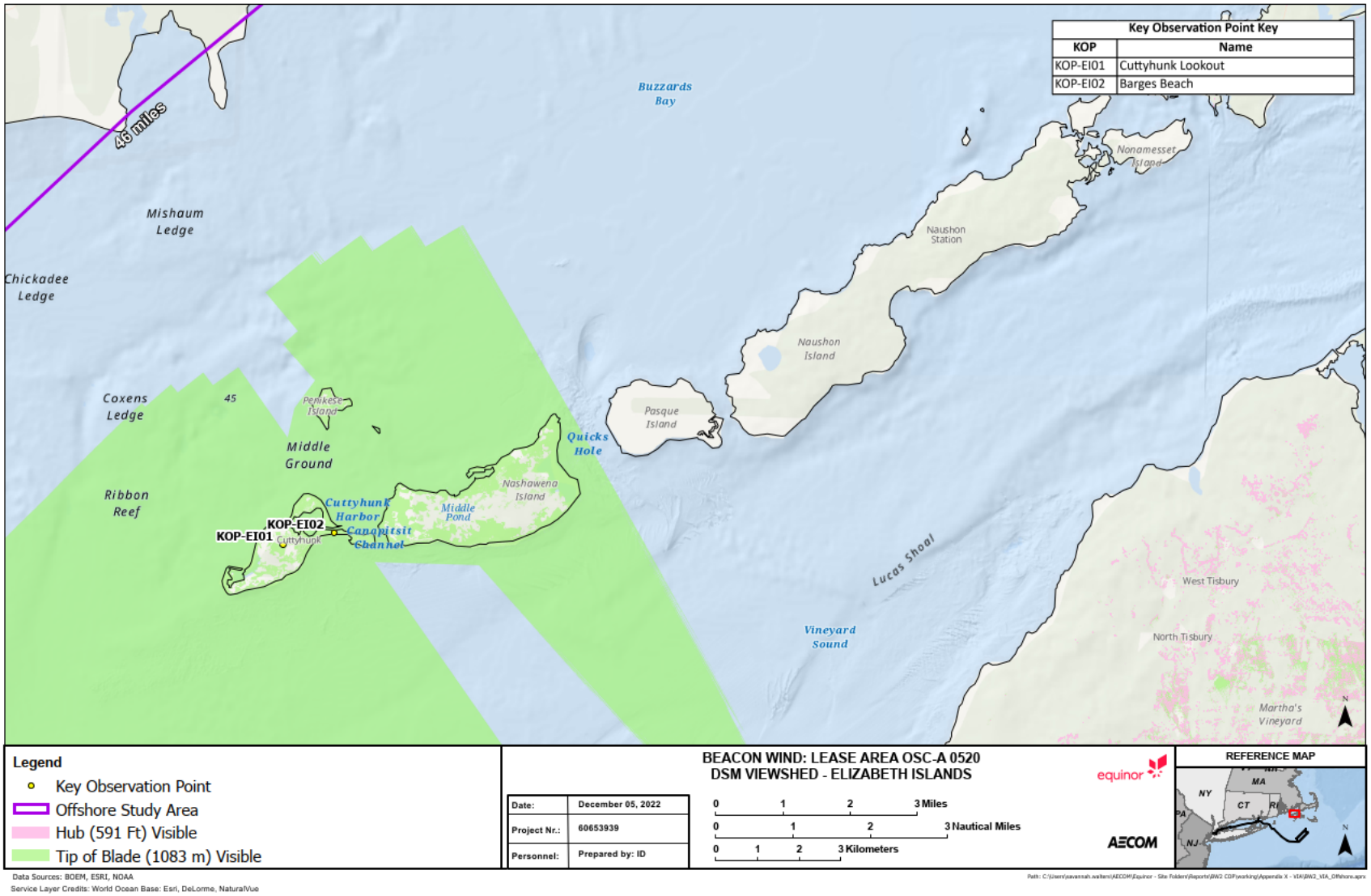


FIGURE X.4-7. OFFSHORE DSM VIEWSHED – ELIZABETH ISLANDS



X.4.3 Onshore ZTV

As with the Offshore ZTV, the Onshore ZTV analysis was established via viewshed analysis utilizing a DEM that provides the elevation of the surface of the earth (and/or a body of water) and does not consider the potential for screening from vegetation, buildings, or other structures. Because these obstructions may significantly reduce visibility in some seascapes/landscapes, the ZTV generally overestimates visibility of the project and can be considered a "worst-case scenario" for project visibility.

The BOEM SLVIA Methodology does not specify an outer level of impact for onshore substation facilities. The Onshore ZTV was extended 4 mi (6.4 km) in each direction from aboveground Project components under consideration. Sullivan, et. Al. (2013) indicates that 3.5 mi (5.6 km) is an appropriate APVI for the viewshed of transmission towers. Therefore, the Onshore APSLVI of 4 mi (5.6 km) is a reasonable distance to consider for impacts from the onshore substation facilities. Field reconnaissance indicated that visual perception of the onshore project area was negligible or non-existing at distances exceeding 4 mi.

The results of the DEM viewshed analysis for the onshore Project components and the resulting ZTV are depicted in **Figure X.4-8, Figure X.4-9, and Figure X.4-10**.

X.4.4 Onshore APSLVI

As with the Offshore APSLVI, a second viewshed model was created using LIDAR point cloud data which is converted into a raster DSM. The resulting rasterized DSM represents features that are aboveground that would obstruct visibility including vegetation and structures within the 4 mi ZTV. The rasterized DSM is then compared to the bare-earth topography DEM to identify the delta between the DSM and DEM. Any areas in this surface comparison with a value (height) difference of 5.5 ft or greater (representing typical viewer height) are queried out, converted to polygon areas, and eliminated from the viewshed.

The output of the DSM viewshed is referred to hereafter as the New York and Connecticut Onshore APSLVI which was utilized for the VIA and SLIA impacts analysis. The Onshore APSLVI maps are presented in **Figure X.4-11**, **Figure X.4-12**, and **Figure X.4-13** and illustrate the maximum potentially visible area extending out from the onshore substation facilities in all directions.

The viewshed analysis was developed to analyze the potential or theoretical visibility of the Project from viewer locations at KOPs. Due to the dense and vertical patterns of development within the New York Onshore APSLVI, actual views of the onshore substation sites are likely to be different to that shown in the Onshore APSLVI, principally with respect to views from high rise buildings where residential receptors would have elevated views across the city towards the onshore substation facilities under consideration. Field reconnaissance was conducted within the Onshore APSLVI to determine if structures or vegetation obstructed visibility of the Project beyond that which is reflected in the APSLVI and in some cases actual visibility was substantially less than indicated in the modeled viewshed.

FIGURE X.4-8. BW1 AND BW2 ONSHORE ZTV (DEM VIEWSHED) – AGRE

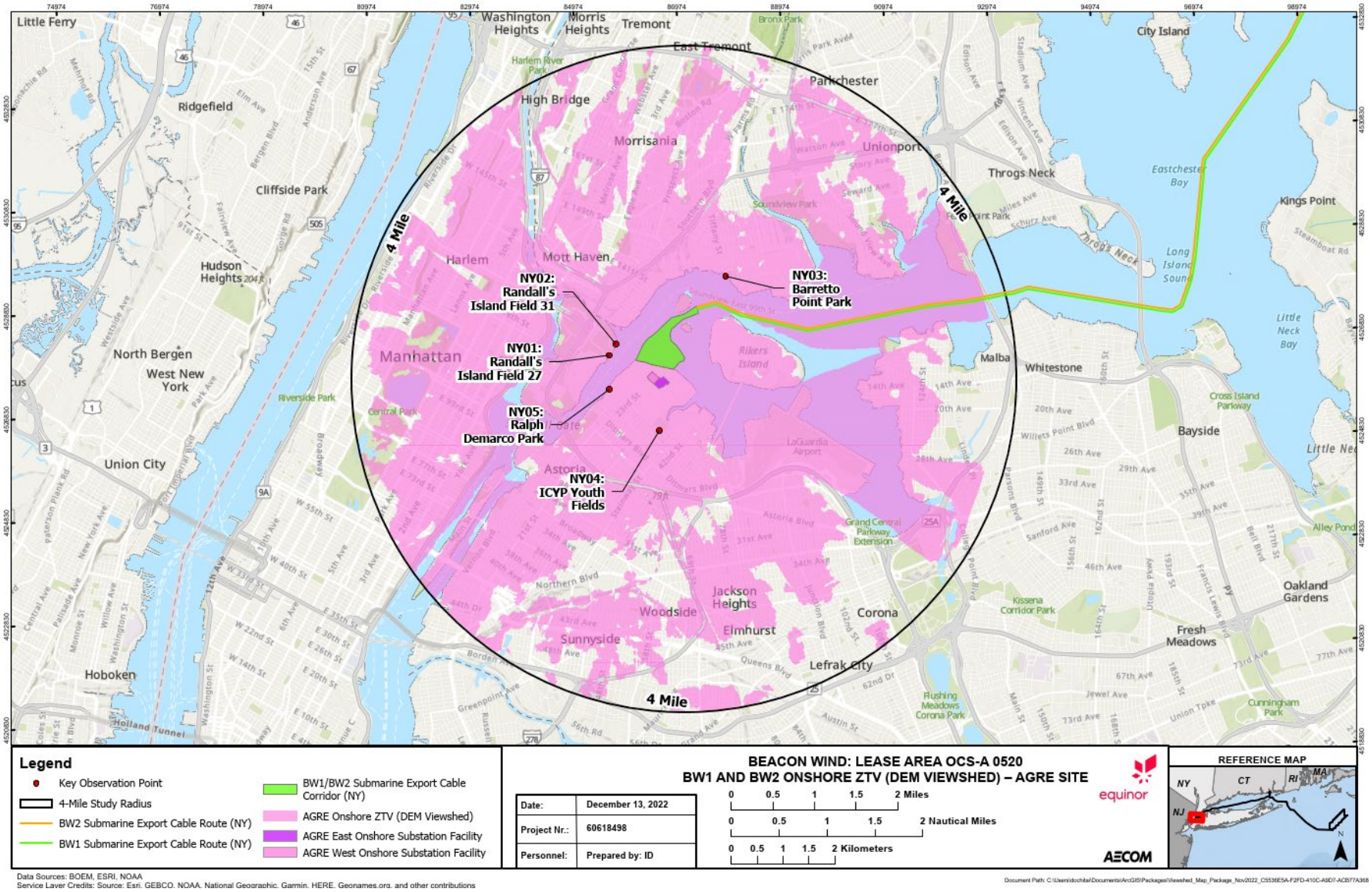


FIGURE X.4-9. BW1 AND BW2 ONSHORE ZTV (DEM VIEWSHED) – NYPA

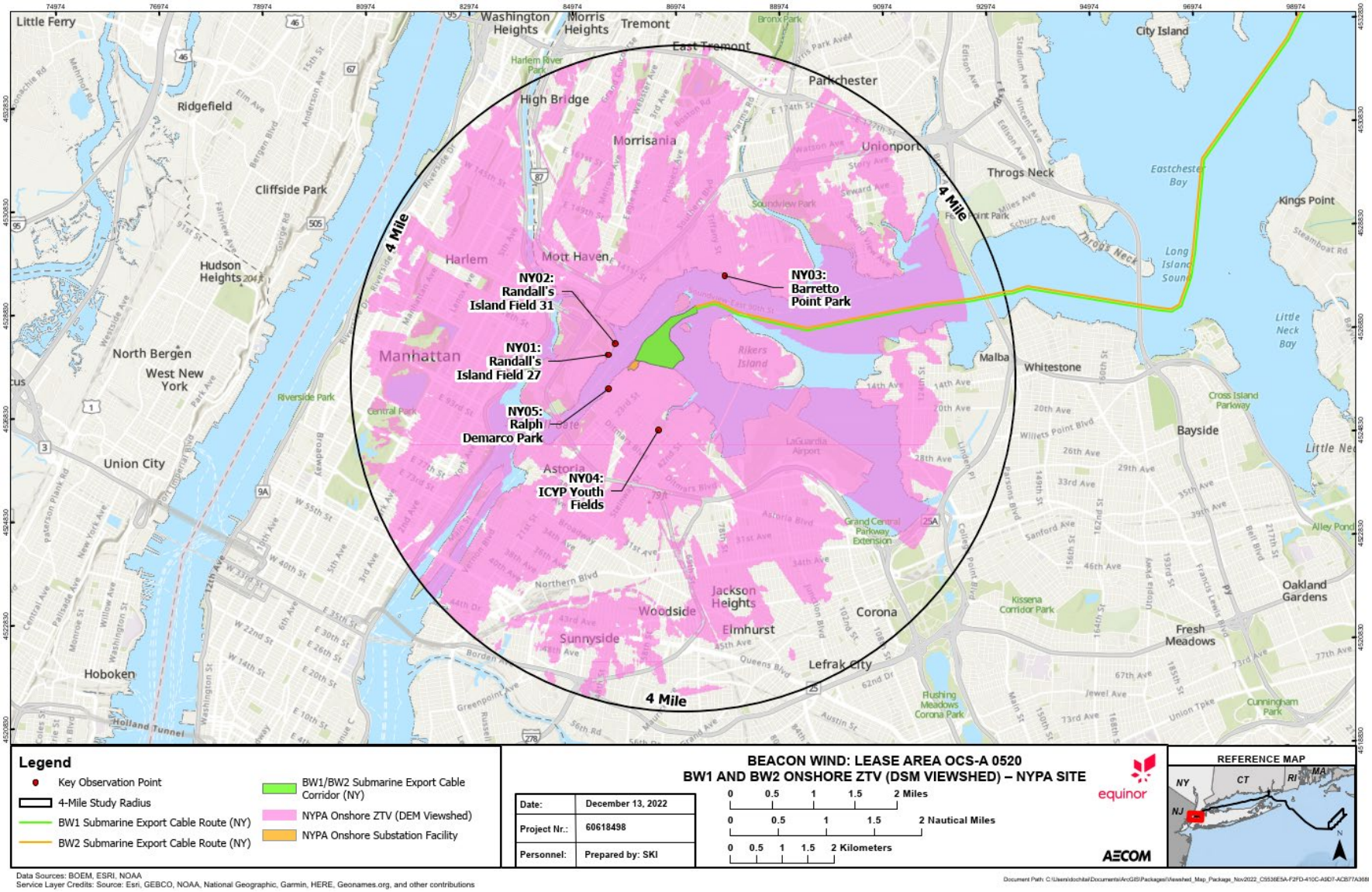


FIGURE X.4-10. BW2 ONSHORE ZTV (DEM VIEWSHED) – CONNECTICUT

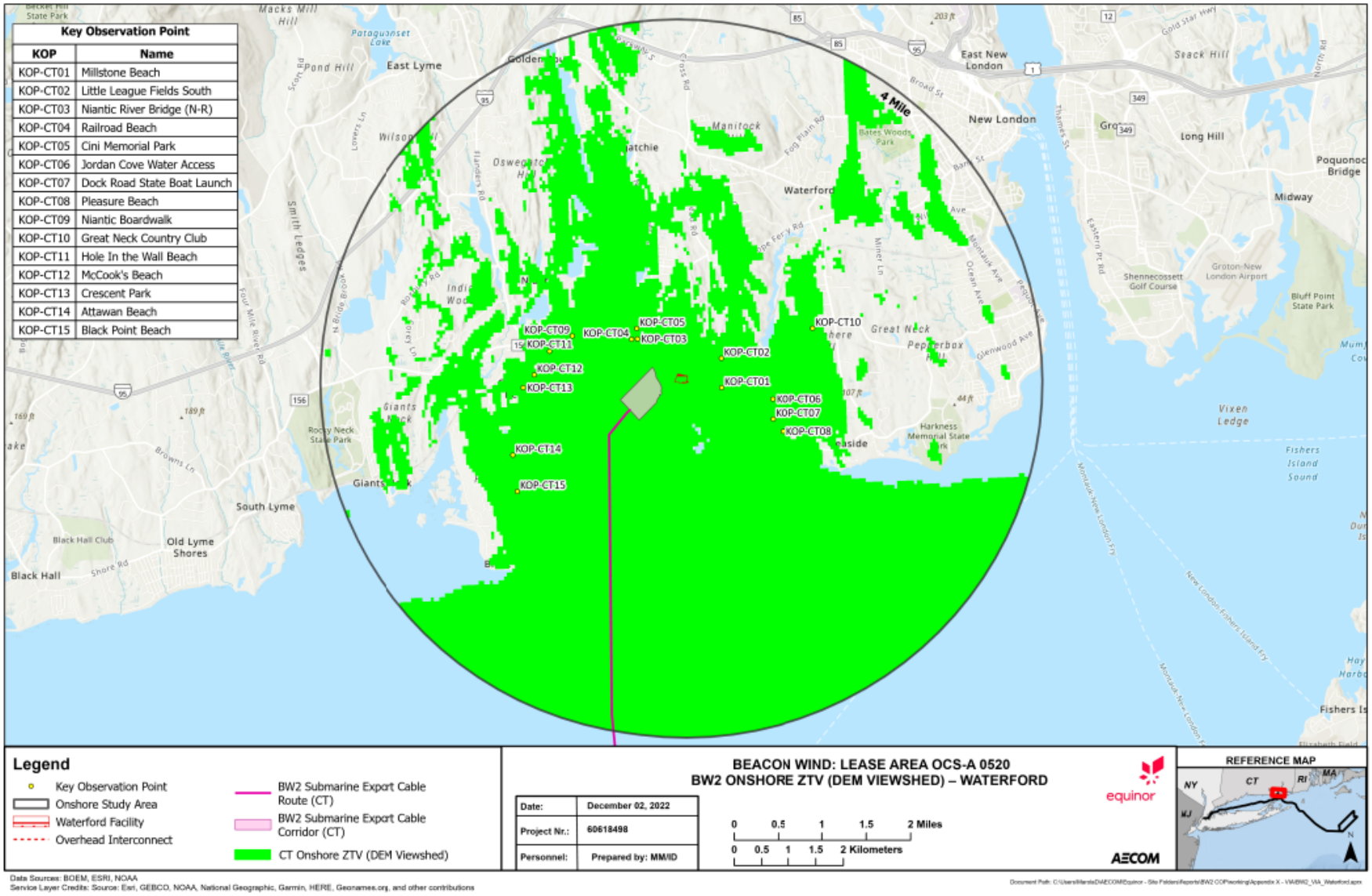


FIGURE X.4-11. BW1 AND BW2 ONSHORE APSLVI (DSM VIEWSHED) – AGRE

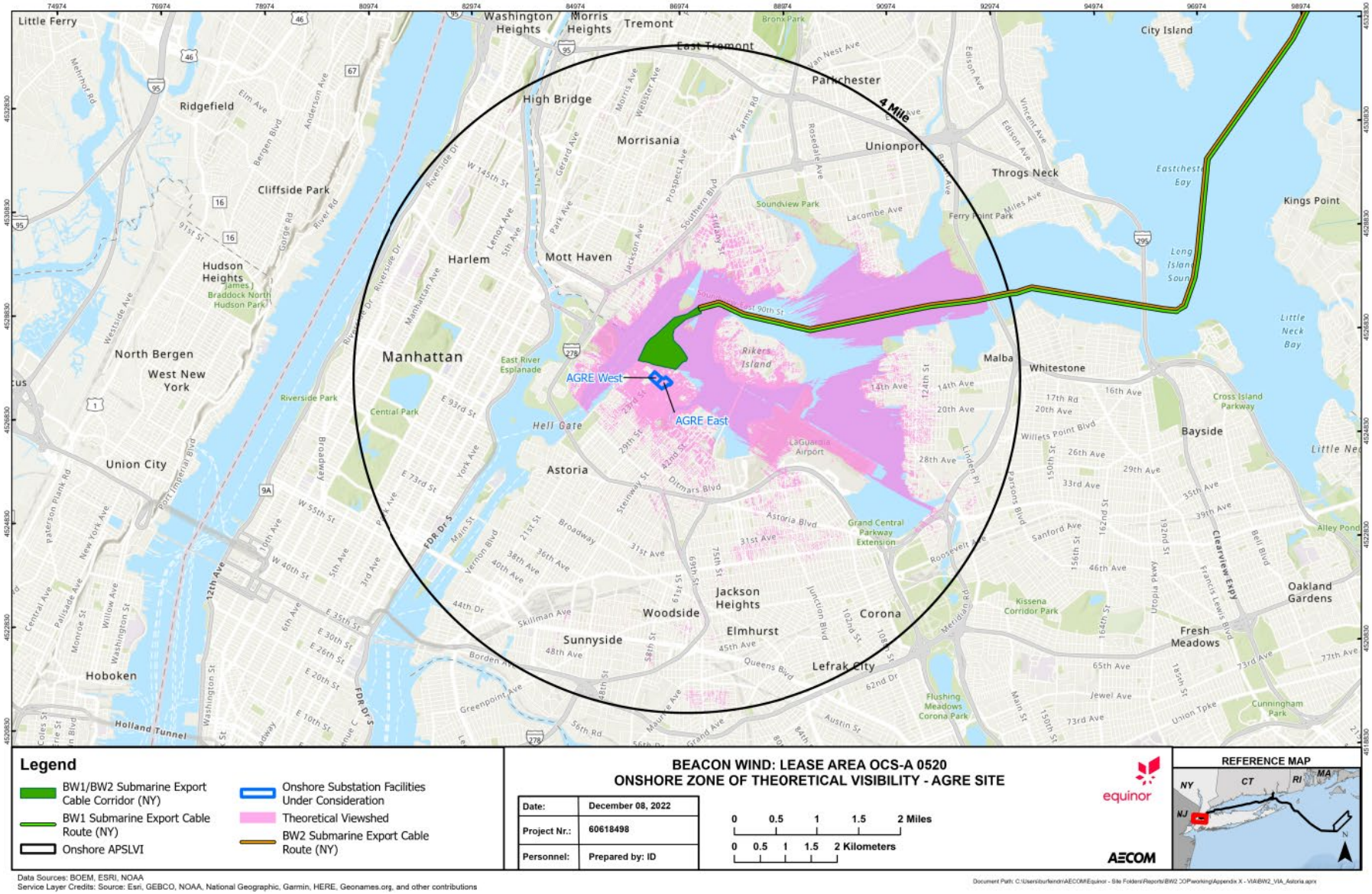


FIGURE X.4-12. BW1 AND BW2 ONSHORE APSLVI (DSM VIEWSHED) – NYPA

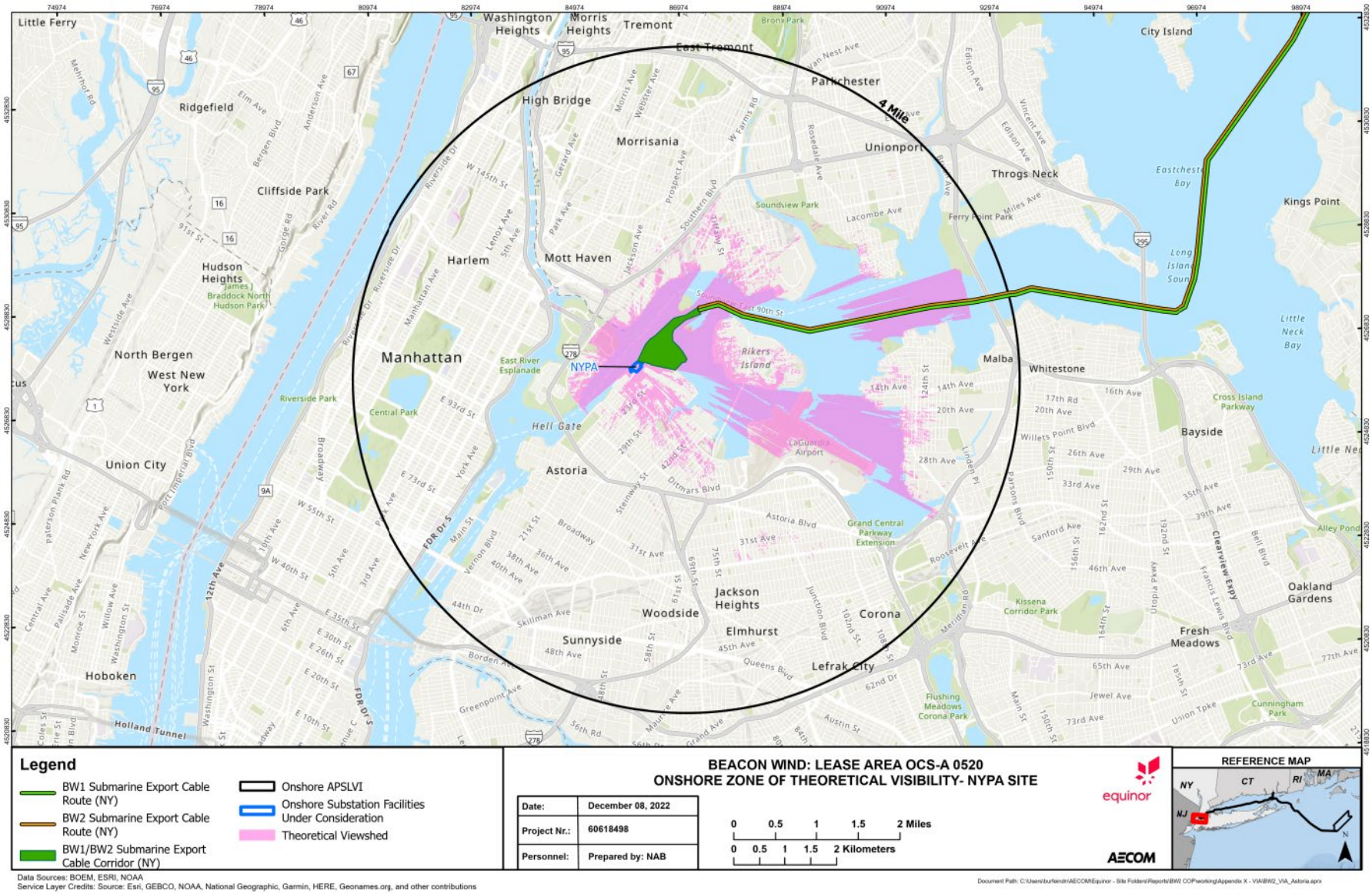
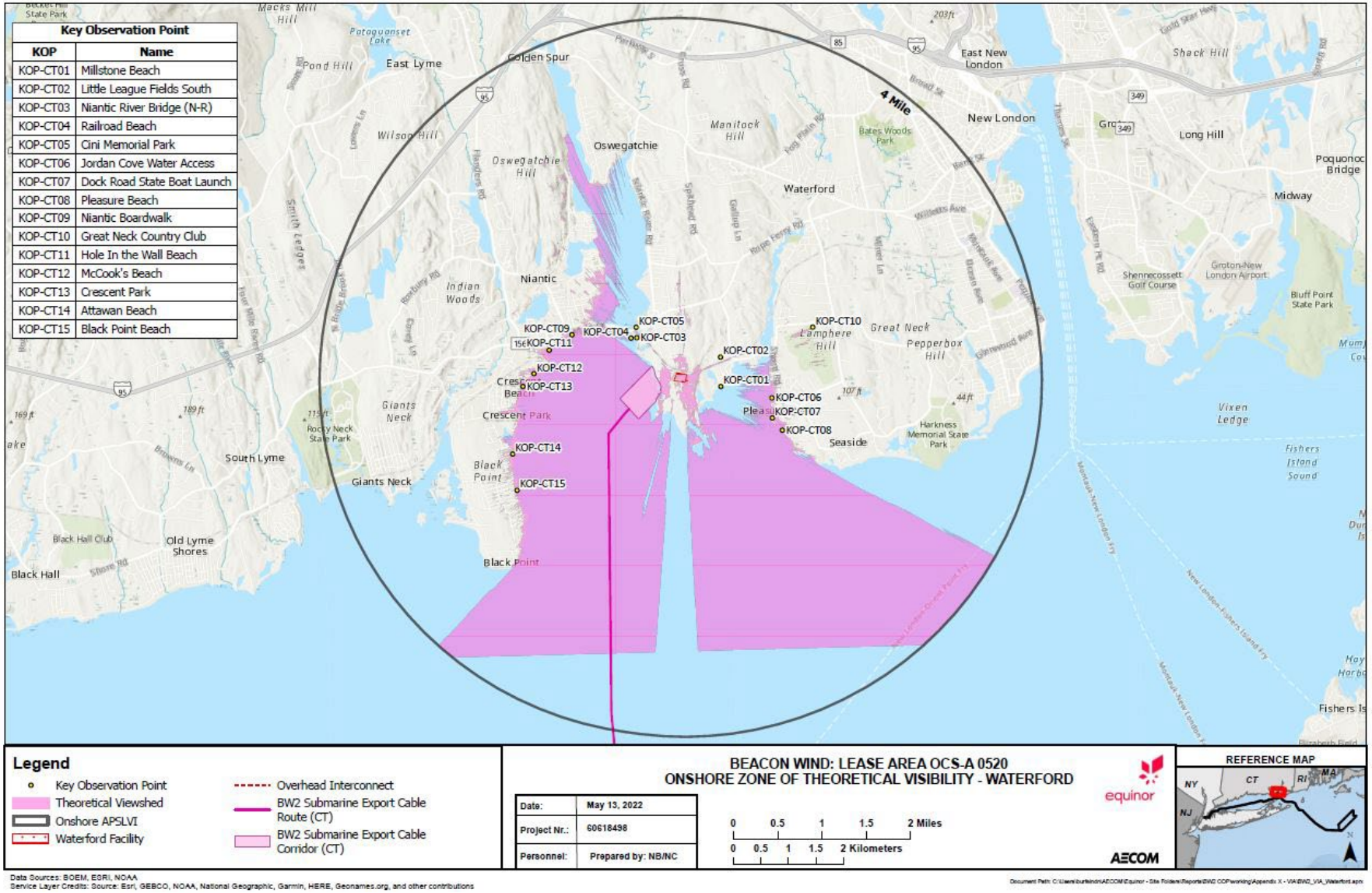


FIGURE X.4-13. BW2 ONSHORE APSLVI (DSM VIEWSHED) – CONNECTICUT



X.4.5 Other Factors Affecting Visibility

In the case of long-distance views, theoretical visibility typically exceeds actual visibility. In seascapes, atmospheric conditions reduce the practical viewing limit, sometimes significantly. The presence of waves will obscure objects very low on the horizon. The limits of human visual acuity reduce the ability of an observer to discern objects at great distances, suggesting that some turbine components (e.g., blades) would not be discernible. The color, reflectivity, and other visual characteristics of the object, and its contrast with the visual background under varying lighting conditions, also affect its visibility (BOEM, 2007).

X.4.5.1 Viewer Distance

Viewer distance from an area is a key factor in determining the level of visual impact, with perceived impact generally diminishing as distance between the viewer and the affected area increases (BOEM, 2007). Distance can be discussed in terms of pre-defined distance zones: foreground (0 - 12 mi), mid-ground (12 - 28 mi), background (28 - 31 mi), and extended background (>31 mi). These ranges of visibility will vary depending on the elevation of the viewer (i.e. viewing from a lighthouse), which is factored into the ranges. The KOPs will view the Project from a range of distance zones, including the midground, the background, or the extended background. At this distance, landscape elements lose detail and become less distinct. Even on the clearest of days, the sky is not entirely transparent because of the presence of atmospheric particulate matter. As the distance between an observer and a visible object increases the light scattering effect of particulate matter causes a reduction in color intensity and contrast between light and dark. Contrast depends upon the position of the sun and the reflectance of the object among other conditions. The net effect is that objects appear "washed out" over great distances; referred to as atmospheric perspective, this phenomena changes colors to blue-grays, while surface texture characteristics are lost, and only broad landforms are discernible. With atmospheric perspective, visual emphasis is on the outline or edge of one landmass or water resource against another with a strong skyline element (NYSDEC 2019).

From the nearest coastal vantage points, turbines in the Lease Area will range from approximately 20 mi (32 km) at Madaket Beach on Nantucket to approximately 39 mi (63 km) at Menauhant Beach on Cape Cod. Viewing distances increase as viewers move in a northerly direction. As an observer moves farther and farther from an object, the smaller the object appears. Beyond a certain distance, depending upon the size and degree of contrast between the object and its surroundings, the object may not be a point of interest for most people. At this hypothetical distance it can be argued that the object has little impact on the composition of the landscape of which it is a tiny part. Eventually, at even greater distances, the naked eye is incapable of seeing the object at all (NYSDEC 2019).

Sullivan, in *Offshore Wind Turbine Visibility and Visual Impact Threshold Distances* (2013), concludes small- to moderately sized facilities were visible to the unaided eye at distances greater than 26 mi, with turbine blade movement visible up to 24 mi. At night, aerial hazard navigation lighting was visible at distances greater than 24 mi. The observed wind facilities were judged to be a major focus of visual attention at distances of up to 10 mi, were noticeable to casual observers at distances of almost 18 mi, and were visible with extended or concentrated viewing at distances beyond 25 mi. While Beacon Wind is larger in scale than the projects evaluated by Sullivan, these findings provide additional perspective concerning the effect of distance on human visibility of offshore wind energy facilities and further support the conclusion that the maximum APSLVI of blade tip visibility of 46 mi used in this

SLVIA is highly conservative. The pre-defined distance zones discussed above can be used as a calibration to Sullivan's findings to aid in the determination of Beacon Wind's potential visibility.

X.4.5.2 Meteorological and Atmospheric Conditions

Atmospheric conditions and the factors that may or may not restrict visibility are discussed below. These factors include clear, low cloud cover, fog or haze that, when present, may obscure or restrict views of the Project. These conditions vary by time of year and day and provide information regarding how often Beacon Wind will likely be visible. Visibility on the coast and toward the offshore environment is highly variable and has been well described in *Visualization Simulations for Offshore Massachusetts and Rhode Island Wind Energy Area, Meteorological Report* (BOEM 2017).

X.4.5.2.1 Offshore

Visibility of the Project is affected by meteorological conditions such as fog, particulate matter, pollution, and precipitation. The results of the Visualization Simulations for Offshore MA/RI WEA Meteorological Report by BOEM identified commonly occurring weather conditions for the APSLVI (BOEM 2017). Meteorological surface data was collected at the National Weather Service (NWS) site at Tom Nevers Field on Nantucket including hourly measurements for a 10-year period (January 1, 2003 – December 31, 2012). Meteorological conditions were categorized based upon National Climatic Data Center criteria as follows:

- "Clear = having an unlimited cloud ceiling height (clouds can cover up to 50 percent of the sky);
- Cloudy = broken or overcast sky cover, greater than 50 percent of the sky;
- Rainy = any 'trace' or measurable precipitation (rain, snow, sleet, etc.) amount; and
- Foggy and hazy conditions are defined only by weather codes (fog has a weather code of 10-12, 28 and 40-49; haze has a weather code of 5).

Day or daylight hours were defined as the time between sunrise and sunset, as determined via the EPA's PCRAMMET model. Seasons are defined as:

- Winter = December 22–March 21;
- Spring = March 22–June 21;
- Summer = June 22–September 21; and
- Autumn = September 22–December 21."

The frequency of occurrence for five meteorological conditions, shown in **Table X.4-1**, during 50 percent or more of one given day suggested that annually, clear conditions were prevalent. Specifically, the Nantucket sky was characterized as clear for at least 50 percent of the day for 193 days. Cloud cover occurs 50 percent of a day during 81 days in a given year making this the second most frequent meteorological condition. It should be noted that fog occurs 50 percent of the day during 70 days on Nantucket which would significantly limit visibility of the Project from shore during those days.

TABLE X.4-1. FREQUENCY OF METEOROLOGICAL CONDITIONS – NANTUCKET, MASSACHUSETTS

	Occurring 50 Percent (%) or More of a Day				
Condition	**Annually**	**Winter**	**Spring**	**Summer**	**Autumn**
Clear	193	48	46	52	47
Cloudy	81	19	22	17	23
Foggy	70	16	18	21	15
Rainy	20	7	5	2	6
Hazy	2	0	1	1	0

Table X.4-2 shows the distribution of each meteorological condition seasonally during a given year on Nantucket. The frequency of occurrence for five meteorological conditions during daylight hours is given in **Table X.4-3**, and suggests that annually, clear conditions were prevalent. Specifically, the Nantucket sky was characterized as clear for at least 51 percent of daylight hours. Cloud cover occurs 19 percent of daylight hours in a given year making this the second most frequent meteorological condition on island. Clear sky conditions are most prominently during the summer months (53 percent of any summer day, on an annual basis). Cloud cover is most predominant during the fall (23 percent of any fall day, on an annual basis). While fog occurs principally during summer months (26 percent of any summer day, on an annual basis). This information indicates that the predominant meteorological conditions on Nantucket – during any given day, annually - are of clear skies, followed by cloudy and foggy conditions. Visibility of the turbines would be significantly more limited during foggy and hazy conditions.

TABLE X.4-2. DISTRIBUTION OF METEOROLOGICAL CONDITIONS – NANTUCKET, MASSACHUSETTS

	Percent (%) Per Day - 1 year				
Condition	**Annually**	**Winter**	**Spring**	**Summer**	**Autumn**
Clear	51	52	48	53	51
Foggy	22	18	24	26	17
Cloudy	19	21	20	14	23
Rainy	6	8	6	4	8
Hazy	2	1	2	3	1

The BOEM analysis included an estimate of visible distance under the different weather conditions. **Table X.4-3** shows that foggy, hazy, rainy, and cloudy conditions would likely reduce daylight visibility from Nantucket on average to less than 20 mi (32.2 km). Visibility on clear days from Nantucket would be sufficient to see parts of the Project from Nantucket but would eliminate or greatly reduce visibility under other weather conditions. Daylight visibility distances are reduced by approximately 70 and 85 percent in hazy and foggy conditions, respectively.

TABLE X.4-3. AVERAGE DAYLIGHT VISIBILITY IN MILES – NANTUCKET, MASSACHUSETTS

Condition	Average Daylight Visibility in Miles				
	Annually	Winter	Spring	Summer	Autumn
Clear	20	24	21	16	21
Cloudy	14	17	13	9	16
Rainy	10	9	10	9	10
Hazy	6	6	6	5	6
Foggy	3	3	2	3	3

In addition to meteorological conditions, air quality, sea spray and salts over the ocean's surface can affect visibility. The presence of sea spray and salts affects visibility but is not likely captured by the data presented above.

Most of the photography used in the visual simulations were photographed during clear conditions. While the simulations generally illustrate minimal atmospheric haze and screening, actual visibility of the Project will be limited by several other factors not specifically illustrated in the visual simulations evaluated including precipitation, fog, haze, and other ambient air-related conditions which affect the visibility of an object or objects. Consequently, simulations developed from the KOPs are representative of a conservative worst-case assessment of Project visibility and potential visual impact within the APSLVI.

The Visualization Simulations for Offshore MA/RI WEA Meteorological Report (BOEM 2017) indicates that cloudy, rainy, foggy, and hazy conditions result in a significant reduction in daylight visibility. Data presented in the BOEM 2017 report indicates that fog occurs at least 50 percent of daylight hours for 70 days annually on Nantucket. Visibility of the turbines would be significantly reduced during those days. Foggy and hazy conditions are also present for 22 and 2 percent of daylight hours, respectively, on a given day on an annual basis. Visibility of the turbines would be significantly reduced during those hours. Data presented in the BOEM 2017 report indicates that daylight visibility distances are reduced by approximately 70 and 85 percent in hazy and foggy conditions, respectively.

X.4.5.2.2 Queens, New York

In addition to the physical elements such as built forms, topography and vegetation, the extent of visibility of the two proposed onshore substation facility locations under consideration will be affected by meteorological conditions such as fog, airborne particulate matter, pollution, and precipitation. However, given that distances between the proposed onshore substation facility locations and KOPs are relatively small (0.25 – 1.75 mi [0.4 – 2.8 km]), meteorological conditions will generally not have a significant effect on visibility. With the exception of foggy conditions, infrastructure would likely remain visible from the KOPs during daylight hours despite conditions such as overcast cloud cover or precipitation. Although fog does occasionally occur within the Western Long Island Sound, it is infrequent and dissipates quicker than fog at the Eastern end of Long Island Sound (NOAA Office of Coast Survey 2022).

As part of their New York State Offshore Wind Master Plan, the New York State Energy Research and Development Authority (NYSERDA) completed a Visibility Threshold Study in which they examined meteorological data from the John F. Kennedy International Airport and the Long Island-MacArthur Airport to determine the frequency of various weather conditions throughout the year (NYSERDA

2017). Although NYSERDA used the data to assess visibility of a hypothetical offshore wind farm set at varying distance from the shoreline, results of the study are relevant in evaluating visual impacts of the onshore components described in this VIA. Data for the NYSERDA study was obtained from the National Climate Data Center (NCDC) for a six-year period between January 1, 2010 and December 31, 2016. NCDC data includes climate variables such as precipitation, temperature, humidity, wind speeds, sky conditions, and visibility. A frequency was determined for various sky conditions, at different times of day, and within each season. Sky conditions were categorized using a cloud coverage scale of 00 to 08 as follows:

- Clear = cloud coverage of 00 to 02;
- Partly cloudy = cloud coverage of 03 to 04; and
- Overcast = cloud coverage of 05 to 08.

In the study, daylight hours were defined by the time between morning civil twilight and evening civil twilight, as published in the Air Almanac and in accordance with the FAA CFR (2017). Seasons were defined following the astronomical definition:

- Summer = June 22 to September 22;
- Spring = March 20 to June 21;
- Fall = September 23 to December 21; and
- Winter = December 22 to March 19."

Results indicate that the predominate sky condition during the study period was 'overcast', which occurred 61 percent of the time (see **Table X.4-4** and **Table X.4-5**). 'Clear' was the second most common sky condition, occurring 17 percent of days.

TABLE X.4-4. FREQUENCY OF OCCURRENCE OF VARIOUS ONSHORE SKY CONDITIONS – JOHN F. KENNEDY INTERNATIONAL AIRPORT AND THE LONG ISLAND-MACARTHUR AIRPORT

Cloud Cover	Percentage of Daylight Hours				
	Summer	Spring	Fall	Winter	Annual
Clear	17.4	15.6	18.1	17.4	17.1
Partly Cloudy	6.8	6.1	5.5	4.9	5.9
Overcast	63.5	59.7	60.2	58.6	60.7
Visibility less than 10 mi (16.1 km)	12.3	18.6	16.2	19.1	16.3
Total	**100**	**100**	**100**	**100**	**100**

TABLE X.4-5. BREAKDOWN OF SKY CONDITIONS BY TIME OF DAY – JOHN F. KENNEDY INTERNATIONAL AIRPORT AND THE LONG ISLAND-MACARTHUR AIRPORT

Cloud Cover	Percentage of Daylight Hours/Time of Day		
	Morning	Mid-day	Afternoon
Clear	19.1	15.7	15.9
Partly Cloudy	5.4	6.8	5.7
Overcast	54.5	64.1	64.5
Visibility less than 10 mi (16.1 km)	21.0	13.4	13.9
Total	**100**	**100**	**100**

X.4.5.2.3 Waterford, Connecticut

In addition to the physical elements such as built forms, topography and vegetation, the extent of visibility of the proposed onshore substation facility location will be affected by meteorological conditions such as fog, airborne particulate matter, pollution, and precipitation. However, given that distances between the proposed onshore substation facility locations and KOPs are relatively small (0.27 – 2.25 mi [0.44 – 3.62 km]), meteorological conditions will generally not have a significant effect on visibility. With the exception of foggy conditions, infrastructure would likely remain visible from the KOPs during daylight hours despite conditions such as overcast cloud cover or precipitation. Fog does occur within the eastern end of Long Island Sound, and it is more frequent and dissipates slower than fog at the western end of Long Island Sound (US Coast Pilot, 2022).

AECOM completed a visibility analysis in which meteorological data from the Groton-New London Airport through NOAA Local Climatological Data (U.S. Department of Commerce [DOC] et al. 2022) was examined to determine the average visibility throughout different seasons across a 10-year period (January 1, 2011, through December 31, 2020). The maximum visibility value in the dataset was 10 mi (16.1 km).

To be consistent with the Offshore and BW1 and BW2 Onshore meteorological studies, seasons were defined following the astronomical definition:

- Summer = June 22 to September 22;
- Spring = March 20 to June 21;
- Fall = September 23 to December 21; and
- Winter = December 22 to March 19.

Results indicate that the average visibility over 10 years was 7.6 mi (12.2 km) at the Groton-New London Airport. Although the averages of each season are similar, the season with the highest average visibility is Fall, while the season with the lowest visibility in Spring (see **Table X.4-6**).

TABLE X.4-6. VISIBILITY OVER A 10-YEAR PERIOD – GROTON-NEW LONDON AIRPORT

	Average Visibility Each Year				
Year	**Summer**	**Spring**	**Fall**	**Winter**	**Annual Average**
2011	7.5 mi (12.0 km)	6.2 mi (10.0 km)	7.9 mi (12.7 km)	6.8 mi (11.0 km)	7.2 mi (11.5 km)
2012	7.1 mi (11.4 km)	6.5 mi (10.4 km)	7.1 mi (11.5 km)	8.0 mi (12.6 km)	6.9 mi (11.1 km)
2013	6.3 mi (10.1 km)	6.6 mi (10.6 km)	7.8 mi (12.5 km)	6.5 mi (10.4 km)	6.9 mi (11.1 km)
2014	8.2 mi (13.3 km)	7.1 mi (11.4 km)	7.5 mi (12.0 km)	7.1 mi (11.4 km)	7.6 mi (12.2 km)
2015	8.2 mi (13.3 km)	7.3 mi (11.8 km)	8.2 mi (13.2 km)	6.7 mi (10.8 km)	7.9 mi (12.7 km)
2016	8.6 mi (13.9 km)	8.0 mi (12.8 km)	8.4 mi (13.6 km)	7.7 mi (12.4 km)	8.3 mi (13.4 km)
2017	8.2 mi (13.2 km)	7.4 mi (12.0 km)	8.5 mi (13.7 km)	7.5 mi (12.1 km)	8.1 mi (13.0 km)
2018	7.8 mi (12.5 km)	7.2 mi (11.6 km)	8.3 mi (13.4 km)	7.1 mi (11.4 km)	7.8 mi (12.5 km)
2019	8.1 mi (13.0 km)	7.6 mi (12.2 km)	8.1 mi (13.1 km)	8.0 mi (12.9 km)	7.9 mi (12.8 km)
2020	8.1 mi 13.1 km)	7.7 mi (12.2 km)	7.6 mi (12.3 km)	8.3 mi (13.4 km)	7.8 mi (12.6 km)
Seasonal Average	7.8 mi (12.6 km)	7.2 mi (11.5 km)	8.0 mi (12.8 km)	7.4 mi (11.9 km)	**7.6 mi (12.3 km)**

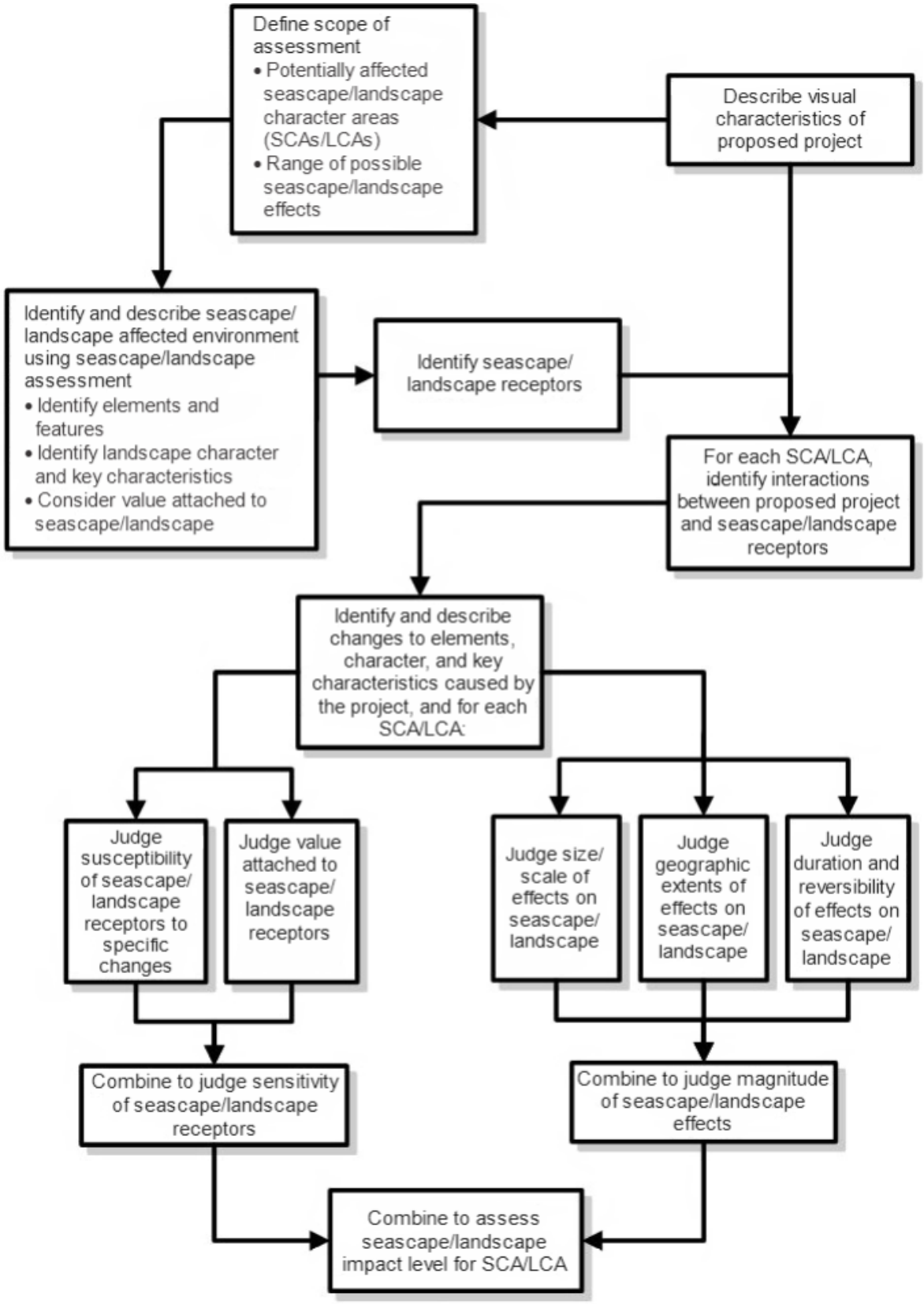
X.5 SLIA

The SLIA assesses impacts on the physical elements and features that make up a seascape or landscape and the aesthetic, perceptual, and experiential aspects of the seascape or landscape that contribute to its distinctive character. These impacts affect the "feel," "character," or "sense of place" of an area of seascape or landscape, rather than enjoyment of a particular view. Impacts on view experience are assessed in the VIA. The visibility of offshore wind developments may affect the aesthetic, perceptual, and experiential aspects of the seascape or landscape and thus its distinctive character. As such, the visibility of the Project as evaluated from particular viewpoints as presented in the VIA informs the SLIA analysis with SLIA impacts from specific viewpoints (KOPs) considered as indicative of impacts to the character areas as a whole. The offshore SLIA primarily measures the compatibility of the character of the offshore components of the Project with the aspects that contribute to the distinctive character of the seascape and landscape areas from which the Project is visible.

The SLIA includes a description and assessment seascape and landscape receptors which are the potentially affected seascape character areas (SCAs), landscape character areas (LCAs), and ocean character area (OCA), collectively referred to as seascape/landscape character areas (SLCAs). The SLCAs are discrete areas of seascape or landscape, each with its own character and identity, as expressed through similar geology, topography, drainage patterns, vegetation, historical land use and settlement patterns, and perceptual and aesthetic attributes within the area.

The information from the SLCA receptor evaluation is then used to identify potential impacts from the Project. The impact assessment is based on the sensitivity of the receptor (the potentially affected SLCA) and the magnitude of SLCA changes brought about by the Project. For the OCA, and for each affected SCA and any affected LCAs, the sensitivity of the receptor is determined, based on its susceptibility to impact and its perceived value, and the magnitude of the impact is determined by considering the size and scale of the change to existing conditions caused by the Project, the geographic extent of the area subject to the project's effects, and the effects' duration and reversibility. After the nature and magnitude of the impact have been determined, its impact level is evaluated. The SLIA process is summarized in **Figure X.5-1**.

FIGURE X.5-1. SLIA PROCESS



X.5.1 Offshore SLIA

X.5.1.1 Offshore SL Impact Receptor Identification

In order to identify the particular seascape and landscape impact receptors that may be affected by the Project, and to assess potential impacts on the receptors, baseline information regarding the seascape and landscape was gathered.

While seascape and landscape character is derived from a pattern of physical elements, it is equally defined by perceptual, experiential, and aesthetic qualities. As described within the BOEM SLVIA Methodology, there are perceptual attributes that contribute to the experience of seascapes/landscapes, including:

- Scenic quality: seascape/landscapes that are known to have broad appeal to aesthetic senses;
- Rarity: natural or cultural elements that are unique or in short supply;
- Recreation: places where recreational activities occur or are available;
- Experiential: wildness, tranquility, solitude; and
- Associations: places where historic figures or events occurred.

An important part of analyzing the seascape/landscape character is to describe how land-based environmental conditions relate to the attributes of the ocean seascape. The landscape/seascape character analysis describes the physical and perceptual attributes of the setting that intersect and create a relationship between terrestrial landscapes and the coastal and offshore environment. Physical factors along with perceptual qualities define the setting that intersects and creates a relationship between terrestrial landscapes and the coastal and offshore environment.

The sections below describe the physical attributes of the Offshore APSLVI including topography, landcover, and characteristics of the ecoregion as well as the influence of human settlement activity as expressed through land use and transportation infrastructure. The overall character of the seascape/landscape within the APSLVI, including any distinctive areas that can be identified, and the particular combinations of elements and aesthetic and perceptual aspects that make each area distinctive, have been used to identify areas of homogenous character (SLCAs) which are defined and mapped.

X.5.1.1.1 Topography

The islands of Martha's Vineyard and Nantucket were formed during the last period of continental glaciation and the subsequent rise in sea level. This glaciation has resulted in some minor topographical variation across Martha's Vineyard and Nantucket. The islands are low-lying, with low hills and shallow basins. The coastlines are generally fringed by barrier beaches and sand dunes, although some cliffs are present at the southwest of Martha's Vineyard. See **Figure X.5-2, Figure X.5-3, Figure X.5-4** and **Figure X.5-5** in the sections below for the topography maps for Martha's Vineyard, Nantucket, Cape Cod, and the Elizabeth Islands in association with the KOPs.

Martha's Vineyard

From the central part of Martha's Vineyard, the landform slopes to the south, intersected by narrow inlets with areas of open water. To the east, the topography comprises low rolling hills. In the northern and western parts of the island elevation increases slightly, with high points at Indian Hill (262 ft [79.9 m]), Whiting Hill (246 ft [75 m]), Prospect Hill (308 ft [93.9 m]), and Peaked Hill (308 ft [93.9 m]), which

form a low ridge along the western coast.[5] The cliffs of Aquinnah (Gay Head), Nashaquitsa, and Squibnocket form landmark features on the south-western peninsula and provide elevated views along the coast and across the ocean (see **Figure X.5-2**).

Nantucket

On Nantucket, superficial glacial formations have created three distinct 'bands,' which run east-west across the island and form the outlying islands of Esther, Tuckernuck, and Muskeget. These bands form low ridgelines across the islands. The most prominent of these is located on the northern side of the main island (Nantucket) and is marked by the summits of Saul's Hill (75 ft [22.9 m]), Shawkemo Hills (85 ft [25.9 m]) and Fudge Hill (59 ft [18 m]), which form the highest points on the island. In contrast, the topography is low lying and incised between these ridgelines, as in the case of Milestone Cranberry Bog and Windswept Cranberry Bog. To the north and south of the ridgelines, the topography slopes gently to the coast, which is characterized by long sandy beaches or strands. The landform of Nantucket Harbor at the north of the island is unique in form and is protected by a curved peninsula (see **Figure X.5-3**.

Cape Cod

From the APSLVI 46 mi (74 km) limit, the landform on Cape Cod slopes south to the coastline, intersected by narrow inlets with areas of open water, oriented north/south along the Vineyard and Nantucket Sounds. The highest point in Cape Cod is Pine Hill (306 ft. [93m]) in Bourne, MA, which is north of the 46 mi (74 km) APSLVI limit (see **Figure X.5-4**).

Elizabeth Islands

The Elizabeth Islands are a chain of low-lying islands extending from the southwestern tip of Cape Cod. Cuttyhunk Island is the outermost island at the western end of the island chain and has a rocky shore and steep cliffs. Lookout Hill is at elevation 154 ft (47m) and is the highest point on the island (see **Figure X.5-5**).

[5] https://www.digitalcommonwealth.org/search/commonwealth:vh53xs99w

FIGURE X.5-2. TOPOGRAPHY – MARTHA'S VINEYARD

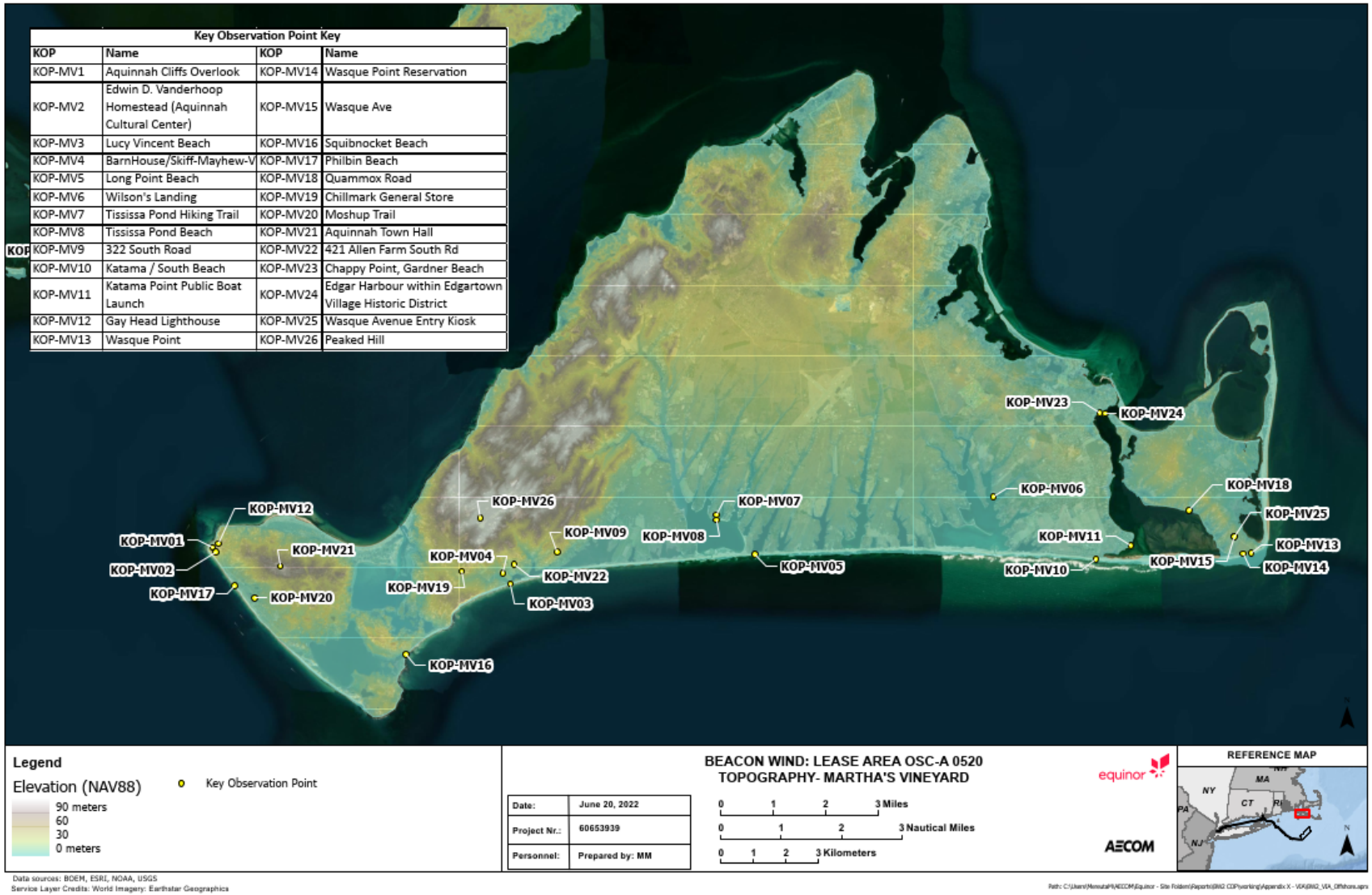


FIGURE X.5-3. TOPOGRAPHY – NANTUCKET AND TUCKERNUCK ISLAND

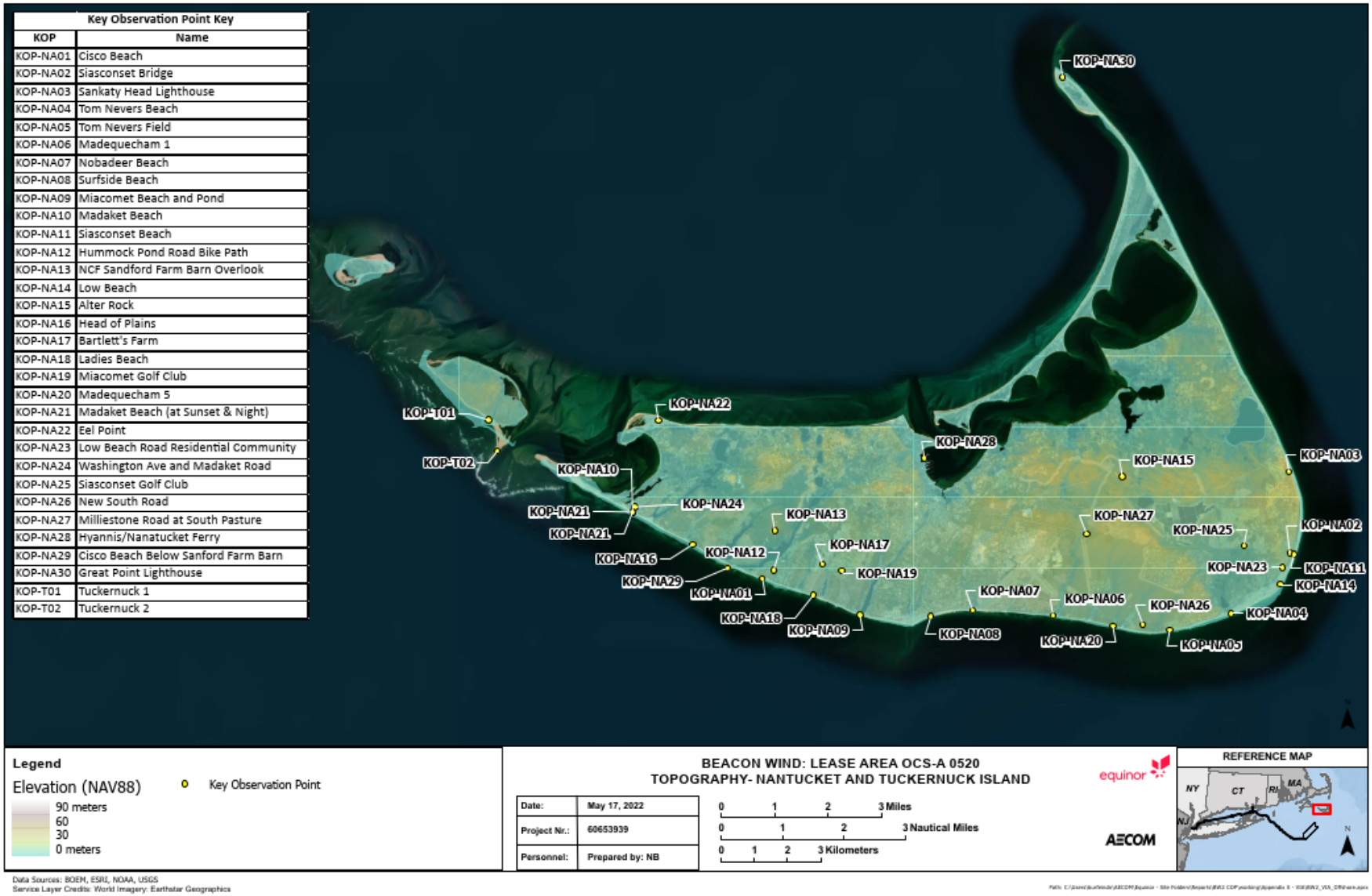


FIGURE X.5-4. TOPOGRAPHY – CAPE COD

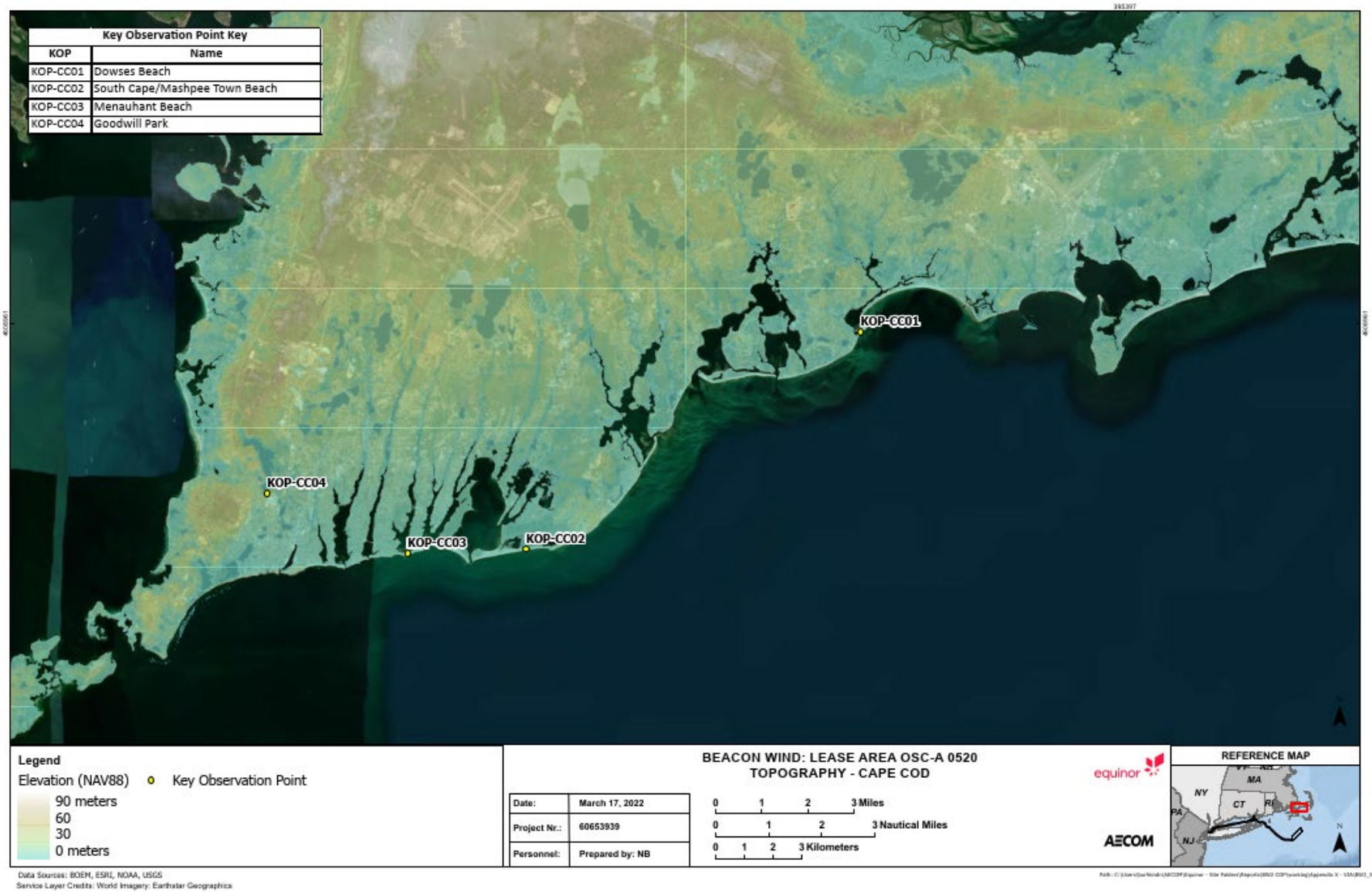
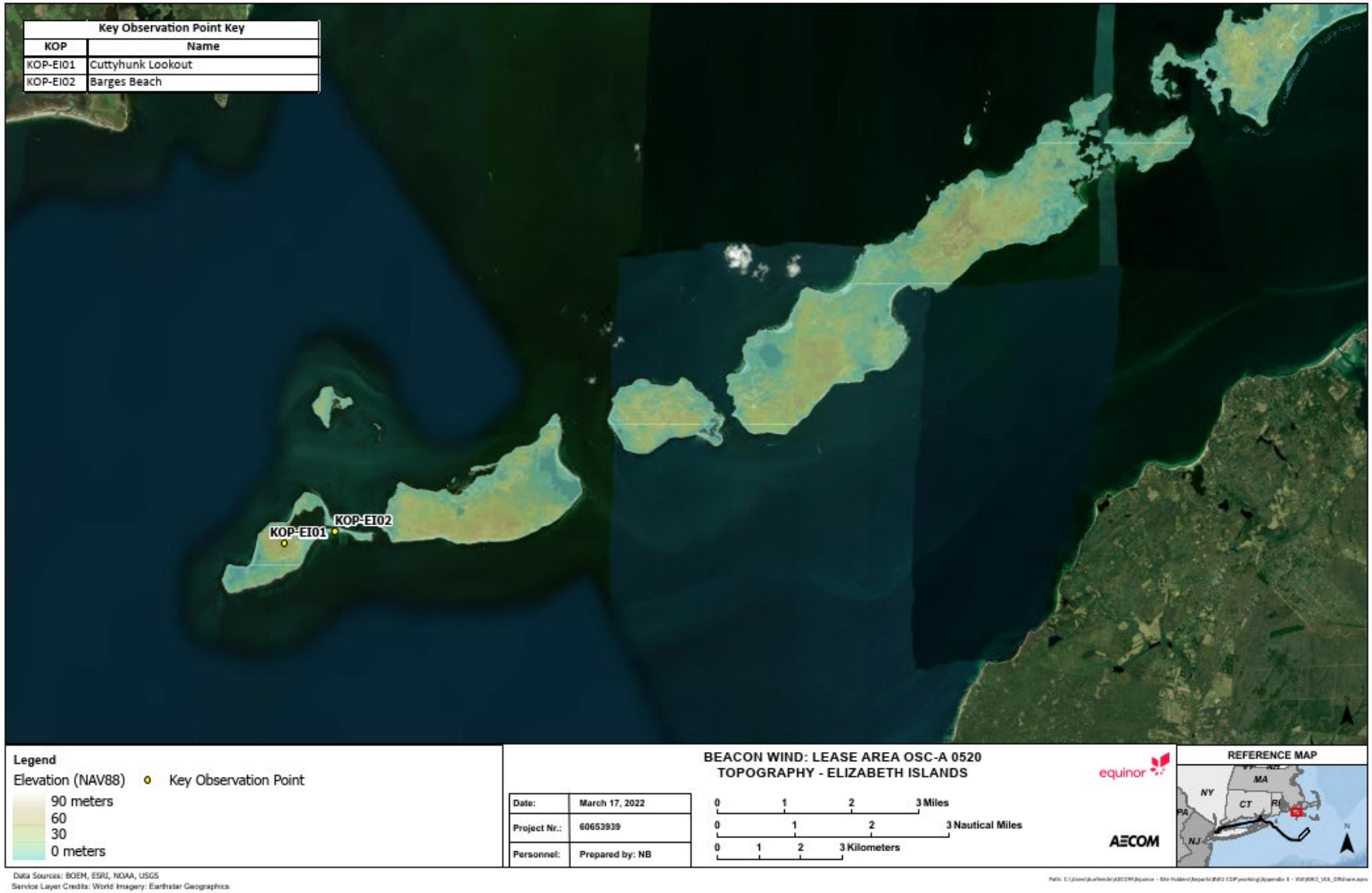


FIGURE X.5-5. TOPOGRAPHY – ELIZABETH ISLANDS



X.5.1.1.2 Landcover

Martha's Vineyard

Vegetation cover on the northern and western sides of Martha's Vineyard is predominantly comprised of deciduous woodland, interspersed by small areas of evergreen forest. Woody wetlands are present in low-lying areas including at Chilmark, areas to the west of West Tisbury, inland from the coast at Chappaquiddick, and along the edges of watercourses. Within the central and southern extents of the island, large areas of shrub and scrub cover enclose grasslands that extend to the coast. To the east, this shrub and scrub habitat is interspersed with a mosaic of evergreen forest and deciduous woodland, while a small area of pasture and cultivated crops are present at Katama. The island of Chappaquiddick, located east of Martha's Vineyard and connected via a sandbar at Edgartown, is predominantly covered by scrub with some patches of evergreen and deciduous woodland and small areas of pasture. Grassland is dominant nearer the coast and is interspersed by areas of salt marsh and wetland. See **Figure X.5-6** below illustrating the land use and land cover on Martha's Vineyard.

Nantucket

The coastline of Nantucket is typified by long sandy beaches, interrupted in places by areas of rock outcrops and clay exposures. The coastal zone comprises areas of grassland, herbaceous wetland and woody wetland with areas of scrub and shrub near Tom Nevers in the east of the island. Inland from the coastal zone, areas of woody wetland are interspersed with deciduous and mixed woodland and small areas of scrub across a large portion of the island, with small, discrete pockets of pasture in the south and east of the island. The town of Nantucket is surrounded by areas of evergreen forest, particularly to the east of the town. See **Figure X.5-7** below illustrating land use and land cover on Nantucket and Tuckernuck Islands.

Cape Cod

The landcover within the 46 mi (74 km) APSLVI area on Cape Cod is a mix of developed areas and mixed forest, with the coastline typified by sandy and rocky beaches and inlet waterways. The coastline, while predominantly developed, has a few pockets of grassland/grassy dunes and rock outcrops.

The mixed forested areas, dotted with sections of deciduous forest and evergreen forest, are located inland from the developed areas and towards the western section of Falmouth. The forests are mostly comprised of pines and oaks. The area also has many small ponds, creeks, and waterway inlets, including the larger Waquoit, Popponesset, Cotuit, North, and West Bays. See **Figure X.5-8** below illustrating land use and land cover on Cape Cod.

Elizabeth Islands

The landcover throughout the Elizabeth Islands is predominantly deciduous forest with sections of shrub/scrub and grasslands vegetation. The coastline is typified by mix of sandy and rocky beaches. Nearly half of the island of Cuttyhunk is a nature preserve. See **Figure X.5-9** below illustrating land use and land cover on the Elizabeth Islands.

FIGURE X.5-6. LAND USE/LAND COVER – MARTHA'S VINEYARD

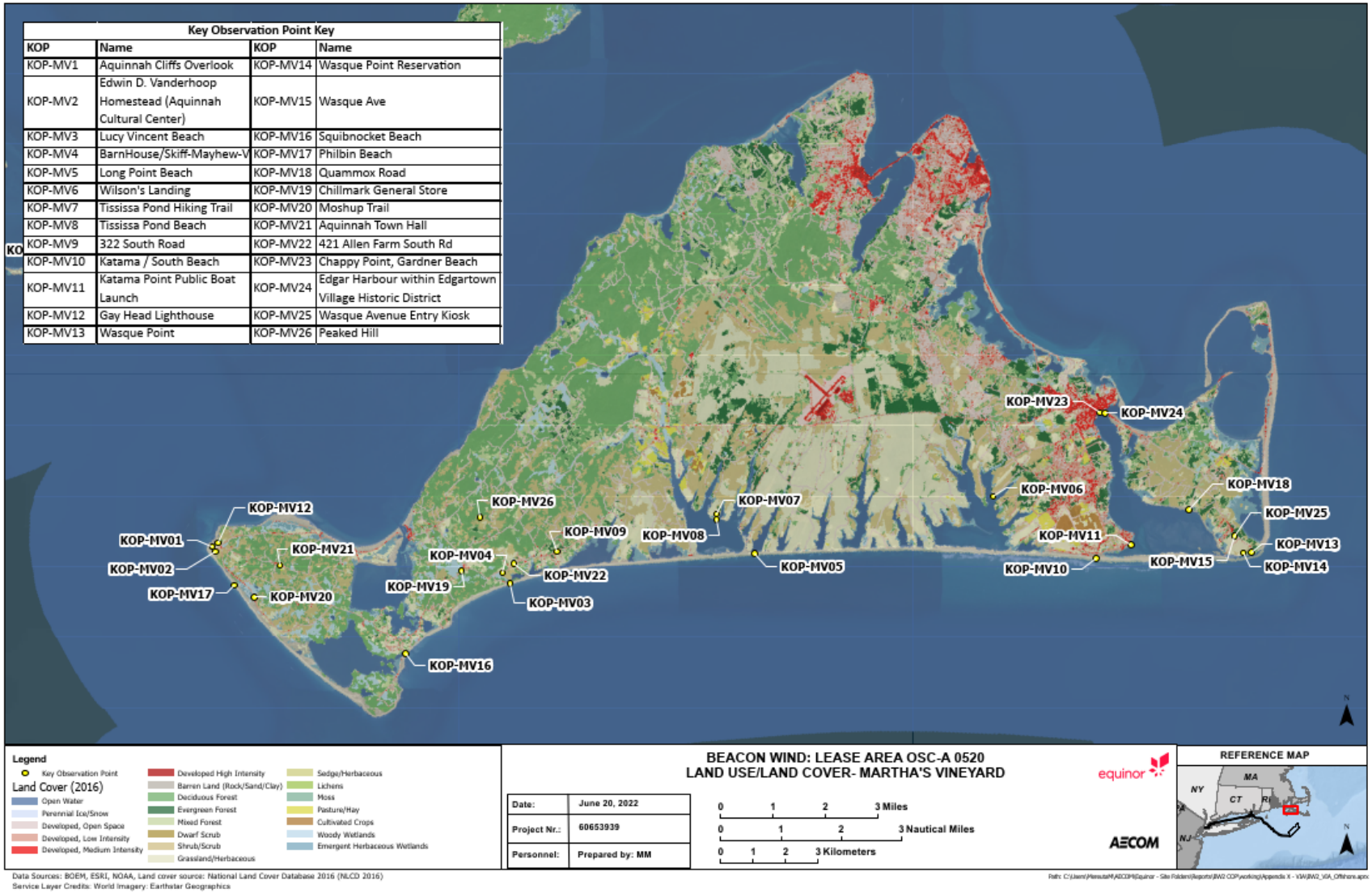


FIGURE X.5-7. LAND USE/LAND COVER – NANTUCKET AND TUCKERNUCK ISLANDS

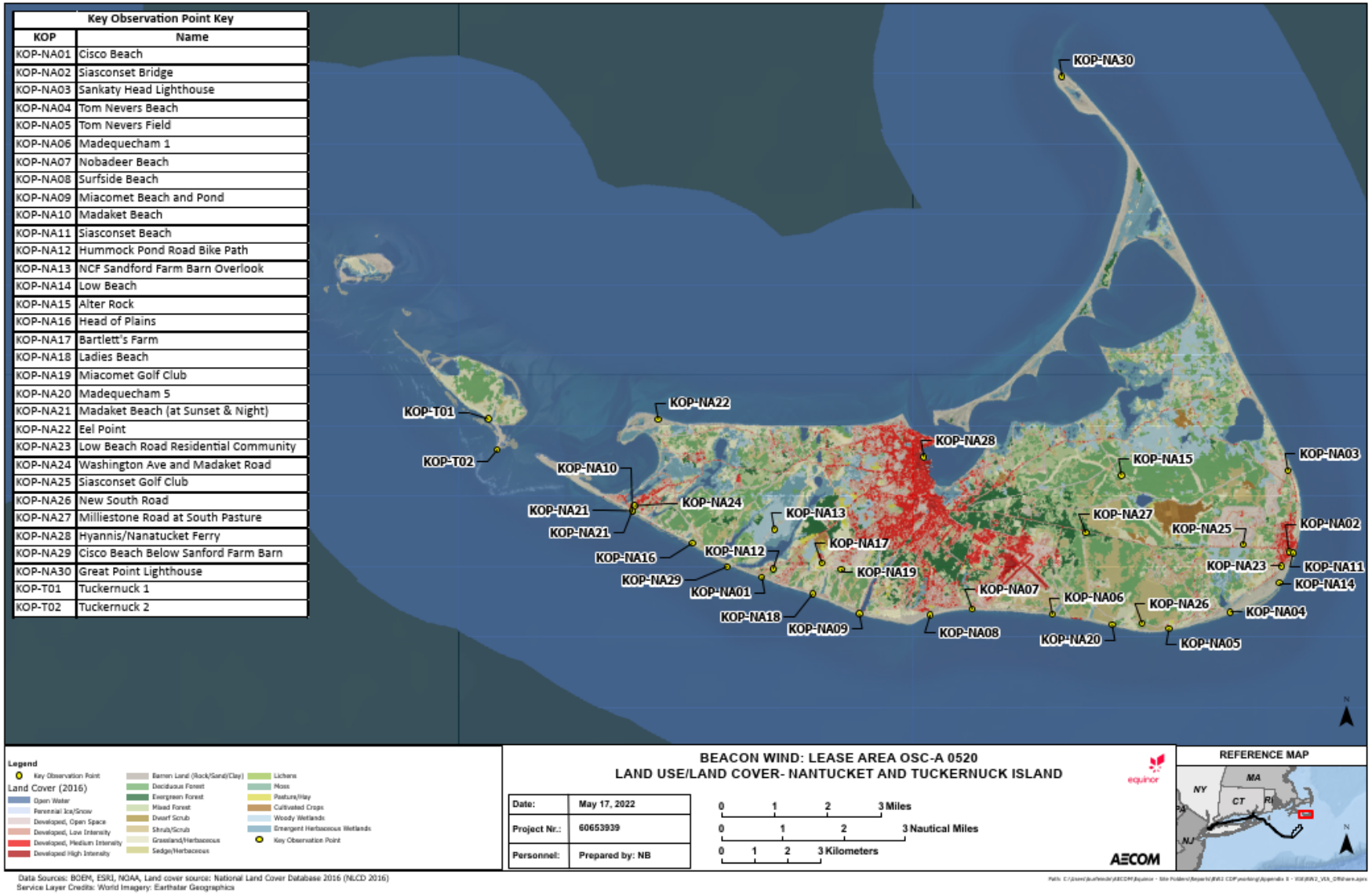


FIGURE X.5-8. LAND USE/LAND COVER – CAPE COD

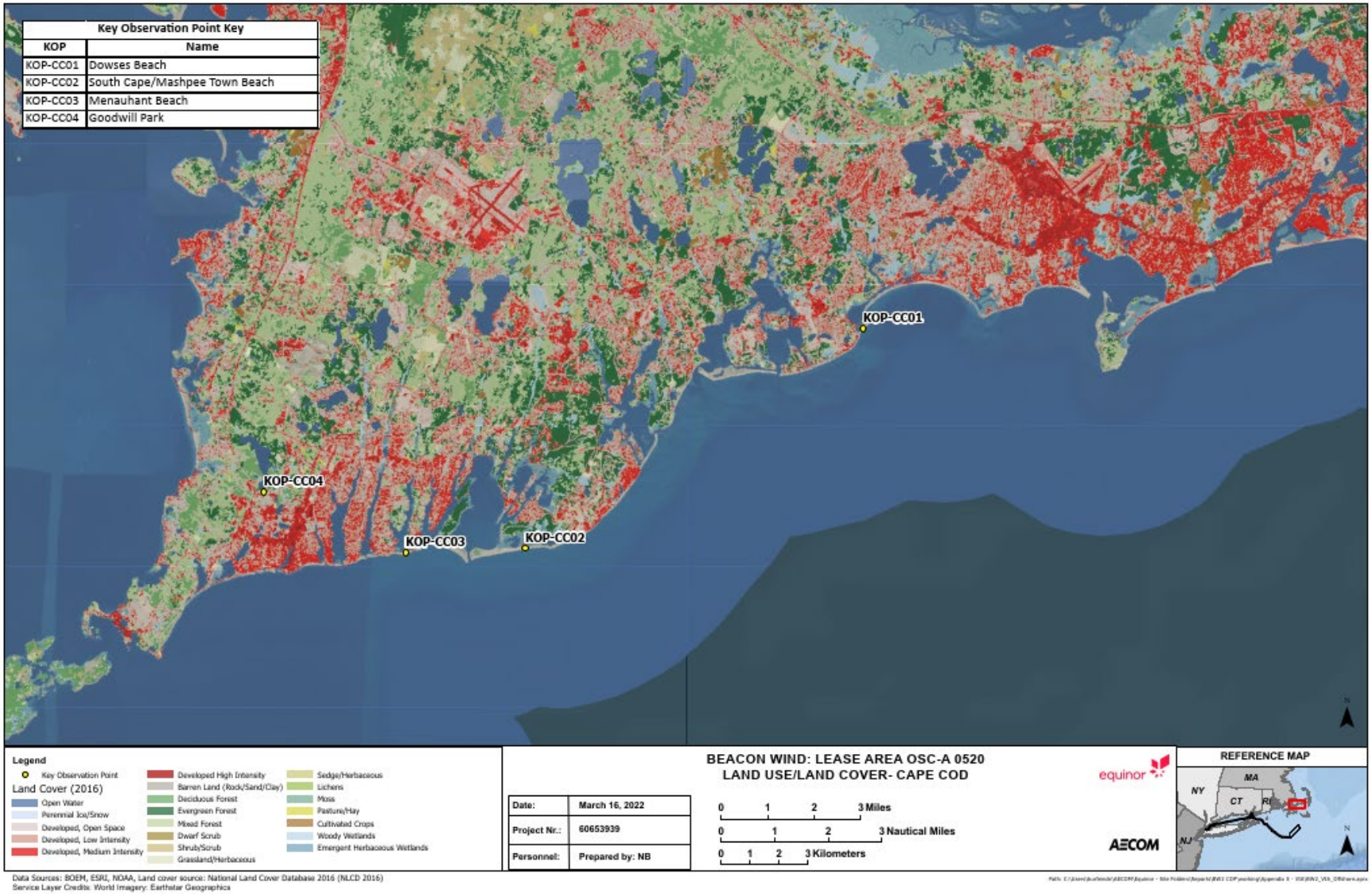
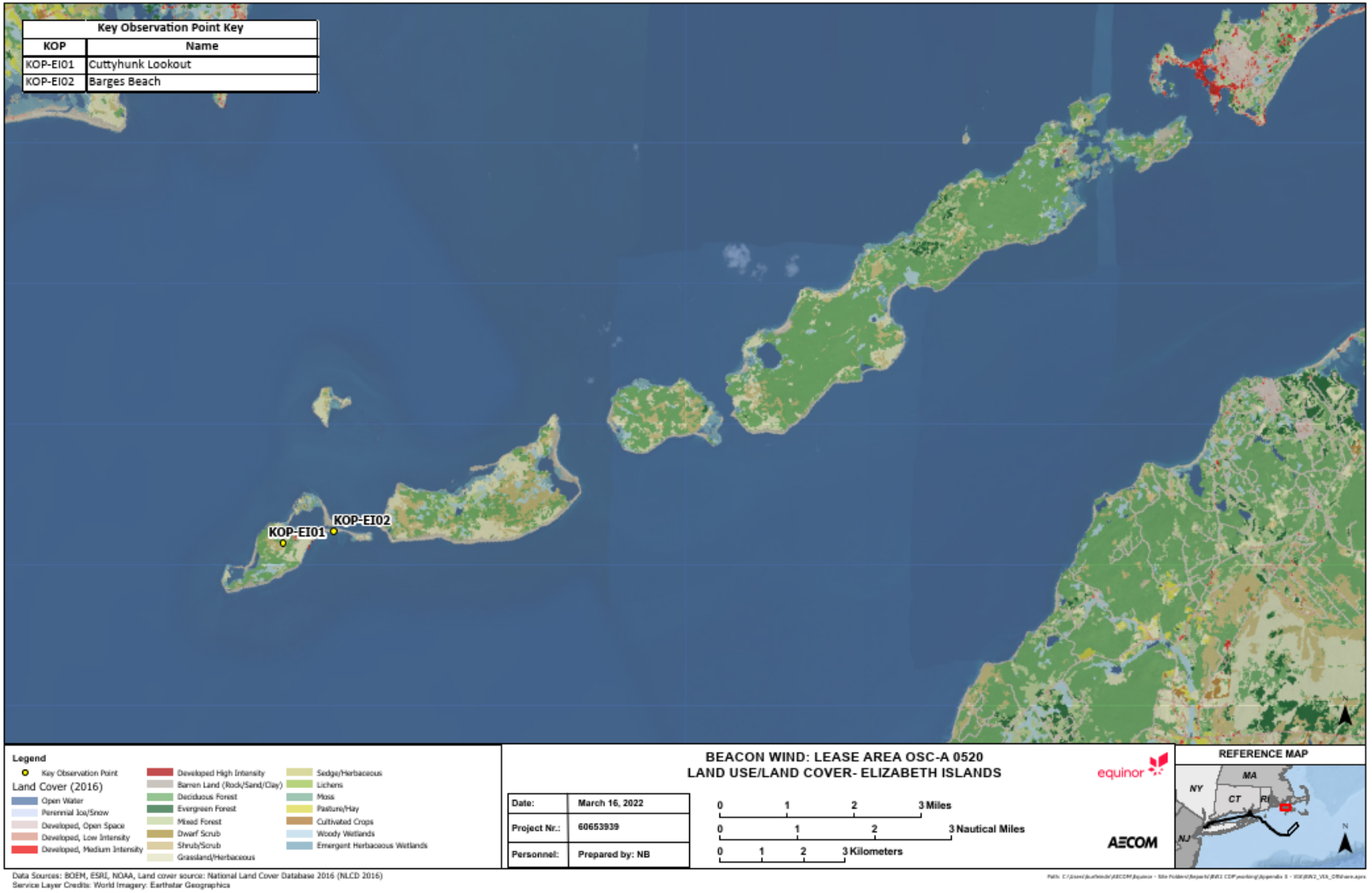


FIGURE X.5-9. LAND USE/LAND COVER – ELIZABETH ISLANDS



X.5.1.1.3 Land Use

Martha's Vineyard

Martha's Vineyard is well settled, comprised of a mix of small towns and villages linked by a more dispersed settlement pattern. Within the main towns, properties are densely arranged along a fine-grained pattern of streets. The majority of properties are detached, two-story houses with front yards and back gardens. Typically, property boundaries consist of low fences (wood post or picket) or hedges. Towns and villages are well-vegetated and mature trees often line the streets. Views within the towns are largely contained by built development and vegetation, except where the town extends to the coastal edge, such as Edgartown and its harborside. There are six main towns and villages within Martha's Vineyard. These are:

- Edgartown, which is located in the east of Martha's Vineyard and is the largest town on the island, is located on Edgartown Harbor, and provides a ferry connection to the island of Chappaquiddick.
- Tisbury (or Vineyard Haven) is located on the north coast of Martha's Vineyard, on the Vineyard Haven Harbor. The town is connected by a causeway to the town of Oak Bluffs.
- Oak Bluffs is located on the north coast of Martha's Vineyard, to the east of Tisbury. It is separated from Tisbury by Lagoon Pond and the Vineyard Haven Harbor. The town is laid out in a more regular grid pattern than development at Tisbury and Edgartown. It is known for its distinct cottages.
- West Tisbury is located to the southwest of Tisbury. It has a dispersed pattern of development, and houses are located on a loose road network characterized by cul-de-sacs. Properties are generally located within dense woodland.
- Chilmark is a small village located at the junction of S Road and Menemsha Road – two of the main roads in Martha's Vineyard. Like West Tisbury, the village's layout is dispersed, with properties located within woodland and accessed via narrow local roads and cul-de-sacs.
- Aquinnah is located on the southwestern point of Martha's Vineyard. There is no obvious center to the village and properties are dispersed evenly across the area, with some denser development to the north and west. Properties are largely located within areas of woodland.

A more dispersed residential development pattern is present outside the main town boundaries. Houses sit amongst areas of woodland and have increased privacy due the screening afforded by this tree cover. Along the coast, large houses occupy large land parcels and generally have aspect towards the ocean, with many beach properties evident.

The Manuel F. Correllus State Forest is located within the center of the island, south of Vineyard Haven and east of West Tisbury. The Wampanoag Tribe of Gay Head (Aquinnah) of Massachusetts reservation is located on the west coast of the island. Pockets of conservation land are present across the island, covering areas of woodland, scrub, and grassland.

Given its location within the Atlantic Ocean, land use on Martha's Vineyard includes marinas and maritime infrastructure, including ferry terminals at Tisbury and Oak Bluffs, as well as lighthouses, which are found in locations along coastlines in proximity to larger towns. Roads across the island are numerous, with the key routes providing access to the main towns and clusters of residential properties. Smaller roads extend from these to connect dispersed houses across the island. The Martha's Vineyard Airport occupies a large area of land to the south of the Manuel F. Correllus State

Forest, to the south of Tisbury. Associated large-scale commercial buildings are present to the east of the airport runways.

Nantucket

Similar to Martha's Vineyard, residential development is present across the majority of Nantucket Island. Nantucket is the main town, located in the north of the island at the western end of Nantucket Harbor. This urban area extends from the north coast and along the western edge of the Nantucket Harbor to the south across the central portion of the island. Views from this area are generally contained by built development and vegetation.

The center of the township is located in the north. However, the town envelope extends towards the south coast, and some linear development is present along the southern edge of the harbor where more open views across the coast and water are present. Out of this central area of the town are neighborhood areas/ villages which include Tom Nevers and Siasconset to the east of the island and Dionis, Eel Point, Madaket and Smith Point to the west. These areas are generally comprised of larger houses connected by a series of local roads. Properties located inland are often surrounded by woodland and therefore the views are largely contained; however, those closer to the coast are positioned to have aspect out to sea.

Large areas of conservation land are present on the eastern portion east of the island, with smaller pockets to the west, and across the western islands. These areas are generally managed for biodiversity purposes. Some small areas of agriculture are present to the east and south of Nantucket; however, this is not a common land use. A small number of golf courses are also located on the edges of villages.

There is an extensive network of roads throughout the island, providing vehicular access connecting to minor villages, with a greater concentration of roads within and around the main Town of Nantucket. Transport facilities also include marinas and maritime infrastructure (including lighthouses), generally in locations where there are larger towns or villages. The Nantucket Memorial Airport is a large area of development on the island's southern coast, and an area of associated industrial development is present on the airport's northern boundary.

Cape Cod

The southwest section of Cape Cod within the 46 mi (74 km) APSLVI, has significant residential development of low, medium, and high intensity, concentrated mostly along the coastline and along the waterways. The Cape Cod towns within the 46 mi (74 km) APSLVI include Falmouth, Mashpee, Barnstable and Yarmouth. Falmouth is the second-largest municipality on Cape Cod and is the closest mainland point to the islands of Martha's Vineyard and Nantucket, where the Woods Hole ferry service terminal is located. Falmouth has a village center with small retail shops and restaurants, as well as the Woods Hole village where the ferry terminal and Woods Hole Oceanographic Institute are located. The southern portion of the town, adjacent to ocean, is well settled with several public beaches along the water.

Mashpee, located to the east of Falmouth, is comprised of residential, retail, and conservation land uses. Mashpee has concentrated residential development along the coast, including the private New Seabury development. Inland, Mashpee Commons is a retail/commercial development along Route 28. It is also home to the Mashpee Wampanoag Tribe.

Barnstable is the largest community on Cape Cod with dense residential development with a mix of smaller, two-story 'Cape' style homes and larger homes. It is known for its beaches, historic destinations, such as the Kennedy Compound, and shops. Barnstable has several villages within its boundaries including Hyannis where the island ferry terminal is located.

West Yarmouth is a mix of densely populated residential town center and larger howes on larger lots. It surrounds Lewis Bay, where the Hyannis Ferry service connects the Cape to the islands of Martha's Vineyard and Nantucket.

Elizabeth Islands

The island chain is primarily privately owned and generally uninhabited. Cuttyhunk is the only island in this chain that has public access through the ferry service. There is a small village including a small concentration of homes on the eastern section of the island, adjacent to the ferry landing. The remainder of the island is mostly open space. Residential development on Cuttyhunk is concentrated on the northeast section of the island, adjacent to the ferry landing. Views from this area are generally wide and open, with minimal block from any built development or vegetation. The remainder of the island is predominantly undeveloped with sporadic homes located along the southern edge of the island. The highest point on the island, at the Cuttyhunk Lookout, affords 360-degree views around the island and out to the sea.

The other Elizabeth Islands, with the exception of Penikese Island, are privately owned.

X.5.1.1.4 Transportation Routes and Public Recreation

The south coast of Martha's Vineyard and Nantucket is generally accessible to the public through beach access agreements with the local conservancy organizations. As a practical reality, not all of these can be assessed individually. Therefore, a representative selection of the publicly accessible receptors across Cape Cod and the islands are shown in **Figure X.5-10**, **Figure X.5-11**, **Figure X.5-12**, and **Figure X.5-13** and are described below in **Table X.5-1**.

Martha's Vineyard

Access to Martha's Vineyard is by sea or air. The Martha's Vineyard Airport is in the center of the island, south of Tisbury. The ferry terminals at Tisbury and Oak Bluffs provide connections to and from Nantucket and from Woods Hole, on Cape Cod. These ferry routes pass along the northern coast of the island. There are no ferry routes to the south of Martha's Vineyard however waters off the southern coast are used for commercial shipping and recreational boating/ sailing, etc. Transport within Martha's Vineyard is predominantly via the road network. There are no railway lines or other modes of off-road public transport. The key routes through the island are:

- State Road, connecting Tisbury with West Tisbury, and then connecting Chilmark and Aquinnah in the south;
- Edgartown Vineyard Haven Road which connects Tisbury with Edgartown;
- County Road, which provides access from Edgartown Vineyard Haven Road to Oak Bluffs;
- Edgartown West Tisbury Road, connecting Edgartown with West Tisbury; and
- South Road and North Road which forms a circular route between Chilmark and West Tisbury.

These key routes are two-way, often bordered by dense woodland or scrub vegetation. A network of smaller, local roads is present across much of the island between these key routes. These local roads

are generally single lane or narrow two-way streets, which have cul-de-sacs that extend from them. Beach Road is the single coastal road on the northeastern side of the Island and extends between Vineyard Haven, Oak Bluffs and Edgartown. Residential routes provide access to houses along the coast, but generally don't follow the coastline closely.

Nantucket

Like Martha's Vineyard, access to Nantucket is via air or sea only. Nantucket Memorial Airport is located to the east of the town of Nantucket, near the south coast. Ferries land on the island at Nantucket Harbor from Oak Bluffs on Martha's Vineyard, and from Hyannis on Cape Cod. As for Martha's Vineyard, these routes track along the northern coast of the island. There are no ferry routes located to the south of Nantucket. There are no rail links on Nantucket. Access within the island is via the road network. There are no key routes that provide access along the coastal edge. The key routes through the island are:

- Poplis Road and Milestone Road provides a circular route from the eastern edge of Nantucket town to the neighborhoods of Poplis, Siasconset and Tom Nevers;
- Madaket Road provides a link to the west of the island, connecting Nantucket with Madaket and Smith Point/ Madaket Beach;
- Cliff Road extends from Nantucket and provides a link to Madaket Road, passing across the northern edge of Nantucket;
- The loop created by Milk Street Extension/ Hummock Pond Road/ Somerset Lane/ Bartlett Road provides access around the western edge of Nantucket; and
- Surfside Road/ Fairgrounds Road/ Pleasant Street provides a link to the southeastern edge of Nantucket town area, connecting to Milestone Road/ Poplis Road.

Cape Cod

The main roadway access to the southwest section of Cape Cod is Route 28 that connects onto the Cape from the north via the Bourne Bridge and then connects Falmouth, Mashpee, and Barnstable. Ferries to Martha's Vineyard and Nantucket are located in Woods Hole in Falmouth and Hyannis in Barnstable. There is rail service from Boston to Hyannis. The Cape Cod Airfield and Barnstable Municipal Airport are just north of the 46 mi (74 km) limit in Falmouth and Barnstable.

Elizabeth Islands

The only access to the Elizabeth Islands is via the sea. There is one ferry out of New Bedford, Massachusetts that provides access to Cuttyhunk. There are small, minor roads on Cuttyhunk, but most travel is either by walking, bike, or golf cart.

FIGURE X.5-10. TRANSPORTATION ROUTES AND RECREATIONAL RECEPTORS – MARTHA'S VINEYARD

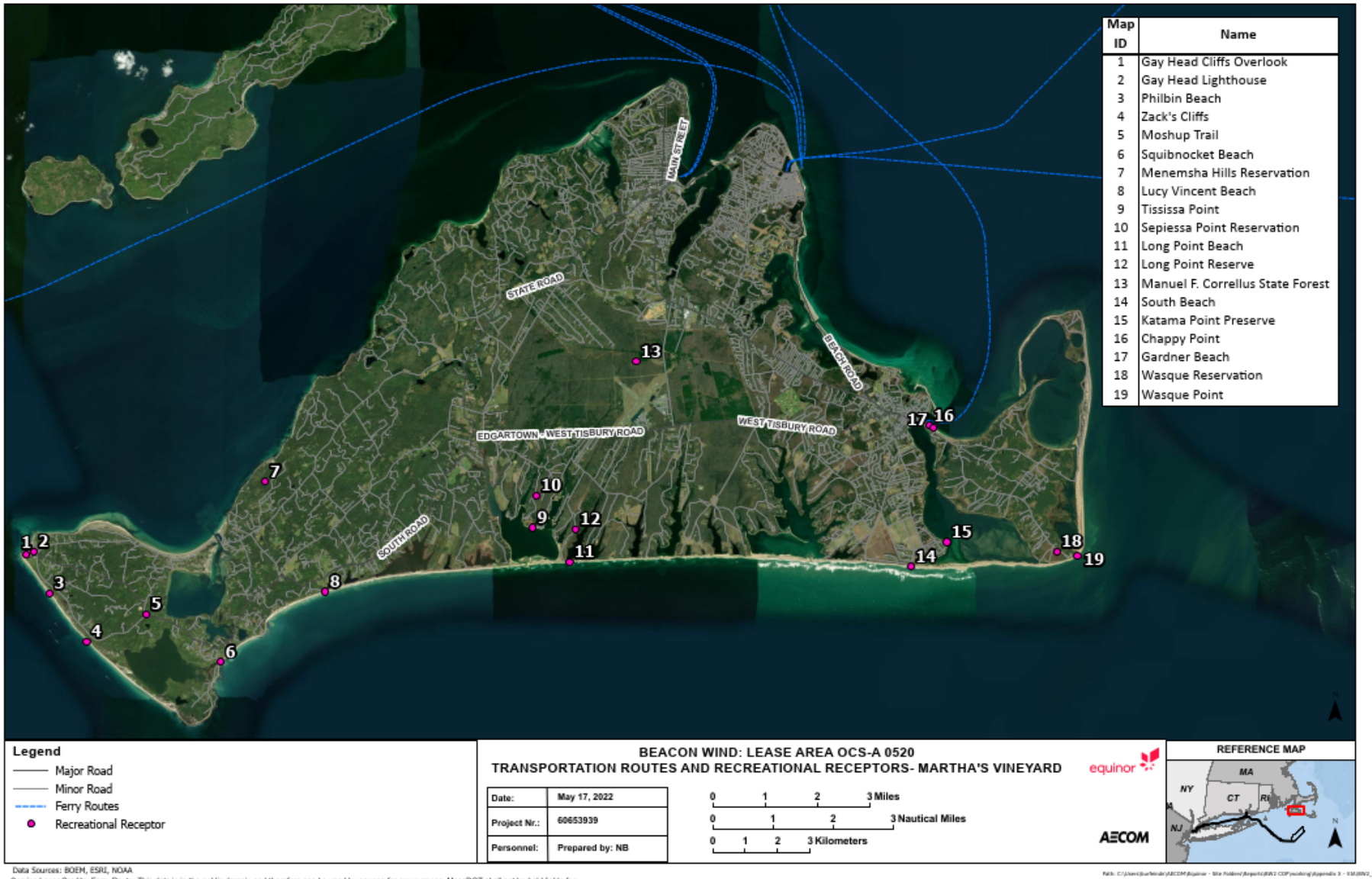


FIGURE X.5-11. TRANSPORTATION ROUTES AND RECREATIONAL RECEPTORS – NANTUCKET AND TUCKERNUCK ISLAND

FIGURE X.5-12. TRANSPORTATION ROUTES AND RECREATIONAL RECEPTORS – CAPE COD

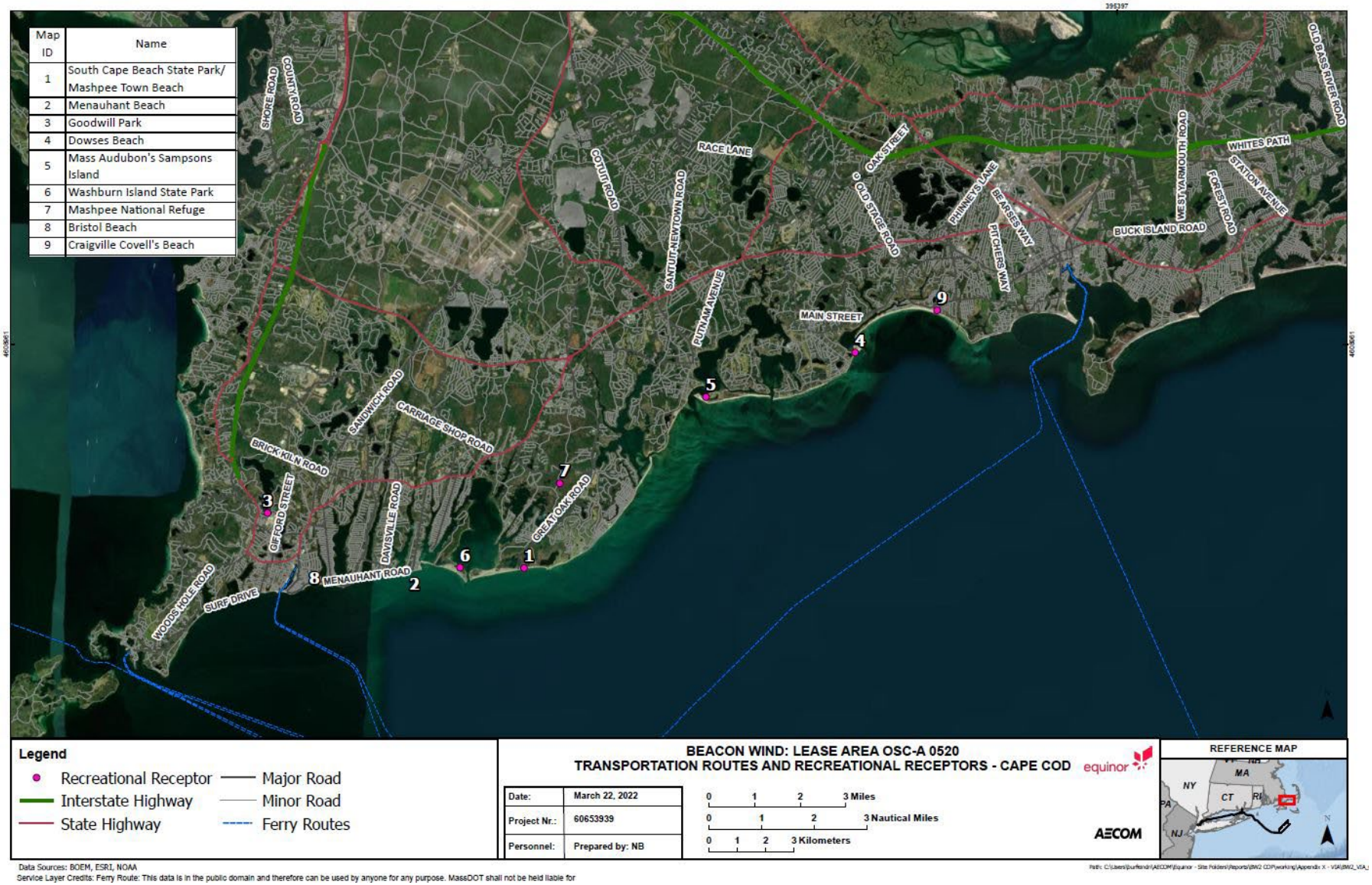


FIGURE X.5-13. TRANSPORTATION ROUTES AND RECREATIONAL RECEPTORS – ELIZABETH ISLANDS

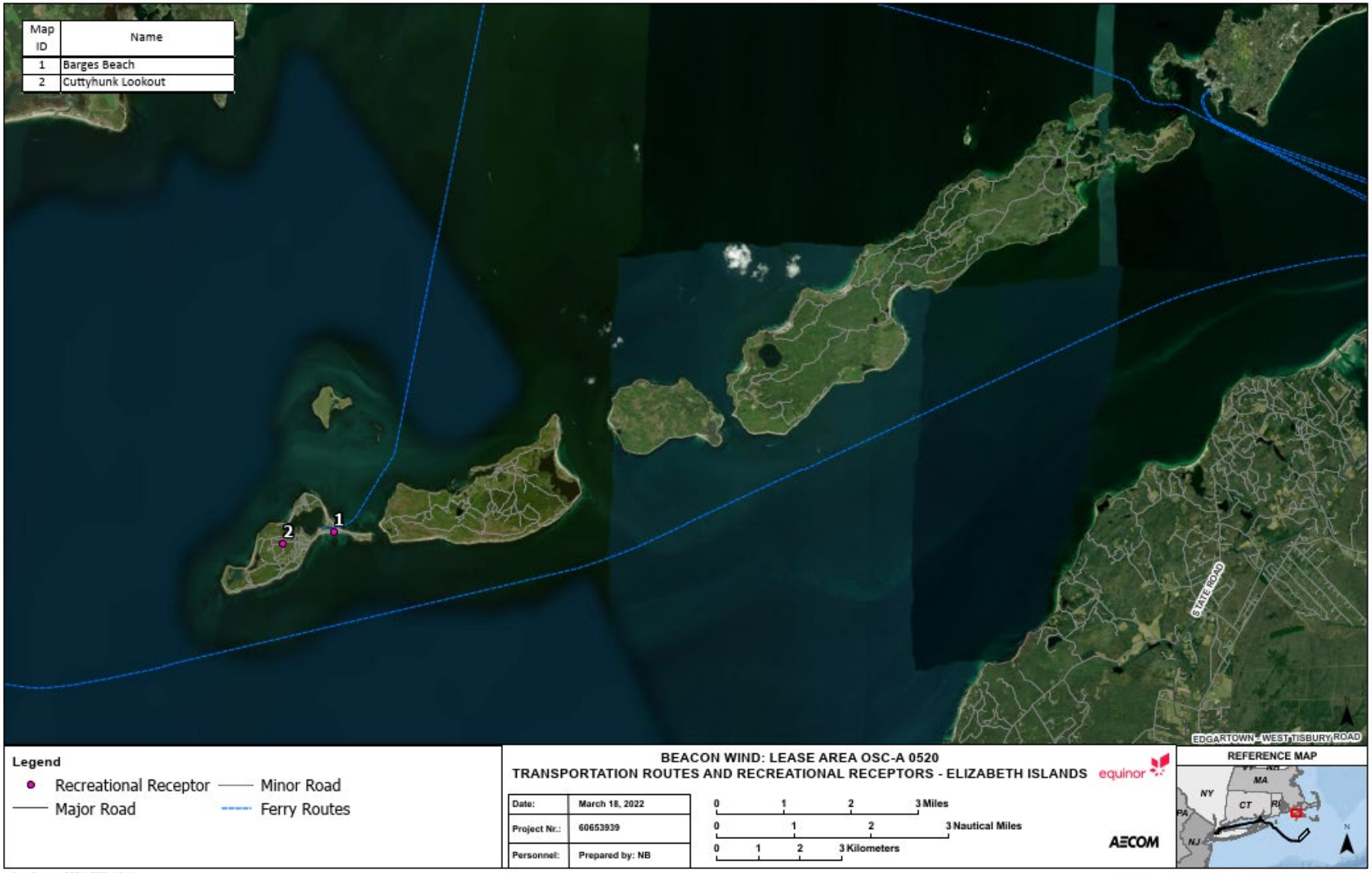


TABLE X.5-1. RECREATIONAL RECEPTORS ON MARTHA'S VINEYARD AND NANTUCKET

Recreational Receptor Location	Distance to Project	Description
Martha's Vineyard		
Manuel F Correllus State Forest	30 mi (48 km)	The state forest covers an area of 5,189 ac (2,100 ha) within the center of Martha's Vineyard, bordering Martha's Vineyard Airport and extending into the towns of West Tisbury and Edgartown. It is the focus of one of the largest environmental restoration projects in the U.S., and includes areas of grassland, heathlands, pine barrens and woodlands. The forest offers 14 mi (23 km) of trails for hiking, cycling, horseback riding and cross-country skiing. Views out from within the park are generally constrained by vegetation.
Menemsha Hills Reservation	31 mi (50 km)	Menemsha Hills Reservation is a protected nature reserve located near Chilmark in the west of Martha's Vineyard. The reserve contains 3 mi (4.8 km) of walking trails which pass through areas of woodland and wetland. The hill tops provide views across Aquinnah, Menemsha Pond, and the north shore.
Wasque Reservation and Wasque Point	24 mi (39 km)	Wasque Reservation is a 200 ac (81 ha) nature reserve on Chappaquiddick Island, established as a reservation for the public. The reservation is promoted for its sandy beach which can be reached via trails through scrub oak and pine vegetation. The reservation is relatively remote, accessed by ferry from Edgartown. The reservation is noted for its recreational fishing opportunities. Wasque Point offers cliffside views over the beach to the ocean. Views are largely directed to the east due to the presence of vegetation, however some southern views are glimpsed through existing tree growth. Views out from the beach along the shoreline are unobstructed.
Chappy Point, Gardner Beach	27 mi (43 km)	Located on Chappaquiddick Island, seven hundred feet of beach are located at the point where the Katama Bay and Edgartown Harbor meet. The Edgartown lighthouse and the North Neck bluffs sit opposite the beach and the inlet used by people partaking in water-based activities throughout the summer.
Katama Point Preserve	25 mi (40 km)	Katama Point preserve is an open, grassy, and flat area of coastline which provides expansive, open views north to Edgartown, east across Katama Bay, and south to Norton Point Beach and beyond. Swimming is prohibited but activities such as fishing and cycling are permitted.
South Beach	25 mi (40 km)	South Beach is identified as one of the most popular public beaches on the Island. It is located on the south coast of Martha's Vineyard, south of Edgartown. It is a sandy beach, which stretches for approximately 3 mi (4.8 km). It is bounded to the north by sand dunes. Views extend across the ocean to the south and are unobstructed. The beach has lifeguard facilities and is used for swimming, surfing, sand-based sports (i.e., beach volleyball).

Recreational Receptor Location	Distance to Project	Description
Long Point Reserve and Beach	27 mi (43 km)	Located midway along the south coast is the Long Point Reserve, one of the largest publicly accessible areas on Martha's Vineyard. The Reserve includes beach, dune, and woodlands and includes a rare sandplain heath. The reserve is popular with birders and other nature-watchers. Dunes along the coastline reach 6-8 ft (1.8-2.4 m) in height. These features largely obstruct views towards the coast from within the Reserve however for beach users, open and expansive views across the open water and along the coastline are available.
Sepiessa Point Reservation, Tississa Point	28 mi (45 km)	The 430 ac (174 ha) Sepiessa Point Reservation includes walking trails, which extend along the shores of Tiah and Tississa Coves. Ocean swimming is available to visitors with boats. Other activities include kayaking, horse riding, mountain biking, fishing etc. Much of the reservation is predominately wooded, although grasslands and low growing vegetation are present near the shorelines. A beach at the southerly extent of the reservation is wide and sandy. Open views extend south across Tisbury Great Pond. Dunes on either side of the inlet in the south of the reservation vary in height and often obscure longer distance views to the ocean.
Lucy Vincent Beach	29 mi (47 km)	Lucy Vincent Beach comprises a combination of beach shoreline and cliffs roughly 35 ft (10.7 m) in height. At the shoreline southerly views across the open water are expansive and unobstructed. Inland of the beach the topography rises quickly and provides elevated views across the ocean. This beach is open to residents of Chilmark only.
Squibnocket Beach	29 mi (47 km)	A surf beach for use by Chilmark residents only. The sandy shoreline is interspersed with rocks and bounded by cliffs. Views from the beach are unobstructed and extend south across the open sea.
Zach's Cliffs / Moshup Trail	31 mi (50 km)	The Moshup Trail is a 3.6 mi (5.8 km) route, which follows the road to the Gay Head Lighthouse. The trail is located above the Aquinnah cliffs, and views across the coastline to the water are glimpsed from the trail/ road. A spur from the trail extends across an area of coastal scrub to the coastline, providing elevated and open views across the Atlantic.
Gay Head Lighthouse	33 mi (53 km)	Located on prominent cliffs on the western coast of Martha's Vineyard, the Gay Head Lighthouse is a landmark which is open to the public. Views from the lighthouse generally extend west and southwest, while views to the southeast are largely obstructed by vegetation and landmass in the foreground. Views from the top of the lighthouse may extend further to the southeast given the increased elevation.
Gay Head Cliffs Overlook	33 mi (53 km)	The Gay Head Cliffs Overlook is located on the western point of Martha's Vineyard. The overlook provides elevated views west across open water towards Nashawena Island and south across the Atlantic Ocean.

Recreational Receptor Location	Distance to Project	Description
Philbin Beach	32 mi (51 km)	Philbin Beach is a surf beach located near the clay cliffs on the southwestern coast of Martha's Vineyard. It is open to Aquinnah residents only.
Nantucket		
Great Point Lighthouse	32 mi (51 km)	Located on the northernmost point of Nantucket, the lighthouse sits on a thin spit of beach where the currents of the Atlantic Ocean and Nantucket Sound meet. The lighthouse is located within the Nantucket National Wildlife Refuge. Views from the beach and dunes which surround the lighthouse are open and expansive, and are largely directed to the north, to the east and southwest back towards the Nantucket land mass.
Low Beach	27 mi (43 km)	A relatively remote beach located between Siasconset and Tom Nevers. Views are expansive and extend east and west along the coast, and out to sea. The beach is bordered to the north by a broad swathe of low-lying sand dunes
Tom Nevers Field	25 mi (40 km)	Tom Nevers Field is open space on the south coast of Nantucket, used for sports, local markets, and other public activities. The field is set back from the shoreline by dunes and a small bluff, which is approximately 10-12-ft (3.1-3.7 m) in height which obstructs open and clear views to the coast.
Eel Point	22 mi (35 km)	At the north end of Madaket Harbor is Eel Point and the Eel Point Marsh. Eel Point is a nature conservation site, with important bird habitats. It is used by walkers and people visiting the Eel Point beach and saltwater lagoons. The area provides views north of Nantucket Sound and west over Madaket Harbor toward Tuckernuck. Eel Point has large dunes of approximately 12-15 ft (3.7-4.6 m) in height comprising a mix of grassed areas and scrub brush. Views south are generally obstructed by landmass at Smith Point and Esther Island.
Madaket Beach	20 mi (32 km)	Madaket Beach is located on the southwestern coast of the Nantucket mainland. It is noted as a popular location to watch the sunset and the long sandy beach provides open and expansive views to the south, the east and the west. Residential properties extend right up to the coastline in this area and there is little dunescape to provide a buffer between the coast and these properties.
Cisco Beach	21 mi (34 km)	A wide, sandy beach on the southern coast of Nantucket. Provides open and expansive views along the coastline and to the south across the open ocean. Popular with surfers and bodyboarders due to the strong rip currents and heavy surf.

Recreational Receptor Location	Distance to Project	Description
Miacomet Beach and Pond/ Surfside Beach/ Nobadeer	22 mi (35 km)	This location contains a long white sandy beach, known for its heavy surf and currents. The coastline connects to Miacomet Pond which extends inland. Residential properties occupy the coastal dunes to the north of the beach area. Views are east – west along the coastline, and south across the open ocean. Nobadeer Beach is located further to the east with views extending to the southeast, rather than directly south. It sits adjacent to the Nantucket Memorial Airport.
Cape Cod		
South Cape Beach State Park/ Mashpee Town Beach	38 mi (62 km)	South Cape Beach State Park is a Massachusetts state park and is part of the Waquoit Bay National Estuarine Research Reserve. The South Cape Beach and adjacent Mashpee Town Beach are public beaches in Mashpee, comprised of barrier beach, dunes, and a salt marsh along the coastline of the Nantucket Sound.
Manauhant Beach	39 mi (62 km)	This narrow public beach is the longest beach in Falmouth and is adjacent to Menauhant Road and the outlet for the Bourne's Pond, located in East Falmouth.
Goodwill Park	41 mi (66 km)	An 86 ac (35 ha) town-owned park in Falmouth, Goodwill Park has a freshwater beach at the kettle pond, Grews Pond, used by the community for swimming and fishing, as well as a trail network.
Mass Audubon's Sampsons Island	40 mi (65 km)	Managed as a wildlife and bird sanctuary by Mass Audubon, this is a limited access island in Barnstable, MA. It is located at the mouth of Cotuit Bay.
Washburn Island State Park	38 mi (62 km)	This is a 330 ac (134 ha) island is part of the Waquiot Bay National Estuarine Research Reserve and is managed by MassDCR, within the large salt pond, Waquiot Bay, located between the towns of Falmouth and Mashpee. The island is only accessible by boat and has trails and a barrier beach.
Mashpee National Wildlife Refuge	38 mi (62 km)	Located in Falmouth and Mashpee, this 5,871 ac (2,376 ha) accessible refuge has various habitats, including cedar swamps and cranberry bogs. Recreational uses include hiking, hunting, education, photography, and wildlife watching.
Bristol Beach	38 mi (62 km)	Bristol Beach is a narrow, public beach at the mouth of Little Pond, connecting to Vineyard Sound, adjacent to Falmouth Heights Town Beach. This beach has views of Martha's Vineyard across the Sound.
Craigville/ Covell's Beach	41 mi (66 km)	Craigville Beach is a public beach located in Centerville. Covell's Beach is the next beach east and is a resident only beach. These beaches are popular during the summer and are on the Nantucket Sound.

Recreational Receptor Location	Distance to Project	Description
Elizabeth Islands		
Barges Beach	40 mi (65 km)	Barges Beach is a low dune beach located on the eastern spit of land on Cuttyhunk Island, adjacent to the ferry landing and closest beach to the village. The beach provides views of Martha's Vineyard and the Atlantic Ocean. This is a privately held property, but public access is allowed.
Cuttyhunk Lookout Park	40 mi (65 km)	Lookout Park is the highest point on Cuttyhunk Island with 360-degree views around the island. It was a naval lookout during WWII. It has several trails and is a destination for bird watching.

X.5.1.1.5 Ecoregions

The U.S. Environmental Protection Agency (EPA) Level IV ecoregions of New England were used to inform the descriptions of the existing seascape/landscape character within the Offshore APSLVI (EPA 2021). Ecoregions provide a useful starting point for describing seascape/landscape character at a regional level because they are defined based on multiple elements, which include physiographic elements of landform, vegetation, water, and cultural modifications (defined as human/man-made modifications to the landscape such as urban development). The Level IV ecoregion that lies across both Martha's Vineyard and Nantucket is the Cape Cod Long Island Atlantic Coastal Pine Barrens ecoregion (84a).

The Cape Cod Long Island Atlantic Coastal Pine Barrens ecoregion (84a) is a transitional coastal plain with a mild climate. Sandy beaches, grassy dunes, sheltered bays, salt marshes, and oak-pine forests are characterizing features found across both Martha's Vineyard and Nantucket. Elevation across the islands is low, with little variation and soils are sandy and well-draining. Key elements that distinguish the Cape Cod/Long Island Atlantic Coastal Pine Barrens ecoregion from other coastal ecoregions across the U.S. are its maritime climate, areas of scrubby pine and oak forests, kettle ponds that indicate the glacial history of the islands, and the unique habitats found within the marshes, swamps, bogs, and sand dunes that are present across the islands.

X.5.1.1.6 Environmental Justice Communities

As discussed in **Volume 2e Section 8.4** of the COP the principles of Environmental Justice (EJ) are enforced through *Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, which requires federal agencies to take appropriate steps to identify and address disproportionately high and adverse health or environmental effects of federal actions on minority and low-income populations (EPA 1997).

The EJ analysis contained in **Volume 2e Section 8.4** relies upon data collected from the American Community Survey (ACS) through the U.S. Census Bureau, the EPA EJScreen, and the Massachusetts Executive Office of Energy and Environmental Affairs (MAEEA). Data for both the EPA EJSCREEN tool and MAEEA are presented at the census block group level.

EPA EJScreen provides reports and maps that can show a number of environmental and demographic indicators, one at a time. To summarize how an environmental and demographic indicator come together in the same location, EJScreen uses an EJ Index. To calculate the EJ Index at particular census block group level, EJScreen uses a formula to combine a single environmental factor with the demographic indicator. It considers how much the local demographics are above the national average. It does this by looking at the difference between the demographic composition of the block group, as measured by the Demographic Index, and the national average (which is approximately 35%). It also considers the population size of the census block group, although most block groups are similar in population size.

Martha's Vineyard and Nantucket do not contain census block groups meeting the EJ community thresholds defined via the EJ Index. One EJ census block group was identified via the EJ Index within the Offshore APSLVI in Barnstable, Massachusetts on the southern coast of Cape Cod, as displayed on **Figure X.5-16** where the EJ community is in relation to the SLCAs. The total area of EJ community within the 49-mi study area is 229 ac (93 ha), with 16% (36 ac [15ha]) of that area within TOB viewshed and 0.23% (0.53 ac [0.22 ha]) within hub viewshed. KOP CC-01 is used as a representative KOP for this EJ community.

X.5.1.1.7 Offshore Seascape, Landscape, and Ocean Character Areas

As noted, the ecoregion described above is considered a useful starting point for understanding the character of the seascape and landscape within the Offshore APSLVI. However, to understand the nature of the impact of the Project on the diverse landscapes found across Martha's Vineyard and Nantucket islands, a more refined characterization is required. Therefore, to assist in the assessment of impacts on landscape and seascape character, SLCAs and the OCA have been defined and delineated within the Offshore APSLVI. To promote consistency between analyses, these SLCAs have been aligned with the areas categorized by the Vineyard Wind 1 VIA, which was produced as part of the Vineyard Wind 1 COP. The SLCAs are distinct areas of seascape or landscape that have a generally consistent character, often sharing combinations of geology, topography, drainage patterns, vegetation, and historical land use and residential development patterns, and perceptual and aesthetic attributes.[6] There are no landscapes formally designated[7] for their landscape value within the APSLVI. Therefore, landscapes are not included in the assessment.

The following 14 SLCAs have been categorized within the APSLVI which would be subject to theoretical visibility of the Project:

- Ocean (OCA);
- Marine Bay (SCA);
- Ocean Beach (SCA);
- Coastal Dunes (SCA);
- Coastal Bluffs (SCA);
- Salt Ponds/Tidal Marsh (LCA);
- Coastal Scrub (LCA);

[6] Landscape Institute and IEMA Guidelines for Landscape and Visual Impact Assessment (3rd Edition) Page 156 (LI/IEMA 2013)

[7] Areas of landscape identified as being of importance at international, national, or local levels, either defined by statute or identified in regulatory or planning documentation.

- Forests/Woodlands (LCA);
- Fields/Meadows (LCA);
- Village/Town (LCA);
- Rural/Suburban Residential (LCA);
- Low Density Rural Settlement (LCA);
- Light Industrial Land (LCA); and
- Parks/Developed Recreation (LCA).

The largest single character area is the OCA, comprising 6,267,256 ac (2,536,271 ha) within the 46 mi (74 km) APSLVI. SCAs are areas of coastal landscape that have shared inter-visibility between land and sea. There are five SCAs defined within the APSLVI. The remainder of the character areas fall into the LCA category. The SLCAs are further described in **Table X.5-2** below. The table includes a discussion of the SLCA's susceptibility and value in accordance with the BOEM SLVIA Methodology. A representative location and image of each SLCA is included in the table. Their location and extent are illustrated in **Figure X.5-14** through **Figure X.5-17**.

FIGURE X.5-14. SEASCAPE/LANDSCAPE CHARACTER AREAS – MARTHA'S VINEYARD

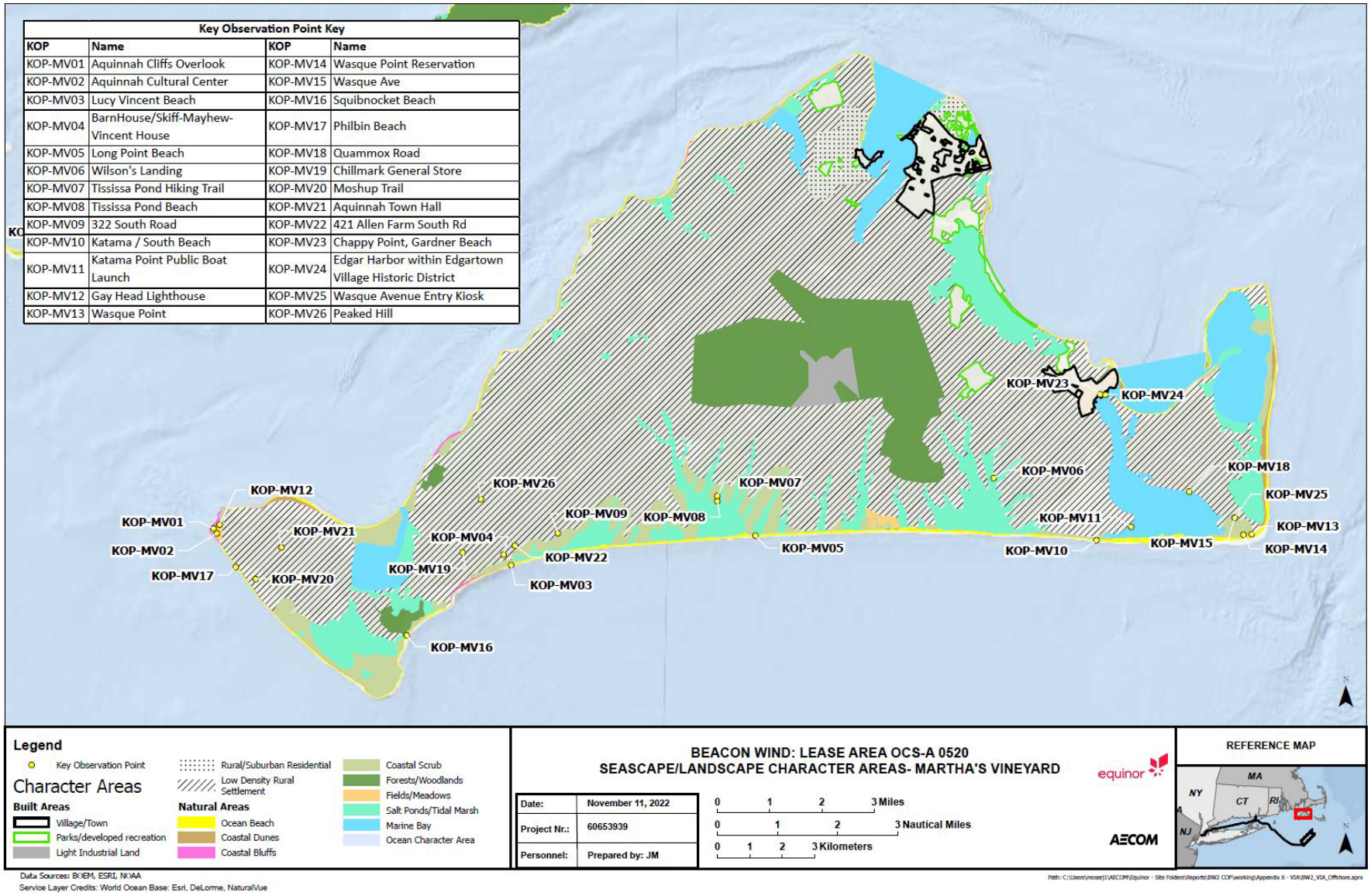


FIGURE X.5-15. SEASCAPE/LANDSCAPE CHARACTER AREAS – NANTUCKET AND TUCKERNUCK ISLANDS

Key Observation Point Key	
KOP	**Name**
KOP-NA01	Cisco Beach
KOP-NA02	Siasconset Bridge
KOP-NA03	Sankaty Head Lighthouse
KOP-NA04	Tom Nevers Beach
KOP-NA05	Tom Nevers Field
KOP-NA06	Madequecham 1
KOP-NA07	Nobadeer Beach
KOP-NA08	Surfside Beach
KOP-NA09	Miacomet Beach and Pond
KOP-NA10	Madaket Beach
KOP-NA11	Siasconset Beach
KOP-NA12	Hummock Pond Road Bike Path
KOP-NA13	NCF Sandford Farm Barn Overlook
KOP-NA14	Low Beach
KOP-NA15	Alter Rock
KOP-NA16	Head of Plains
KOP-NA17	Bartlett's Farm
KOP-NA18	Ladies Beach
KOP-NA19	Miacomet Golf Club
KOP-NA20	Madequecham 5
KOP-NA21	Madaket Beach (at Sunset & Night)
KOP-NA22	Eel Point
KOP-NA23	Low Beach Road Residential Community
KOP-NA24	Washington Ave and Madaket Road
KOP-NA25	Siasconset Golf Club
KOP-NA26	New South Road
KOP-NA27	Milliestone Road at South Pasture
KOP-NA28	Hyannis/Nanatucket Ferry
KOP-NA29	Cisco Beach Below Sanford Farm Barn
KOP-NA30	Great Point Lighthouse
KOP-T01	Tuckernuck 1
KOP-T02	Tuckernuck 2

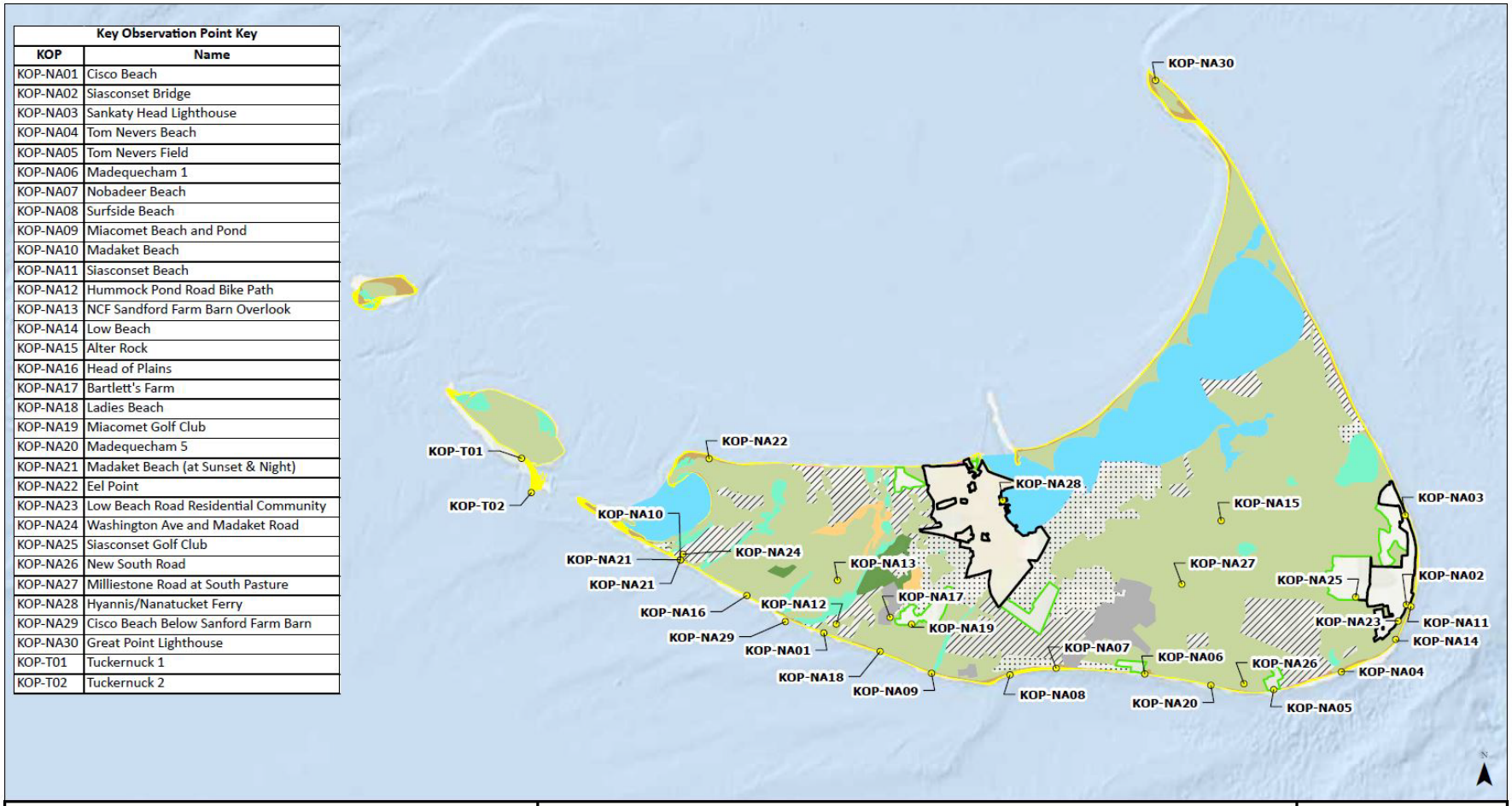


FIGURE X.5-16. SEASCAPE/LANDSCAPE CHARACTER AREAS – CAPE COD

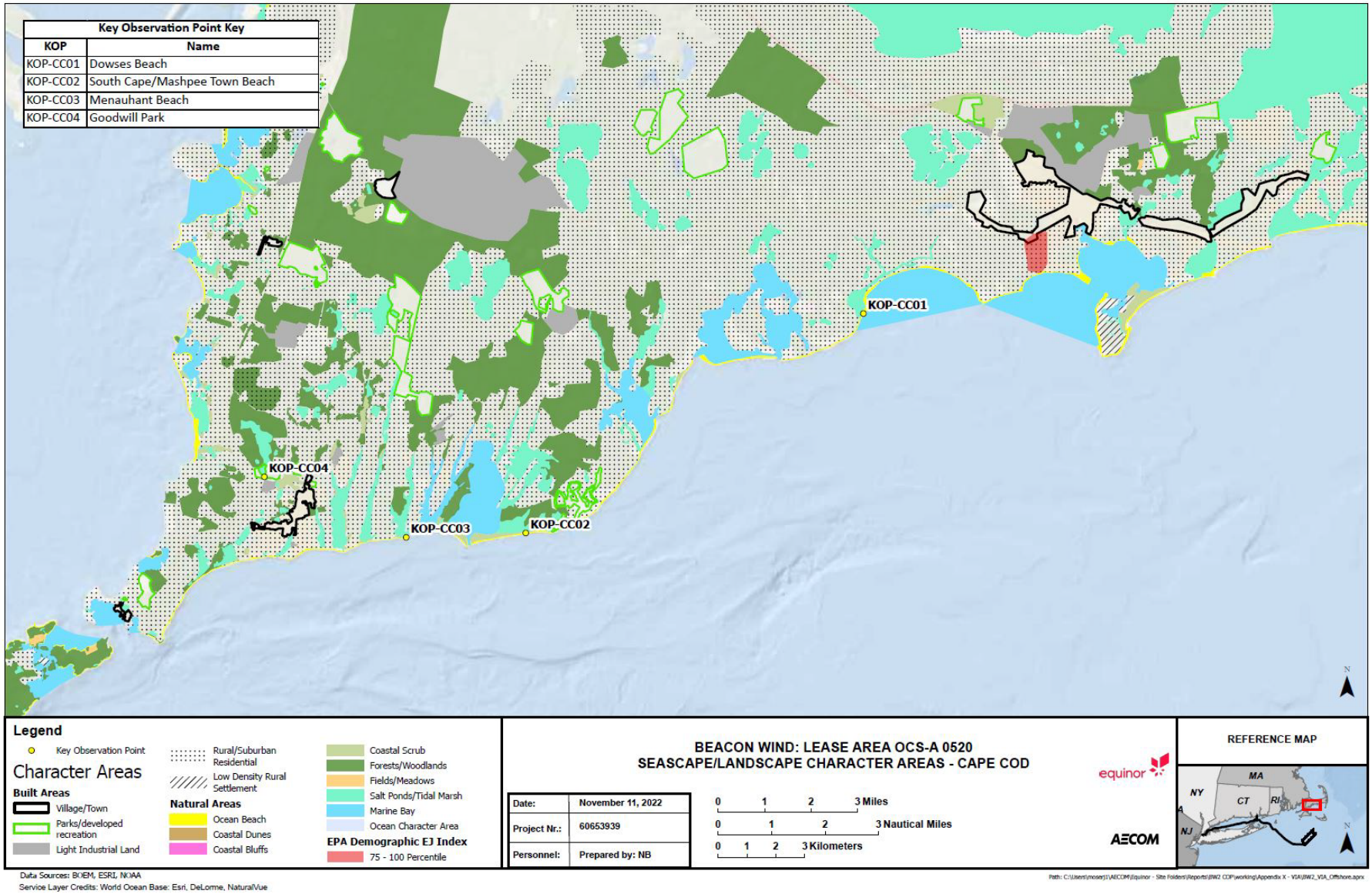


FIGURE X.5-17. SEASCAPE/LANDSCAPE CHARACTER AREAS – ELIZABETH ISLANDS

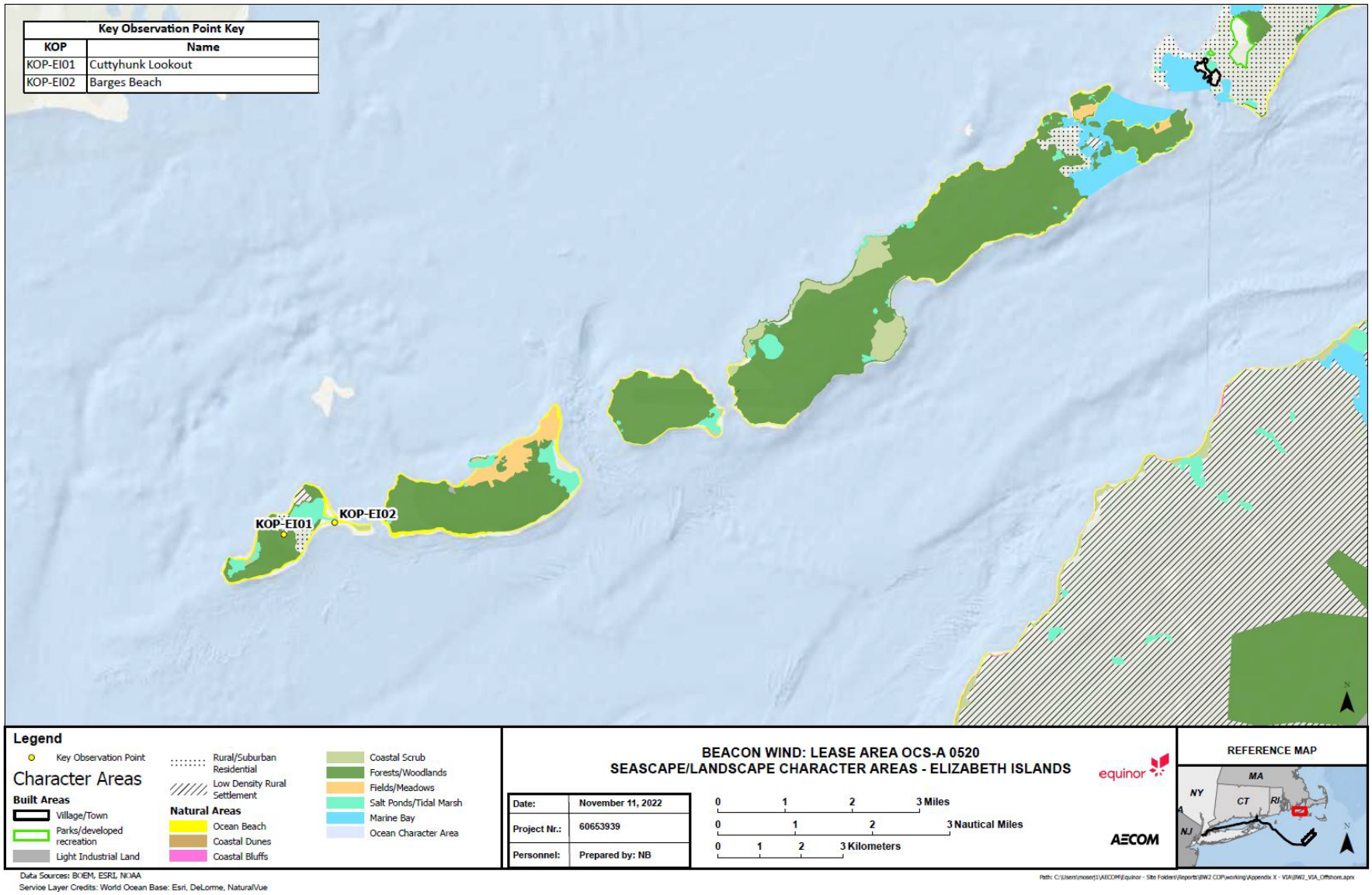


TABLE X.5-2. SEASCAPE/LANDSCAPE CHARACTER AREAS

Seascape/Landscape Character Area (SLCA)	Description
Ocean Character Area (OCA) Atlantic Ocean View from Madaket Beach, Nantucket 	**Location and Extent** This is the largest character area in the APSLVI. The OCA comprises open water out offshore from the coastline and includes the offshore components of the project. Protected marine bays have been excluded from the OCA. **Key Characteristics** • Broad expanse of open water with a low horizon, making it highly susceptible to change. • Highly valued OCA due to scenic qualities and recreational uses. • Dynamic character highly influenced by changeable weather patterns. • Varied texture predominantly attributed to wave formations. • Variations in water color (created by weather influences) and patterns of light create visual interest. • Open water is marked by navigational aids, including buoys, channel markers, and warning lights. • Used for commercial fishing, shipping, and ferry services. • Nighttime character is influenced by reflections of light across the water, (i.e., moonlight, boats and ships, and navigational aids). • Perception of the OCA is changeable and can vary substantially. Large, white topped waves evoke a sense of wildness and danger during weather events. In contrast, in situations where the OCA is calm and gentle, the sights and sounds can evoke a sense of tranquillity and relaxation. • Experience of the Ocean is heavily influenced by the character of the neighboring Ocean Beach, Coastal Dunes, and Coastal Bluff SCAs, particularly at the edge of the SCA. In turn, the OCA contributes to the scenic value and sense of place at the Ocean Beach, Coastal Dunes, and Coastal Bluff SCAs. • Views from the OCA to the offshore turbines are unobstructed by land.

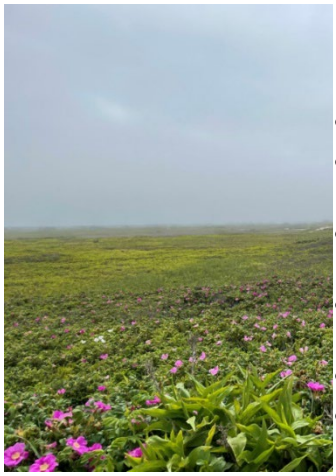
Seascape/Landscape Character Area (SLCA)	Description
Marine Bay (SCA) Entryway to Nantucket Harbor 	**Location and Extent** This SCA is located along the coastlines of Nantucket, Martha's Vineyard, Cape Cod, and a small part of Elizabeth Island and includes the tidally influenced bodies of open water that are partially enclosed by the curving shorelines. These bays are often uses as harbors and for recreational boating. Bays along the islands are more commonly found on the northern side of the islands where they are less exposed to the OCA. Cape Cod has an abundance of bays along the southern and western coastlines. **Key Characteristics** • Dynamic character highly influenced by changeable weather patterns and the adjacent OCA. • Medium susceptibility due to the sometimes complex shorelines resulting from built forms from homes, villages, or industrialization with the potential for mitigation. • Varied texture attributed to wave formations, built structures, woodlands, and beach fronts along the coastal edges surrounding bays. • Variations in color (created by weather influences) and patterns of light create visual interest. • Bays are marked by navigational aids, including buoys, channel markers, and warning lights. • Important recreational and transportation resource, where many people keep their boat, have beach fronts or docks along the bay, and ferries go to and from. The bay is used for sailing, water sports, recreational fishing, swimming, etc, making this a highly valued SCA. • The combination of Marine Bays have medium susceptibility due to their complex and dynamic nature with some ability to combat changes and are highly valued due to their many uses and scenic views. This combination creates a highly sensitive SCA. • Nighttime character is influenced by reflections of light across the water, (i.e., moonlight, village/towns, residential homes, boats and ships, and navigational aids). • Experience of Marine Bays are heavily influenced by the character of the neighboring Ocean Beach, Village/Towns, and Suburban/Residential SLCAs as well as the OCA, particularly at the edges of the SCA. • Bays are mostly enclosed by land, typically with land surrounding three sides. In some cases, views from the bay to the offshore turbines are across a stretch of beach or dune, while in others the turbines are blocked by land and positioning of the bay.

Seascape/Landscape Character Area (SLCA)	Description
Ocean Beach (SCA) Surfside Beach, Nantucket 	**Location and Extent** This SCA occurs along the majority of the coastlines of Nantucket, Martha's Vineyard, the Elizabeth Islands, and Cape Cod. **Key Characteristics** • Predominantly long, uninterrupted fine textured white sandy beaches that surround Nantucket and Martha's Vineyard islands and Cape Cod. • Cuttyhunk's beaches vary from fine textures, white and sandy, to having smooth cobbles and rocky shorelines. • Rocky outcrops and large boulders punctuate the sandy coast in places (e.g., Lucy Vincent Beach), creating minor landmark features with visual interest and texture. • Some small lengths of rocky coastline found along the western (and partial northern) coast of Martha's Vineyard. • High cliffs in the west of Martha's Vineyard create prominent landmark features when experienced from the beach. • Ocean Beach SCA is highly susceptible due to the essentially simple horizontal nature and wide open views across the OCA, limiting the potential for mitigation that would be consistent with its character. • High value due to tourist destinations and are valued by residents equally for their high scenic quality and both formal and informal recreational opportunities (i.e., sports games, sunbathing). • The combination of Ocean Beach being highly susceptible and highly valued creates for a highly sensitive SCA. • Strong sense of space, light, and exposure, and extensive visibility on the larger and more open stretches of sandy beach. • Dune systems (within the neighboring Coastal Dunes SCA) separate the beach from inland areas. Due to this, there is a contrast in the experience within the Ocean Beach SCA. In parts, the neighboring dune systems constrain and direct views out to open water from the sandy beaches. Where visitor numbers are low this can evoke a sense of naturalness and isolation. Where visitor numbers are higher, such as at public beaches, the perception of the Ocean Beach SCA is much different. • The perception of the Ocean Beach SCA during hours of darkness is influenced by glimpses of scattered lighting associated with onshore elements such as properties, traffic on roads, light houses, etc., viewed intermittently through the dune system. It is also influenced by views across the OCA, which contains transient lighting from vessels, navigation aids, and moonlight reflecting in the water.

Seascape/Landscape Character Area (SLCA)	Description
Coastal Dunes (SCA) Chappaquiddick, Martha's Vineyard 	**Location and Extent** The Coastal Dunes SCA lies inland to the Ocean Beach SCA. The SCA is not continuous and is interspersed by stretches of rocky beach and settled waterfront. **Key Characteristics** • A delicate and constantly changing SCA, highly influenced by weather patterns, making their susceptibility high. • Present throughout the APSLVI on Martha's Vineyard, Nantucket, Cape Cod, and the Elizabeth Islands. • The SCA is gently rolling, with continuous areas of undulating sand dunes typically ranging in height from 3–10 ft (1-6 m). In places these dunes form high cliff-like formations due to patterns of erosion. • Vegetation cover is typical of dune systems and comprise coastal grasses and scrub. • The texture of the SCA is varied, from the fine grain of sand to the rough nature of dune grasses and the coarser dune scrub vegetation. • The SCA forms a natural boundary between the ocean and the landscapes further inland. • Narrow informal footpaths are frequent through the beach grass and provide public access to the beaches from inland areas. Dunes are used for passive recreation, for sitting, walking, and passing through to gain access to the beach. • Dune system provides shelter and in parts can create an experience of enclosure and isolation. • The coastal dunes SCA is influenced by scattered, low density residential development located within adjacent SLCAs, such as those on the south shore of Martha's Vineyard and Nantucket. Residences typically have panoramic views across the dunes of the coast and to the ocean. Here, susceptibility of the dunes is high. Properties range from small bungalow-style beach houses to large homes with substantial garden areas. Architecture is a mixture of old and new construction, and traditional/historic and contemporary style. • The SCA is highly valued due to the cultural associations with the dynamic coast, their role in providing scenic recreational access to the adjoining beach and their role in the scene towards the ocean as well as backclothing views inland from the beach. This SCA is highly sensitive. • During hours of darkness, lighting from scattered properties adjacent to the SCA, and from the OCA, influences the experience of nighttime from within the dune landscape. • Containment is experienced within the dunes, contrasting with the expansiveness of the long beaches and open sea and skies of the neighboring OCA and Ocean Beach SCA.

Seascape/Landscape Character Area (SLCA)	Description
Coastal Bluffs (SCA) Aquinnah Cliffs, Martha's Vineyard 	**Location and Extent** Coastal bluffs occur along the shoreline of Martha's Vineyard at Gay Head, Aquinnah, Oak Bluffs, East Chop, and Chilmark, and on Nantucket at Siasconset, where the landform rises steeply from sand or rocky beaches to elevations of 100 ft (30 m). Notable bluffs in this area include Gay Head Cliffs, Zacks Cliffs, Squibnocket Ridge, Nashaquitsa Cliffs, and Wequobaque Cliffs on Martha's Vineyard, and Sankaty Head at Siasconset on Nantucket. There are also bluffs along the shoreline of Cuttyhunk. Less dramatic bluffs are found at Wasque Point at the southern end of Chappaquiddick Island where topography steeply rises 49-100 ft (15-30 m) above mean sea level (MSL). **Key Characteristics** • Defined by a distinctive topographic rise in elevation from the beach. • Rugged, rocky coastal edge rising above the Ocean Beach SCA. • Coastal scrub vegetation common at the top of the bluffs. • Exposed to strong winds and waves, the coastal edge is eroded and fragile. • In certain locations, such as Gay Head and Aquinnah, distinctive layering of bedrock strata is a defining characteristic of the cliff and bluff faces, the rock appearing in different shades of red, orange and brown. In other areas, such as Santaky Head, bluffs are varying shades of grey stone and sand. • This SCA is a noted recreational landmark and is highly valued. The coastal bluffs provide elevated, open vistas of the OCA and distant landmasses. Lighthouses are common features above the bluffs and are recreational destinations for tourists. • Gay Head Lighthouse forms a landmark feature on the headland and influences the character of the night-time landscape, introducing elevated light features within the dark sky. • Other man-made development present within the SCA includes roads and vehicles, overhead utility lines, and residential development set back from the coastal edge. • This SCA has an elemental character influenced by the proximity of the OCA. This is heightened by the rugged character and height of the cliffs. • There is a certain perception of wildness associated with the remoter stretches of coast, such as locations near Gay Head. The bluff tops offer open, elevated views, yet views of the coastline from adjacent inland areas are often restricted due to convex slopes and sheer bluffs. • In other locations, such as Sankaty Head, where physical barriers such as buildings and fences filter views across the bluff edges, the experience and perception of the coastal bluffs SCA is more contained and formal. • Views tend to be directed along the coast and out to sea, especially where there are offshore foci such as boats. • Highly susceptible due to their transitional role along the coastline and essentially open aspect that limits potential for mitigation of the type of development proposed. • This SCA is highly sensitive due to the high value and susceptibility placed onto it.

Seascape/Landscape Character Area (SLCA)	Description
Salt Ponds/ Tidal Marsh (LCA) Miacomet Pond, Nantucket 	**Location and Extent** This LCA is common throughout the coastal area, particularly along the southern and eastern coasts of Martha's Vineyard. It is less common but present along the south coast of Nantucket and very common on Cape Cod and present on the Elizabeth Islands. **Key Characteristics** • Areas of shallow open water which are bordered by herbaceous grasses and salt tolerant vegetation. • Vary in size from small and shallow 'scrapes' to large and deep waterbodies. • Generally disconnected from the ocean by sand bars and dune systems, although some narrow tidal channels provide links. Where these links occur, marshes are tidal and mud flats are common. • Ponds are characteristically long, extending inland from the coast. • Larger ponds have 'fingers' of water/marsh, which penetrate inland. • The character of the pond edges varies from densely vegetated scrub to open grassland. • Views from within the LCA are generally contained by adjacent dunes and scrubland. • High levels of settlement present along the edges of ponds, with associated docks and boats within the water, making the LCA highly valued for its scenic quality and naturalness. • Scattered lighting associated with residential properties influences the night-time character of the LCA. • Popular location for recreational activities such as boating, walking, clam digging, and bird watching. • In areas where pond edges are characterized by dense or tall vegetation, the LCA evokes a sense of tranquillity, enclosure, and seclusion, making for medium susceptibility. In other parts, where low growing herbaceous grasses are the dominant shoreline ground cover, views are more open and there is greater connection with other people using the LCA, making for high susceptibility. • Interrelationship with Ocean Beach and Marine Bay SCAs and OCA due to tidal patterns, and incidences of open views across the sandy coast towards open water, which contrasts with the generally enclosed nature of the overall LCA. • This LCA is overall highly sensitive due to its high value and mostly high susceptibility.

Seascape/Landscape Character Area (SLCA)	Description
Coastal Scrub (LCA) Madequecham, Nantucket 	**Location and Extent** Scrub and low growing coastal vegetation create a transitional landscape located between the coastal and inland landscape areas. Occurs on Martha's Vineyard, Nantucket, Cape Cod, and the Elizabeth Islands. **Key Characteristics** • Landform is comprised of small hills and eroded hollows. • Commonly found on the inland edge of the dune systems and across the plains, which lie above tidal marshes. • Vegetation is characterized by low, dense, woody, and herbaceous scrub vegetation, which is often thick and impenetrable. • Limited recreational opportunities: activity is typically limited to local road corridors that are also used for walking and biking. • Little to no residential settlement within the LCA. • Dark night-time character, lighting is generally limited to vehicles on roads. • Views from within the LCA are frequently obstructed by dense foliage. Distant vistas may be limited to corridors along roadways or where scrub brush transitions to open meadow. • The containment of views from within the LCA evokes a sense of enclosure and also of isolation as there is a lack of connection with the wider area and landscape. • Medium susceptibility. While this LCA has a still and dark character and remote feeling that are susceptible to the type of development proposed, the absence of recreational receptor and the degree of enclosure provided lessens its susceptibility somewhat. • The LCA is highly valued as this is a seemingly remote transitional landscape that forms an important backdrop to views from roads and across the adjoining inland tidal marshes. • The LCA is overall highly sensitive due to the medium level of susceptibility and high value.

Seascape/Landscape Character Area (SLCA)	Description
Forest/Woodlands (LCA) Wilson's Landing, Edgartown, Martha's Vineyard 	**Location and Extent** Located inland from the coastal area. Although this landscape type once dominated the interior of Martha's Vineyard and Nantucket, various forms of human development extensively encroach upon this area, leaving a patchwork of mature forest remaining. This LCA dominates on Cape Cod and is present on the Elizabeth Islands. **Key Characteristics** • Topography in the LCA is generally flat or gently undulating with some distinct ridges and gullies. • Landcover is characterized by deciduous and coniferous woodlands. Understory is comprised of mixed shrubs, vines, and saplings. • In areas exposed to coastal winds, trees are often irregular in form and stunted. Trees in better shielded inland areas are taller and more regular in form. • A variety of land use activities exist in the LCA including residential development, roads, small open yards and fields, and other land uses. • Residential development is dispersed, and homes vary in size. Newer seasonal homes are generally comprised of larger estates and are located on large lots. • Residential structures are often set back from the road and surrounded by hedgerows and small woodlots. • Woodland contains the spread of lighting during hours of darkness, meaning only glimpsed views of some lights are available. • LCA contains the Manuel F. Correllus State Forest, situated in the center of Martha's Vineyard. • A recreation destination. Recreational uses include walking and bicycling through the woods along local roads and trails. • Views are restricted to within glades and other openings in the forest canopy and axial views along roadways, making for low susceptibility. While a popular recreational destination, in parts the LCA offers a sense of isolation, which contrasts with the busier and more intensively used areas that surround it (i.e., towns and villages). • Forms the background to the coastal LCAs. • Although this LCA is relatively commonplace, it is of high value where residential properties, trails and cycleways are present, along with the conservation efforts associated with forests due to their naturalness and ecological importance. • The overall sensitivity of Forest/Woodlands is medium due to their low susceptibility to views of development and their high value.

Seascape/Landscape Character Area (SLCA)	Description

Village/Town Center (LCA)
Siasconset Village, Nantucket
 
	Location and Extent
	This LCA is found in a number of locations across Martha's Vineyard, Nantucket, and Cape Cod. The main town center on Nantucket is the Town of Nantucket, located in the north of the island. Other villages include Tom Nevers and Siasconset on the east coast, and Dionis, Madaket, and Smith Point in the west of the island. Martha's Vineyard contains six towns – Edgartown, Tisbury, Oak Bluffs, West Tisbury, Chilmark, and Aquinnah. Cuttyhunk has a very small town center located towards the north side of the island near the ferry port. There are many town centers on Cape Cod, including Falmouth, Mashpee, and Hyannis.
	Key Characteristics
	• Highly valued village and town centers are small coastal seaports with clusters of historic buildings focused around clearly defined downtown commercial districts.
	• Town center layout strongly related to growth associated with the harbor
	  ○ Parallel roads with transverse lanes, and equal divisions of land set out by early European settlers who held deeds.
	  ○ Irregular areas of infill where deeds were not held and were later developed as demand grew. Results in a town with areas of both regular and irregular layouts.
	• Susceptibility ranges from low, where there is moderate to high-density residential and commercial development, to high susceptibility where seaward views occur. The overall susceptibility of the LCA is medium.
	• Each town center has a distinctive character. Buildings are most commonly of a traditional New England architectural style and arranged in an organized pattern focusing views along the streets.
	• Buildings are two to three stories high and, within the historic core, are generally clad in cedar shingles to provide a soft grey color, which is characteristic to Nantucket and Martha's Vineyard. Crisp, clean lines and pitched rooves are also characteristic of residential properties.
	• Side streets are characterized by well-maintained residential structures adjacent to the village center.
	• Vegetation generally includes street trees and a variety of species found in residential gardens.
	• Perception of towns and villages is largely driven by their setting. Settled townscapes contrast with the wooded interior of each island, and with the open and expansive character of the coastlines. High-density built development provides a sense of order and coherence. There are strong connections to the sea (including a notable historic connection), which is demonstrated by the relationship of the main towns to their harbor.
	• Villages/Town Centers are highly sensitive due to the medium level of susceptibility the provide and the high value attached to them.

Seascape/Landscape Character Area (SLCA)	Description
Fields/Meadows (LCA) Sanford Barn, Nantucket 	**Location and Extent** The LCA forms a very small component of the landscape in the southeast of Martha's Vineyard, to the south of the Town of Nantucket, on Nantucket Island, and on the Elizabeth Islands. **Key Characteristics** • LCA is comprised of flat to gently sloping topography. • Open expanses of pasture and crop land are divided by post and wire fencing. • Adjacent forest, coastal scrub, and built structures frame and enclose the LCA, restricting views out across the neighboring SLCAs. • Livestock and farm equipment contribute to the rural character of the LCA and adds elements of visual interest. • Large agricultural farm complexes (such as Bartlett's Farm on Nantucket and The Farm Institute on Martha's Vineyard) form notable features in the landscape due to their size and scale, which contrast with the fine grain of surrounding built development. • Settlement is present along the edges of the LCA, which is largely bounded by roads. • Lighting is associated with residential properties, farm buildings and road traffic, leaving a dark interior to the LCA. • Susceptibility is generally high due to being relatively flat and open which provides key views out of the LCA. However, susceptibility lessens where woodlands or settlement encloses the fields, foreshortening views outward. • Much of the LCA is protected open space, either by public agencies, private land trusts, or non-profit organizations. • Some parts of the LCA are open to tourists; however, this is formal recreation where entry fees apply (i.e., The Farm Institute). Informal recreational opportunities are limited. Due to this and the relatively limited extent of the LCA, it is highly valued. • The LCA is generally highly sensitive due to its value and susceptibility to change. • Generally surrounded by areas of woodland associated with the Forest LCA, which forms the backdrop to the Fields/Meadows LCA, and which contains the medium distance views from within the LCA. The highly managed agricultural areas contrast with the more natural forest and scrub cover of surrounding areas, evoking a sense of formality and order.

Seascape/Landscape Character Area (SLCA)	Description
Rural/Suburban Residential (LCA) Tisbury, Martha's Vineyard 	**Location and Extent** The LCA forms an outer zone to the settlement centered on Vineyard Sound Harbor in Martha's Vineyard, and around the edges of the main Nantucket settlement on Nantucket. Cuttyhunk has a small area on the eastern side of the island. Widespread throughout Cape Cod. **Key Characteristics** • LCA is located on flat to gently undulating topography. • Low to medium density residential area comprising a mixture of detached properties of different architectural styles. • Dwellings set back from roads and tracks and partially screened by roadside vegetation, making for low susceptibility. • Intervisibility/views out of the LCA and into neighboring SLCAs constrained by intervening vegetation and built structures, making for a low susceptibility. • Small scale enclosed and somewhat intimate seascapes dominated by tree cover along the sides of roads/tracks. • Provides a gentle transition between more rural locations and the urban village/town centers. • Highly valued by residences within the communities. • Medium sensitivity rating due to the high value and low susceptibility.
Low Density Rural Settlement (LCU) Shimmo Rd, Nantucket 	**Location and Extent** Widespread throughout Martha's Vineyard, both on the coast and in the hinterland, and found on the outskirts of Nantucket Village, and concentrated along the southern side of Nantucket Island. Cuttyhunk has a small area on the northern portion of the island. Not present on Cape Cod. **Key Characteristics** • LCA generally comprises flat to gently undulating topography. • Typified by low density housing/settlement set within areas of forest or woodland, with a consequent rural wooded character. • Dwellings are detached and of mixed architectural style and set back from roads and tracks, and often partially or wholly obscured by intervening tree and shrub cover along roadsides, lending a small scale and intimate character to the LCA. • Intervisibility and views out of the LCA are often constrained by intervening tree cover. • Differentiated from Rural Suburban Residential LCA by its more remote, rural, and substantially wooded character. • On areas like Nantucket, residential settlements set back from the coastline have unobstructed views across a coastal scrub landscape out toward the OCA. Due to the variety of the LCA, susceptibility may range from low to high, making it a medium level susceptibility. • The LCA is highly values by its residents for its natural surrounding characteristics. • The LCA's sensitivity is rated medium overall.

Seascape/Landscape Character Area (SLCA)	Description
Light Industrial Land (LCA) Martha Vineyard's Airport 	**Location and Extent** The LCA forms a very small component of the landscape of Martha's Vineyard, Nantucket, and Cape Cod. On Martha's Vineyard, this LCA is confined to the airport at the center of the island, while on Nantucket it is found in three locations on the central southern parts of the island. There is one small, confined area on Nashawena Island. On Cape Cod there are multiple light industrials areas, with one large area being the Otis Air National Guard Base. **Key Characteristics** • LCA is comprised of generally flat to gently sloping topography. • Expanses of mown open grassland intersected by site infrastructure. • Generally associated with perimeter fencing, including security fencing. • Clusters of large-scale steel portal and industrial buildings. • Low susceptibility due to the predominance of large-scale industrial forms, existing light sources and degree of enclosure that reduces views out of this character area. Often enclosed by Coastal Scrub or Forests/Woodlands in neighboring LCAs that reduce the visibility of the industrial land and which constrain long-range views out. • Low value due to the industrial character and oftentimes poor condition and low scenic quality. • The overall sensitivity of this LCA is low.
Parks/Developed Recreation (LCA) Children's Beach Nantucket 	**Location and Extent** This LCA is present as discreet sites set amidst Village/Town, as well as Rural/Suburban and Low-Density Settlement LCAs, reflecting its role in the provision of recreation and amenity to communities. **Key Characteristics** • Generally, LCA is comprised of flat to gently sloping topography but can be associated with localized micro-topography including depressions where golf courses sand traps are present. • In village and town locations, this SLCA is generally relatively small and subject to urban influences. In contrast this LCA in more rural locations is generally of larger scale and more remote and rural in character, dominated by forest and woodland cover, providing an enclosed nature within these sites, making for low susceptibility to changes. • This LCA is highly valued by communities due to the recreational value it provides. • The overall sensitivity of the LCA is medium due to the low susceptibility and high value.

X.5.1.2 Offshore SL Impact Assessment

The SLIA identifies and assesses positive, negative, temporary, and permanent impacts of the Project including:

- Change or complete or partial loss of elements, features, or aesthetic, perceptual, or experiential aspects that contribute to the distinctive character of the SLCA;
- Addition of new elements and/or features that may affect the distinctive character of the SLCA; or
- Change in the overall character of the SLCA resulting from the combined impacts of the changes, losses, or additions described above.

Assessing the impact level of SLCA impacts is ultimately a matter of professional judgment. In general, a large loss or irreversible adverse impact over an extensive area, on elements and/or aesthetic and perceptual aspects that are key to the character of highly valued seascapes or landscape, is likely to be considered a major impact. On the other hand, reversible adverse impacts of short duration over a restricted area, on elements and/or aesthetic and perceptual aspects that contribute to but are not key characteristics of the distinctive character of SLCAs of lower value, are likely to be judged to be less important. The impact level is a function of both the impact receptor and the nature of the impact. The key factors are referred to as the sensitivity of the receptor and the magnitude of the effect.

In accordance with the BOEM SLVIA Methodology, each factor and its components are rated on an ordinal scale with three levels, which in some cases use different terms for semantic reasons but are considered equal in importance; in other words, a rating of “high” is considered equivalent in importance to a rating of “large” or “good.” Similarly, a rating of “low” is considered equivalent to a rating of “small” or “poor.” These relationships are presented in **Table X.5-3** below. In addition to the three levels employed in the BOEM SLVIA Methodology, Beacon Wind has employed a fourth level rating of “Negligible” with respect to size and scale of effect and geographic extent of effect components of impact magnitude when the Project will not be discernible from the SLCA nor alter the SLCA.

TABLE X.5-3. SLIA IMPACT RATING FACTORS, COMPONENTS, AND IMPORTANCE LEVELS

Factor	Component	Importance Level
Receptor Sensitivity		High, medium, low
	Susceptibility	High, medium, low
	Value	High, medium, low
Impact Magnitude		Large, medium, small, negligible
	Size and scale of effect	Large, medium, small, negligible
	Geographic extent of effect	Large, medium, small, negligible
	Duration and reversibility	Good, fair, poor

X.5.1.2.1 SLCA Receptor Sensitivity

The sensitivity factor of the SLCA receptor has two components: susceptibility and value.

The susceptibility of a SLCA receptor to change is its ability to accommodate the impacts of the Project without substantial change to the basic existing characteristics of the defined character areas within the APSLVI. This applies to the overall character of a particular SLCA, or an individual element and/or

feature, or a particular aesthetic, experiential, and perceptual aspect that contributes to the character of the area.

Professional judgment is used to rate the SLCA receptor susceptibility to the type of development proposed on a scale of *high*, *medium* or *low* based on an interpretation of a combination of parameters including:

- The scale and pattern of the landscape and its elements/features and how this may be affected by elements of the type of Project proposed (onshore and offshore elements);
- The degree of simplicity or complexity of the landscape and how this may be affected by elements of the type of Project proposed (onshore and offshore elements);
- The nature of skylines and they may be affected by elements of the type of Project proposed (onshore and offshore elements);
- Landscape quality or condition (integrity);
- Existing land use and the consistency with the type of Project proposed (onshore and offshore elements);
- Visual enclosure/openness of views and degree of potential visibility/influence of the type of Project proposed (onshore and offshore elements);
- The extent and configuration of artificial light sources present in the baseline SLCA; and
- The scope for mitigation, which would be in character with the existing landscape.

In the evaluation of value, special consideration is given to key characteristics—that is, those components that contribute significantly to the distinctive character of the SLCA. Professional judgment is used to rate the SLCA receptor value on a scale of *high*, *medium* or *low* based on an interpretation of its distinctiveness based on a combination of parameters including:

- Formal designation or classification;
- Seascape/landscape quality and condition;
- Scenic Integrity;
- Scenic quality;
- Rarity;
- Representativeness;
- Conservation interest;
- Recreational value;
- Perceptual aspects; and
- Cultural associations.

The BOEM SLVIA Methodology contains a matrix for combining value and susceptibility components to derive an overall sensitivity rating, as presented in **Table X.5-4** below.

TABLE X.5-4. MATRIX FOR COMBINING SENSITIVITY COMPONENTS

Value Rating	Susceptibility Rating		
	High	Medium	Low
High	Sensitivity = High	Sensitivity = High	Sensitivity = Medium
Medium	Sensitivity = High	Sensitivity = Medium	Sensitivity = Low
Low	Sensitivity = Medium	Sensitivity = Low	Sensitivity = Low

Table X.5-5 below shows the value and susceptibility ratings assigned to each of the affected SLCA receptors and how that determines the overall sensitivity of the respective character areas. **Table X.5-2** provides in-depth character area descriptions and rationales for these value and susceptibility ratings. Ten out of the 14 SLCAs were rated as high sensitivity due to the nature and setting of these character areas. Many of the SLCAs are natural, unique and distinctive settings and used for recreation or conservation purposes. Three are rated medium, and one is rated low sensitivity.

TABLE X.5-5. OFFSHORE SLIA RECEPTOR SENSITIVITY MATRIX

Character Area	Value Rating	Susceptibility Rating	Sensitivity Rating a/
Fields/Meadows	High	Medium	High
Coastal Bluffs	High	High	High
Coastal Dunes	High	High	High
Coastal Scrub	High	Medium	High
Forests/Woodlands	High	Low	Medium
Light Industrial	Low	Low	Low
Low Density Rural Settlement	High	Medium	High
Marine Bays	High	Medium	High
Ocean Beach	High	High	High
Ocean	High	High	High
Parks/Developed Recreation	High	Low	Medium
Rural/Suburban Residential	High	Low	Medium
Salt Ponds/Tidal Marsh	High	High	High
Village/Town	High	Medium	High

Notes: a/ see Table X.5-4 above.

X.5.1.2.2 SLCA Magnitude of Impact

The magnitude factor has three components: the size and scale of the change to existing conditions caused by the project, the geographic extent of the area subject to the project's effects, and the duration and reversibility of impacts. These components are described below, and the final ratings are displayed in **Table X.5-10**.

Size and Scale of Change

Professional judgment is made regarding the degree of change from loss, addition, or alteration of character, features, elements, or aesthetic, experiential, or perceptual aspects of the affected SLCAs within the Offshore APSLVI and rated on a scale of *large*, *medium*, *small*, or *negligible*. Considerations include changes to the: physical elements of the SLCA; its aesthetic, experiential, and perceptual aspects; and to the key characteristics of the SLCA critical to its distinctive character. Beacon Wind developed the thresholds provided in **Table X.5-6** below to rate the size and scale of change for each SLCA.

TABLE X.5-6. DEFINITIONS OF SIZE AND SCALE OF CHANGE

Size and Scale of Change	Definition
Negligible	An object/phenomenon that is not discernible or presents no contrast or apparent change and which, therefore, would not alter the SLCA.
Small	An object/phenomenon that appears very small, faint or recessive, but when the observer is scanning the horizon or looking more closely at an area, can be detected without prolonged viewing. It could sometimes be noticed by casual observers. It represents a highly localised and small-scale change that would be unlikely to compete, to any notable extent, with key characteristic SLCA elements at a representative viewpoint.
Medium	An object/phenomenon that is readily apparent after even a brief look and would be visible to most casual observers. The object is clearly evident and represents a prominent new feature within a largely unchanged wider context and would not compete with key characteristic SLCA elements at a representative viewpoint to any great extent.
Large	An object/phenomenon that is obvious to most receptors/observers and prominent or even dominant in the view and is of sufficient scale or difference to constitute a notable change to the existing SLCA context. In such circumstances, the object would represent a key new characteristic element in the SLCA at a representative viewpoint to any great extent.

The degree of change from loss, addition, or alteration of aesthetic and perceptual aspects of the affected SLCAs is variable. Overall, one character area was rated as large for size and scale, five were assigned a medium rating, six were rated small, and two were rated as negligible. Only the OCA is physically altered by the offshore components of the Project, as this is where the construction and operation of the Project will occur.

Geographic Extent

The assessment of impact magnitude also includes consideration of the geographic extent over which the impact will be experienced. For seascape/landscape impacts from offshore wind projects, the geographic extent of SLCA impacts relates to the visibility of the Project as displayed in the Offshore APSLVI.

Table X.5-7 below shows the total geographic area of each SLCA within the ZTV [46 mi (74 km) Study Area], and the percent of that SLCA geographic area that falls within the DSM viewshed (Offshore APSLVI). **Figure X.5-18** through **Figure X.5-21** displays the DSM viewshed overlaying the SLCAs. It should be noted that in the case of long-distance views, theoretical visibility typically exceeds actual visibility (see **Section X.4.5**). DEM and DSM viewshed modelling has a number of inherent limitations and does not precisely reflect the screening or filtering effects of micro-topography, vegetation or built forms, and does not take account meteorological and atmospheric conditions.

Of the character areas, Ocean (OCA) has the largest total area present and the highest percentage of geographic area visible within the TOB viewshed at 85 percent. Out of the LCAs, Rural/Suburban Residential has the largest total area present in the 46 mi (74 km) Study Area, followed by Low Density Rural Settlement, Salt Ponds/Tidal Marsh, and Forests/Woodlands. Coastal Bluffs have the lowest amount of area in the 46 mi (74 km) Study Area, followed by Fields/Meadows.

TABLE X.5-7. GEOGRAPHIC EXTENT OF SLCA IMPACTS WITHIN THE OFFSHORE APSLVI

Character Area	Total Area a/	Total Area within TOB Viewshed b/	Percent within TOB Viewshed	Total Area within Hub Viewshed	Percent within Hub Viewshed	Percent within Total Viewshed
Coastal Bluffs	148 ac (60 ha)	37 ac (15 ha)	25%	36 ac (15 ha)	24%	49%
Coastal Scrub	22,484 ac (9,099 ha)	6,609 ac (2675 ha)	29%	4,102 ac (1,660 ha)	18%	47%
Coastal Dunes	797 ac (323 ha)	56 ac (23 ha)	7%	393 ac (159 ha)	49%	56%
Fields/Meadows	701 ac (284 ha)	508 ac (206 ha)	72%	245 ac (99 ha)	35%	100%
Forests/Woodlands	42,742 ac (17,297 ha)	2,446 ac (990 ha)	6%	794 ac (321 ha)	2%	8%
Light Industrial	7,167 ac (2,900 ha)	1,020 ac (413 ha)	14%	800 ac (324 ha)	11%	25%
Low Density Rural Settlement	45,063 ac (18,236 ha)	7,176 ac (2,904 ha)	16%	5,937 ac (2,403 ha)	13%	29%
Ocean Beach	2,424 ac (981 ha)	1,481 ac (599 ha)	61%	813 ac (329 ha)	34%	95%
Marine Bay	21,066 ac (8,524 ha)	0 ac (0 ha)	0%	1,416 ac (573 ha)	13%	13%
Ocean	8,649,929 ac (3,500,502 ha)	5,082,752 ac (2,154,664 ha)	59%	3,485,342 ac (1,410,468 ha)	40%	100%
Parks/Developed Recreation	6,195 ac (2,507 ha)	762 ac (308 ha)	12%	434 ac (176 ha)	7%	19%
Rural/Suburban Residential	87,971 ac (35,601 ha)	1,980 ac (801 ha)	2%	572 ac (231 ha)	1%	3%
Salt Ponds/Tidal Marsh	124,721 ac (50,473 ha)	7,617 ac (3,082 ha)	6%	1,303 ac (527 ha)	1%	7%
Village/Town	5,480 ac (2,218 ha)	622 ac (252 ha)	11%	343 ac (139 ha)	6%	17%

Notes:
a/ Total area of each SLCA that falls within the 46 mi (74 km) radius or ZTV.
b/ TOB – Top of Blade.

In conformance with the BOEM SLVIA Methodology, professional judgement has been employed to record the geographic extent of SLCA impacts on a scale *large*, *medium*, or *small* using the thresholds defined in **Table X.5-8** below. The thresholds correspond to the percentage of the respective SLCAs that fall within the TOB viewshed (Offshore APSLVI).

TABLE X.5-8. THRESHOLDS FOR GEOGRAPHIC EXTENT RATINGS

Geographic Extent	Definition
Negligible	Area equivalent where theoretical visibility does not occur or where field reconnaissance suggests there would be no actual visibility due to the screening effect of micro-topography (not represented in terrain or surface data).
Small	Area equivalent to less than 10% of the character area type.
Medium	Area equivalent to between 10% and 30 % of the character area type.
Large	Area equivalent to between 30% and 100% of the character area type.

The geographic extent ratings for each SLCA are presented in **Table X.5-9** below. Overall, six SLCAs fall into the large rating, five are medium, and three are small.

FIGURE X.5-18. OFFSHORE APSLVI WITH SLCAS – MARTHA'S VINEYARD

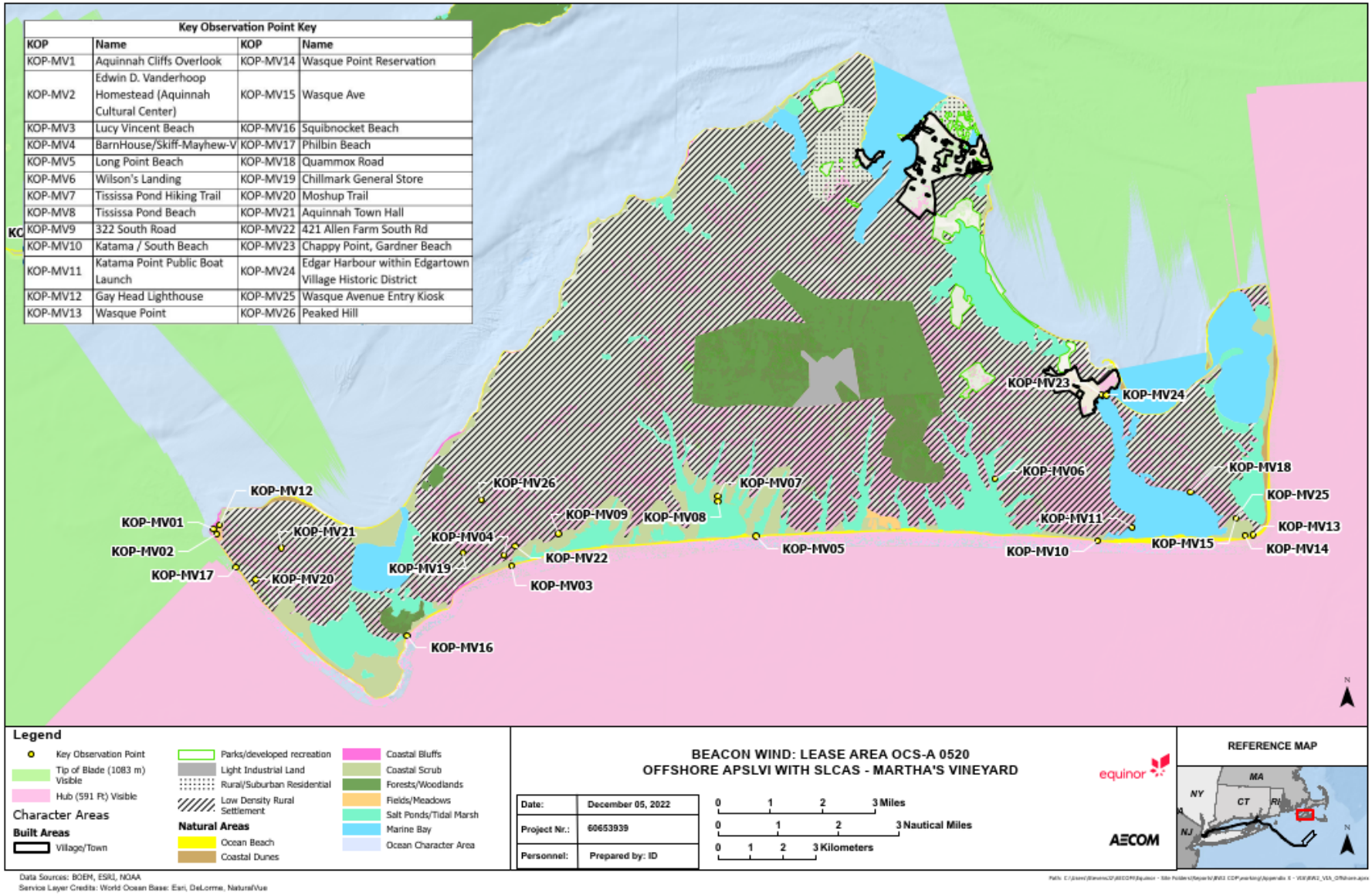


FIGURE X.5-19. OFFSHORE APSLVI WITH SLCAS – NANTUCKET

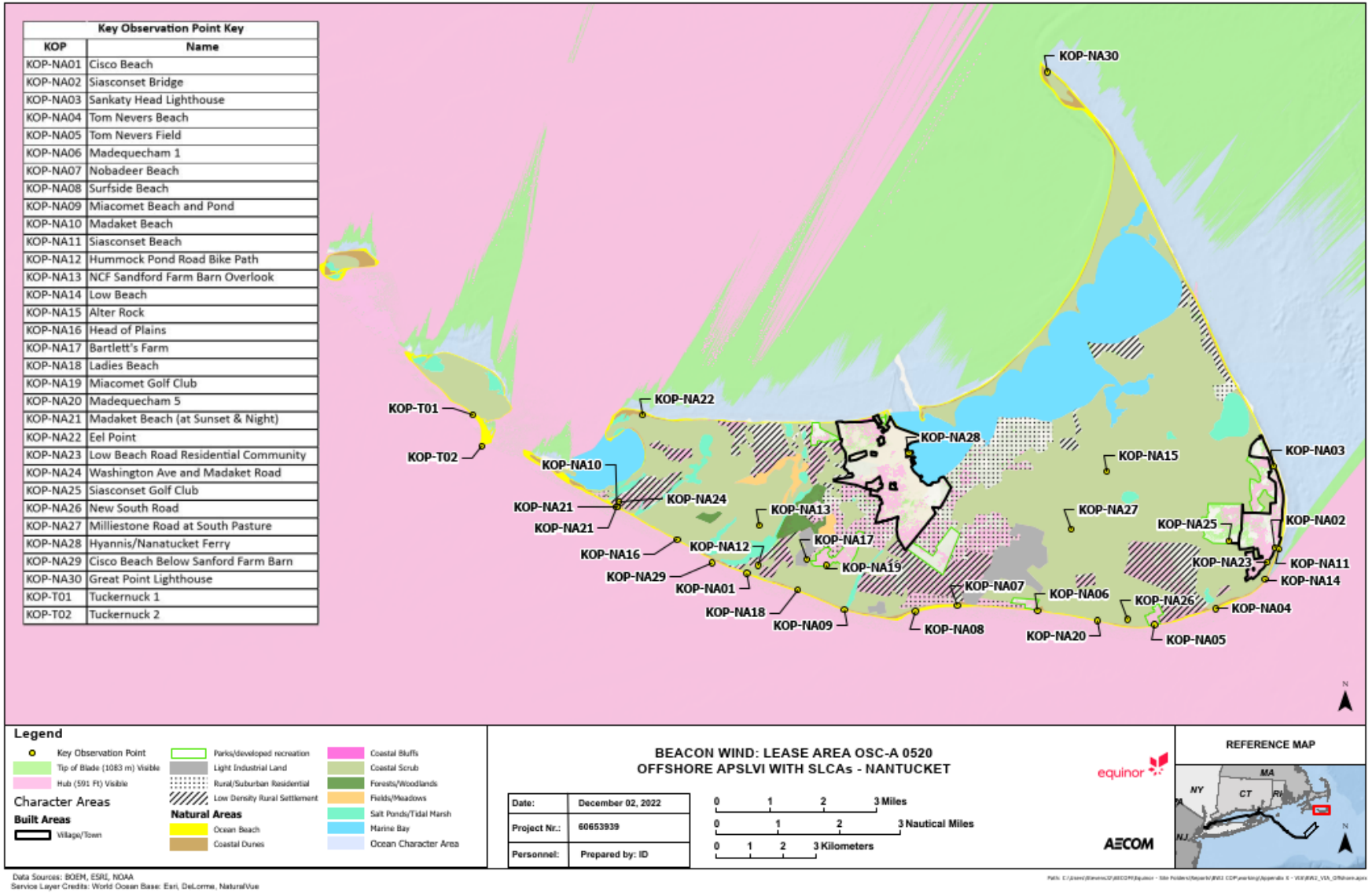


FIGURE X.5-20. OFFSHORE APSLVI WITH SLCAS – CAPE COD

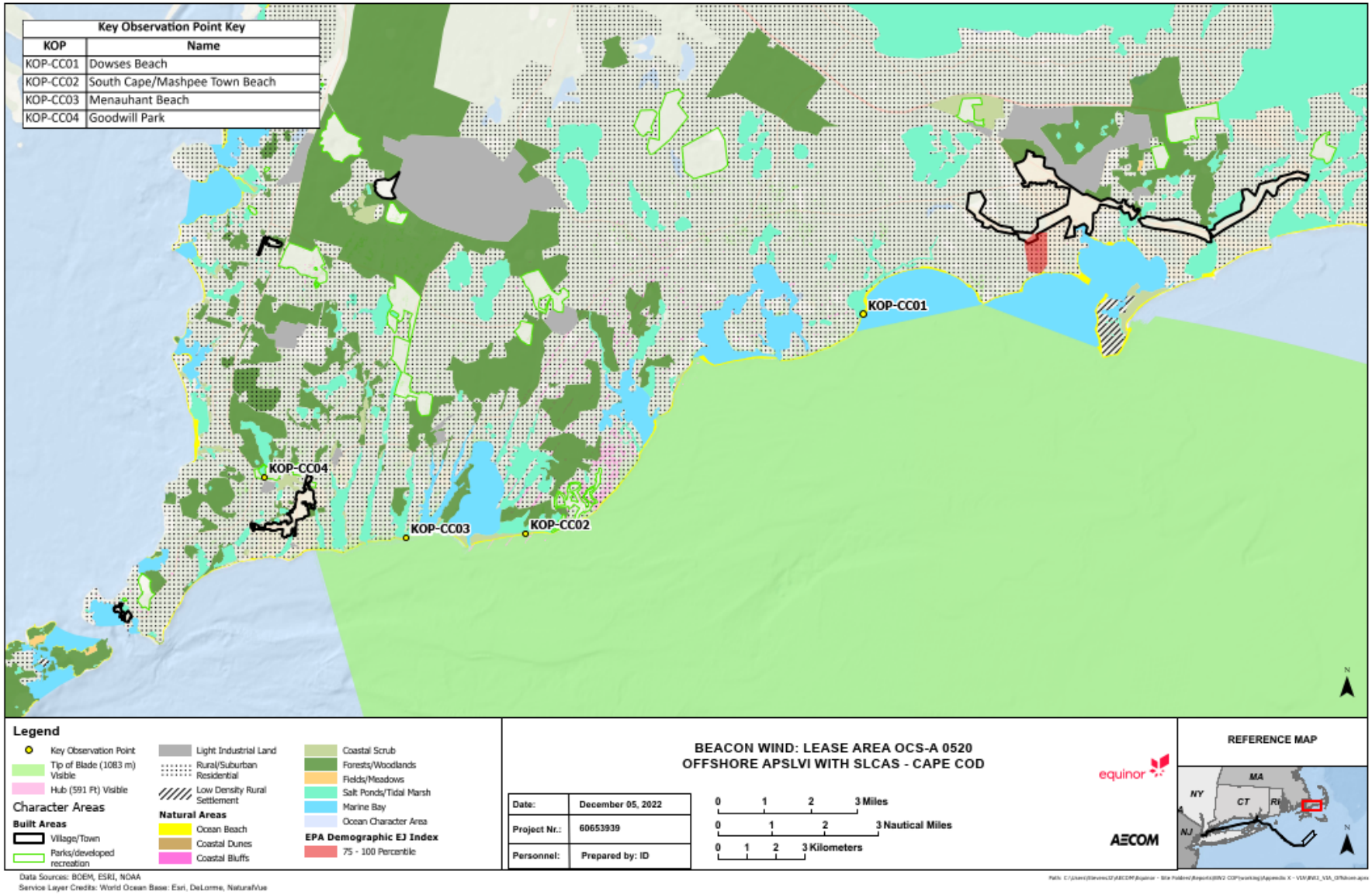
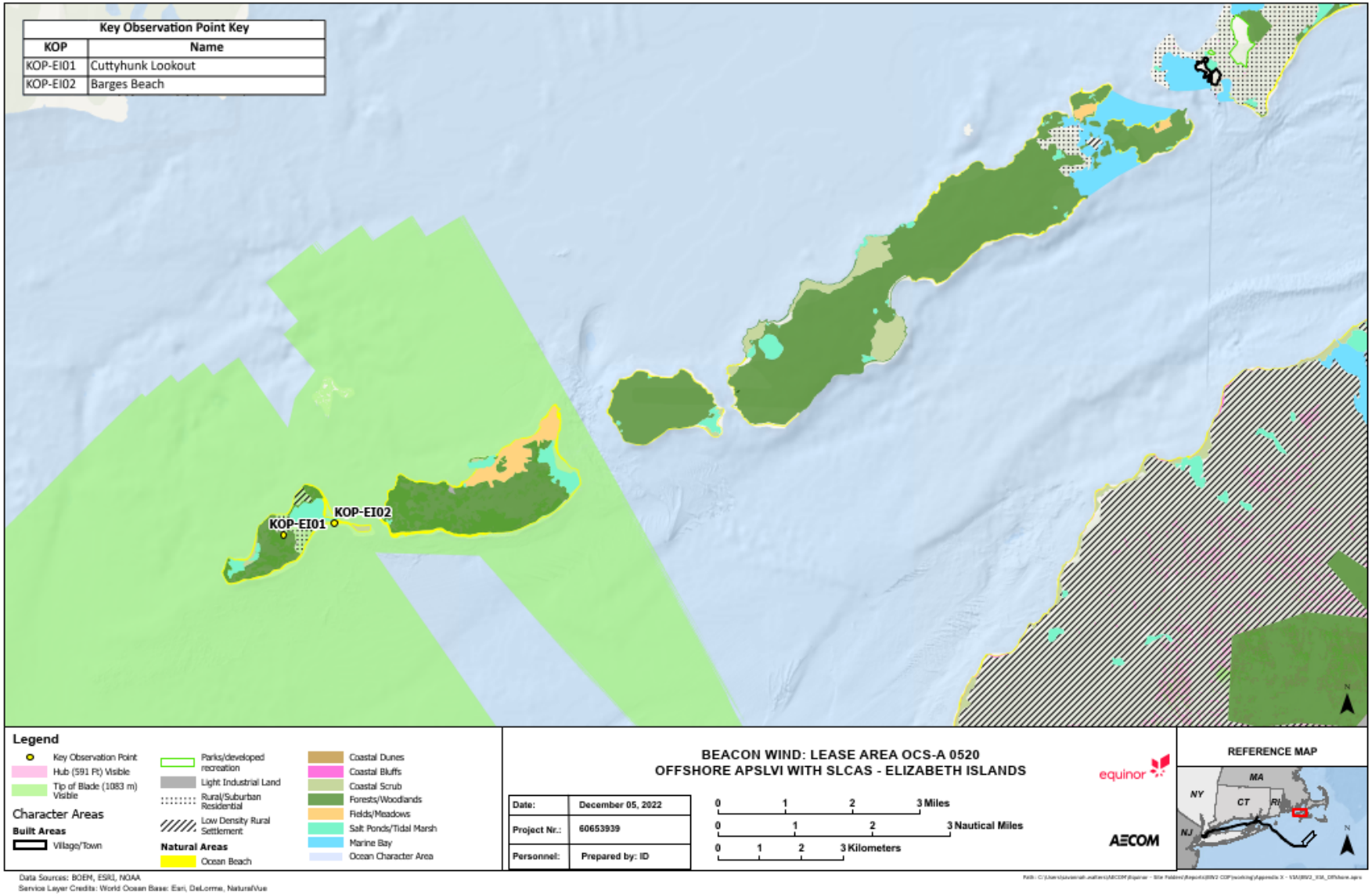


FIGURE X.5-21. OFFSHORE APSLVI WITH SLCAS – ELIZABETH ISLANDS



Duration and Reversibility of Impacts

The duration of offshore SLCA impacts is considered long-term given that the Project is assumed to have a Project lifetime of approximately 35 years for the purposes of this SLVIA although some installations and Project components may remain fit for continued service after such time. There is not expected to be any SLCA residual impacts remaining after decommissioning.

Reversibility has been determined to be fully reversible. The assessment of duration and reversibility impacts considered in combination has been determined to be fair given the long-term duration but full reversibility.

TABLE X.5-9. OFFSHORE SLIA MAGNITUDE OF EFFECT MATRIX

Character Area	Size and Scale Rating	Geographic Extent Rating	Duration/ Reversibility Rating	Magnitude Rating a/
Fields/Meadows	Medium	Large	Fair	**Small**
Coastal Bluffs	Medium	Large	Fair	**Medium**
Coastal Dunes	Medium	Large	Fair	**Medium**
Coastal Scrub	Small	Large	Fair	**Medium**
Forests/Woodlands	Small	Small	Fair	**Small**
Light Industrial	Negligible	Medium	Fair	**Negligible**
Low Density Rural Settlement	Small	Medium	Fair	**Medium**
Ocean Beach	Medium	Large	Fair	**Medium**
Ocean	Large	Large	Fair	**Large**
Marine Bays	Medium	Medium	Fair	**Medium**
Parks/Developed Recreation	Small	Medium	Fair	**Medium**
Rural/Suburban Residential	Small	Small	Fair	**Small**
Salt Ponds/Tidal Marsh	Small	Small	Fair	**Small**
Village/Town	Negligible	Medium	Fair	**Negligible**

X.5.1.2.3 SLCA Impact Level (Combining Sensitivity and Magnitude Factors)

The BOEM SLVIA Methodology includes a matrix for combining receptor sensitivity and magnitude of impact ratings to derive an overall SLCA impact rating, which is "...recommended but [is] subject to change in consideration of individual project circumstances" and is scored on a scale of *minor*, *moderate*, and *major* (BOEM 2021a). In addition to the three level ratings employed in the BOEM SLVIA Methodology, Beacon Wind has employed a fourth level rating of *negligible* when it has been determined that the Project will not be discernible from the SLCA nor alter the SLCA in a perceptible way. The overall impact level ratings for the affected SLCAs and the rationale behind those ratings are presented in **Table X.5-10** below. Beacon Wind has also diverted from the BOEM SLVIA Methodology and exercised professional judgement in the presentation of the overall SLCA impacts as a range between negligible and major levels, where warranted, to reflect the unevenness of impacts across the geographic variability of the respective SLCAs. This is in part because it is believed that the size and scale factors should carry a heavier weight rather than equalizing their counterparts into a simplified matrix.

TABLE X.5-10.OFFSHORE SLIA OVERALL IMPACT

Character Area	Overall Impact Level Range	Overall Impact Rationale
Fields/Meadows	Negligible to Moderate	The Project would introduce a new prominent feature to this high sensitivity LCA that is easily detected after a brief look and would be visible to most casual observers, but one that would be of insufficient size or contrast to compete with key characteristic LCA elements to a great extent. Turbine lights when activated would also introduce prominent new light sources to the largely dark night outlook from representative viewpoints within the LCA, therefore reducing the degree of perceived remoteness (see KOPs MV02, MV12, NA13, NA17, and EI01). Although the DSM-based viewshed model indicates widespread visibility of the Project from within the LCA, the majority of this LCA is located inland or at the northern extents of Nantucket and actual visibility and the scale of perceived change would be substantially reduced at these distances from within the LCA.
Coastal Bluffs	Moderate	The Project would not be located within this high sensitivity SCA but would affect key aspects of the characteristics of the context provided by the OCA, including the scale, openness, simplicity, and horizontal form of the ocean, as well as its essentially dark condition at night. The Project would also lessen the perceived naturalness experienced at representative viewpoints within the SCA (see KOPs MV01 and MV14). This SCA is of relatively small extent but forms an important transitional edge that is substantially influenced by the OCA. The Project would represent a moderate impact, introducing movement, large scale engineered structures and lighting to a currently dark, featureless, horizon, thereby impacting the simplicity and perceived large scale of the Coastal Bluff SCA.
Coastal Dunes	Negligible to Moderate	The Project would not be located within the SCA but would affect key aspects of the characteristics of the context provided by the OCA, including the scale, openness, simplicity and horizontal form of the ocean. The Project would also lessen the perceived naturalness experienced at representative viewpoints within the SLCA and increase the degree of perceived activity present (see KOPs NA06). While this SCA has high sensitivity, potential impacts would range from Moderate to None, reflecting its relative distance from the Project and the variability of actual visibility of the Project.
Coastal Scrub	Negligible to Moderate	The Project would not be located within the LCA but would have a minor effect on key aspects of the characteristics of the context provided by the OCA, including the scale, openness, simplicity, and horizontal form of the ocean. The Project would also lessen the perceived naturalness experienced (see KOPs MV07, MV15, MV25, NA06, NA12, NA15, and NA19). The overall impact on this SCA with medium sensitivity would be negligible to moderate, reflecting the varied distances and orientations of the SCA, and generally constrained visibility of the Project. The Coastal Scrub SCAs along the southern coasts of Nantucket and Martha's Vineyard would experience moderate impacts.
Forests/Woodlands	Negligible to Minor	The Project would not be located within the Forests/Woodlands LCA but would affect key aspects of the characteristics of the context provided by the OCA, including the scale, openness, simplicity and horizontal form of the ocean. The Project would also lessen the perceived naturalness experienced at representative viewpoints (see KOPs MV04, MV09, MV26, and CC04). The overall impact on this LCA with medium sensitivity would be negligible to minor, reflecting the substantially constrained visibility of the Project from within this LCA.
Light Industrial	Negligible	Views of the Project would be limited within this low sensitivity LCA due to the characteristic low lying, essentially flat terrain in the area, coupled with distance and the incidence of intervening topography and structures that would restrict views of the Project. Therefore, the Project presents negligible change and would not alter the existing seascape/landscape or visual context at the LCA (see KOP-NA17).

Character Area	Overall Impact Level Range	Overall Impact Rationale
Low Density Rural Settlement	Negligible to Moderate	The Project would not be located within this LCA but would affect key aspects of the characteristics of the context provided by the OCA, including the scale, openness, simplicity and horizontal form of the ocean. The Project would also lessen the perceived naturalness experienced at the KOP and increase the degree of perceived activity (see KOPs MV04, MV09, MV26, and NA12). This LCA has high sensitivity, but visibility of the Project would be highly variable, representing an overall impact of negligible to moderate depending upon the location of the settlements and consequent visibility. The greatest impacts to this LCA would occur in locations along the south coast of Martha's Vineyard and Nantucket.
Ocean Beach	Negligible to Major	The Project would not be located within the high sensitivity Ocean Beach SCA but would affect key aspects of the characteristics of the context provided by the OCA, including the scale, openness, simplicity and horizontal form of the ocean. The Project would also lessen the perceived naturalness experienced at representative viewpoints within the SCA and increase the degree of perceived activity present (see KOPs MV03, MV05, MV10, MV13, MV14, MV16, NA01, NA04, NA06, NA07, NA08, NA09, NA10, NA11, NA14, NA16, NA18, NA20, NA21, NA22, T01, T02, EI01, CC01, CC02, and CC03). Highly variable, depending upon distance and position of Ocean Beach areas relative to the Project, nature of seaward views, and consequent relative prominence. Impacts range from negligible in locations on the eastern and western coasts of the islands where there would be no direct views of the Project to major in locations along the southern extents of Nantucket and Martha's Vineyard.
Ocean	Moderate to Major	The Project is located in this OCA and therefore would have the greatest visibility and perceived scale and contrast occurring here. The Project may have a variable prominence, depending on closeness to the Project within the OCA. The Project would lessen the perceived naturalness experienced at the KOP and increase the degree of movement and perceived activity present. This character area has a generally high sensitivity to the type of Project proposed. Impacts would, however, be variable, ranging from moderate to major depending upon distance and the corresponding perceived scale and contrast with the character of the OCA.
Marine Bays	Negligible to Major	Views of the Project would be variable within this SCA due to the orientation and amount of enclosure at a particular bay. Many of the bays within the Study Area are on the north side of the island where all views to the Project are blocked by landmasses, or on the southern and western coast of Cape Cod where views are also mostly blocked by the island landmasses and are located at a very far distance. Few bays, such as Katama Bay on Martha's Vineyard, have views toward the OCA. While this LCA is considered high in respect of sensitivity, impact would range from negligible to major due to the variable degree of visibility and the varying scales of naturalness provided at the LCA. Some bays have lots of activity from sailor to ferry routes with built up infrastructure along the coastlines, while others remain mostly natural with little movement other than the variable sea condition and more distant.
Parks/Developed Recreation	Negligible to Moderate	Views of the Project would be highly variable within this LCA, as would its prominence. The majority of the recreational areas within the Study Area are substantially enclosed and distant from the Project (see KOPs NA19 and CC04). While this LCA is considered medium with respect to sensitivity, impacts would range from negligible to moderate due to the highly variable degree of visibility and distance from the Project and corresponding impacts in prominence and perceived contrast.
Rural/Suburban Residential	Minor	This LCA is mainly located inland and in the northern part of Martha's Vineyard. Views of the Project from within the LCA would be variable and principally provided from settlements on the southern side of Martha's Vineyard and Nantucket islands from where the Project would introduce a complex array of large-scale vertical elements to the background in southwards views, offshore, therefore increasing the complexity of the settlements and affecting the perceived scale, openness, simplicity and horizontal form of the ocean that currently forms the backdrop to such settlement (see KOP-CC01). The sensitivity of this LCA is considered medium, reflecting the reduced degree of susceptibility. Given the limited extent of this LCA subject to views of the Project, its limited prominence and reversibility, the overall impact level is considered minor.

Character Area	Overall Impact Level Range	Overall Impact Rationale
Salt Ponds/Tidal Marsh	Minor	Views of the Project would be highly variable from this LCA, as would its prominence, as the majority of the salt pond/tidal marsh areas are substantially enclosed and distant from the Project (see KOPs MV06 and MV08). The sensitivity at this LCA is considered high, however due to the limited extent of this LCA subject to views of the Project and its limited prominence and reversibility overall impacts are considered minor.
Village/Town	Negligible	When visited in the field, this LCA had no views in the direction of the Project, therefore, the Project is not discernible and presents no contrast or apparent change and would not alter the existing context of the LCA (see KOPs MV23 and NA02). Despite the theoretical visibility indicated, the overall impact would be negligible due to the constrained nature of potential views of the Project.

X.5.2 Onshore SLIA

X.5.2.1 BW1 and BW2 Onshore SL Impact Receptor Identification – Queens, New York

The method for identifying seascape and landscape impact receptors for the onshore components of the Project are identical to the method for the offshore components as described in **Section X.5.1**.

The sections below describe the physical attributes of the New York Onshore APSLVI including topography, landcover, and characteristics of the ecoregion as well as the influence of human settlement activity as expressed through land use and transportation infrastructure. The overall character of the seascape/landscape within the APSLVI, including any distinctive areas that can be identified, and the particular combinations of elements and aesthetic and perceptual aspects that make each area distinctive, have been used to identify areas of homogenous character (SLCAs) which are defined and mapped.

X.5.2.1.1 Topography

Both of the New York onshore substation facility sites under consideration occupy generally flat and low-lying land on the waterfront of the East River (see **Figure X.5-22**). The East River is the key waterway within the New York Onshore APSLVI and passes directly north and west of Lawrence Point and the Astoria power complex where the proposed onshore substation will be located. East of Lawrence Point, Luyster Creek is a waterway that extends south from the East River. Randall's Island and Rikers Island form two large land masses within the East River in the vicinity of the New York Onshore APSLVI, to the west and north.

X.5.2.1.2 Landcover and Land Use

The New York Onshore APSLVI covers an area located within the northern portion of New York City and is centered on the navigable waters of the East River, within the Ditmars Steinway neighborhood of Queens. The area is typified by a densely developed urban cityscape with associated large-scale built forms arranged on an extensive gridwork of roads (see **Figure X.5-23**). Transportation infrastructure (including rail and airport infrastructure) is also a key characteristic. However, the majority of the waterfront of the East River comprises light industrial land uses, with limited open parkland/green spaces and residential areas also present. Areas of green space within the Onshore APSLVI include public parks of varying sizes, such as Ralph Demarco Park, Barretto Point Park, and Randall's Island in Queens; Soundview Park, Pugsley Creek Park, and Ferry Point Park in the south Bronx; and Morningside Park, St. Nicholas Park, and Jackie Robinson Park in northern Manhattan. Within the neighborhoods surrounding the New York Onshore APSLVI, tree lined streets are commonplace, especially in the western and northern sections of the New York Onshore APSLVI.

X.5.2.1.3 Ecoregions

The U.S. EPA Level IV ecoregions of New York (Bryce et al., 2010) were used to develop a description of the existing seascape and landscape character within the New York Onshore SLVIA. Ecoregions provide a useful starting point for describing visual character at a regional level because they are defined based on multiple elements which include physiographic elements of landform, vegetation, water, and cultural modifications (defined as human/man-made modifications to the landscape such as urban development). Level IV ecoregions which lie within the New York Onshore SLVIA are the Long Island Sound Coastal Lowland ecoregion (59g) and the Southern New England Coastal Plains and Hills (59c). These ecoregions are described in more detail below.

Long Island Sound Coastal Lowland

The western portion of Long Island and a portion of the southern coast of New York are located within the Long Island Sound Coastal Lowland ecoregion. This ecoregion is characterized by flat to irregular plains, coastal beaches, bays, tidal flats, and low gradient streams. Elevations are less than 250 ft (76.2 m) above mean sea level (AMSL). Vegetation types consists of oak-hickory or oak-tulip forests in upland areas, and red maple, sweet gum and pin oak occur in wetter areas. Coastal bluffs consist of pitch pine, eastern red cedar, oaks and hickory. Low dunes consist of beach grassland goldenrod, and low marshes consist of cordgrass and spike grass.

Little of the original vegetation cover remains on western Long Island and the southern coast of New York as it lies within the New York Onshore APSLVI, as much of the ecoregion is highly urbanized. Small acreages exist in parks and preserves, but species diversity is much reduced. Cultural modifications which have impacted upon the vegetative cover include intensive urban development (such as New York City), dense suburban and some rural residential development. Coastal resorts and development associated with coastal tourism and sport and commercial fishing also occur in this ecoregion.

Southern New England Coastal Plains and Hills

The western portion of the New York Onshore APSLVI is within this ecoregion. This ecoregion is characterized by irregular plains with some low hills. Ponds, small lakes, reservoirs, streams and wetlands throughout (Bryce et. al. 2010). Elevations in this ecoregion range between 40 to 800 ft (12.2 to 243.8 m) AMSL. Vegetation type consists of Appalachian oak-pine forests and hardwoods, swamps, and vegetation associated with small river floodplains such as oak, sycamore and maple trees. Historically, forests were dominated by a mix of oaks, American chestnut, hickories, and some hemlock and white pine. As with many other areas of New England, these forests were cleared, either for agriculture and grazing or for the production of charcoal. The Southern New England Coastal Plains and Hills ecoregion is distinguished from the more completely forested Glaciated Reading Prong/Hudson Highlands (58i) in the north by its low rolling topography and mix of woodland, rural residential, urban, and suburban centers.

Similar to the Long Island Sound Coastal Lowland ecoregion, very little of the original vegetation cover remains within the New York Onshore APSLVI, as much of the ecoregion is highly urbanized. Small acreages exist in parks and preserves, but species diversity is much reduced. Cultural modifications which have impacted upon this cover include intensive urban development, dense suburban and some rural residential development. Coastal resorts and development associated with coastal tourism and sport and commercial fishing also occur in this ecoregion.

FIGURE X.5-22. BW1 AND BW2 ONSHORE TOPOGRAPHY (NEW YORK)

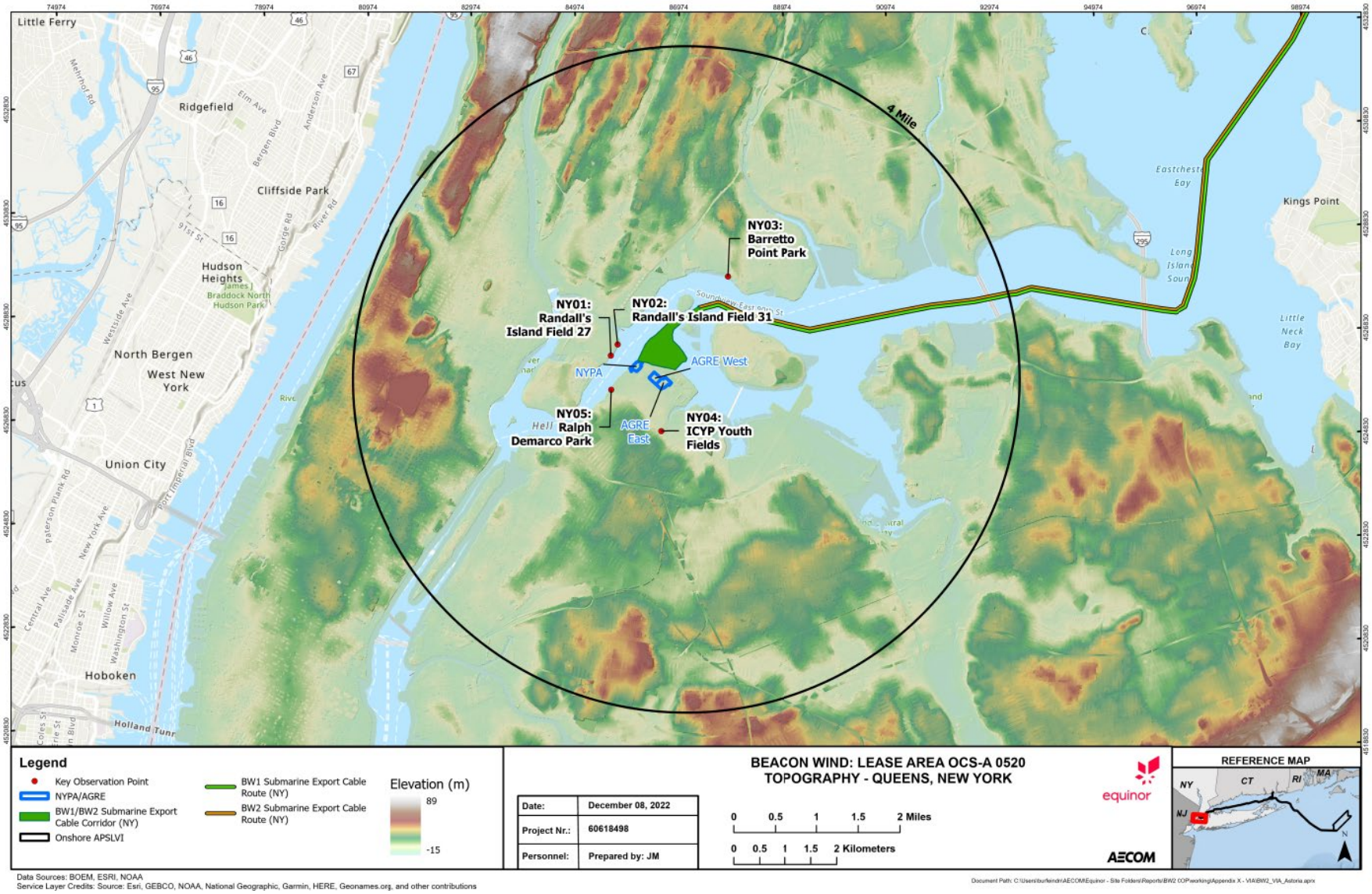
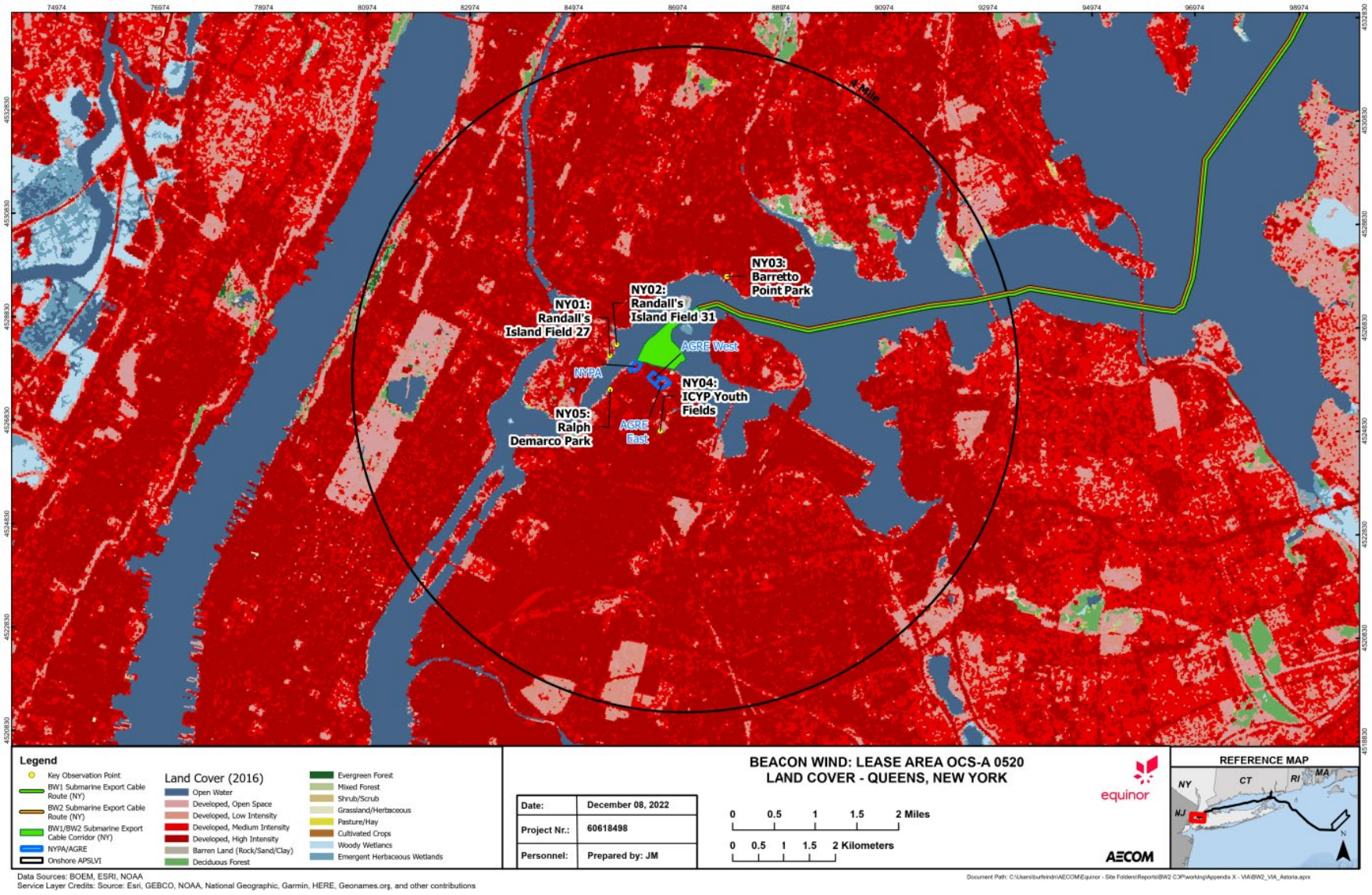


FIGURE X.5-23. BW1 AND BW2 ONSHORE LAND COVER (NEW YORK)



X.5.2.1.4 Environmental Justice Communities

The area within the New York Onshore APSLVI contains three counties within New York City (Bronx County, New York County, and Queens County), all of which meet the EPA criteria to be identified as EJ communities at the county level. As shown in **Figure X.5-24,** the New York Onshore APSLVI includes several census block groups within Bronx County, New York County, and Queens County meeting the EJ community thresholds defined via the EJ Index.

X.5.2.1.5 Seascape and Landscape Character Areas

As noted, the ecoregions described above are considered a useful starting point for understanding the character of the seascape and landscape within the New York Onshore APSLVI. However, to understand the nature of the impact of the onshore elements of the Project on the landscapes found in New York City, a more refined characterization was conducted. Therefore, to assist in the assessment of impacts on landscape and seascape character, SLCAs have been defined and delineated within the New York Onshore APSLVI.

The following five SLCAs have been categorized within the New York Onshore APSLVI which would be subject to theoretical visibility of either onshore substation facility location.

- River Corridor (SCA);
- River Islands: Including Randall's, Riker's Island and North and South Brother Islands (LCA);
- Urban/Residential/Commercial Areas (LCA);
- Light Industrial and Transportation Areas (LCA); and
- Open Green Space (LCA).

The SLCAs are further described in **Table X.5-11** below. The table includes a discussion of the SLCA's susceptibility and value in accordance with the BOEM SLVIA Methodology. A representative location and image of each SLCA is included in the table. The location and extent of the SLCAs are illustrated in **Figure X.5-24**.

FIGURE X.5-24. BW1 AND BW2 ONSHORE SEASCAPE/LANDSCAPE CHARACTER AREAS (NEW YORK)

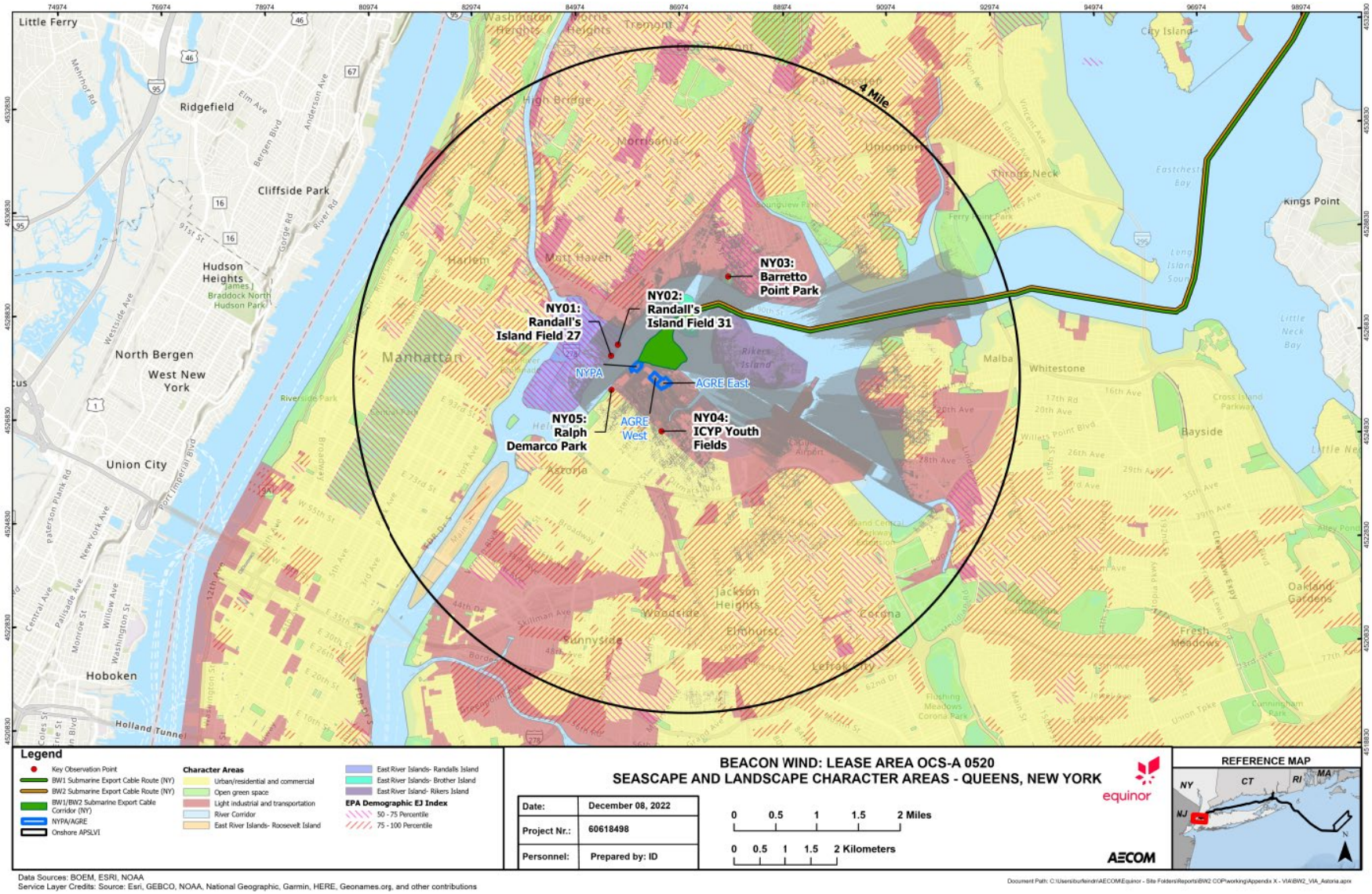
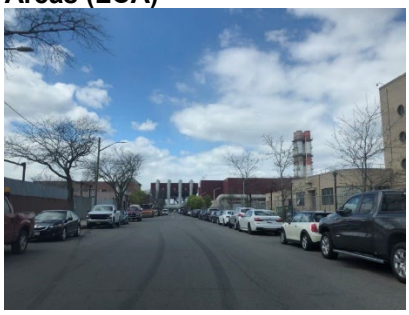
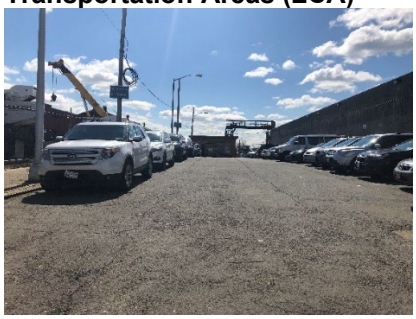


TABLE X.5-11. SEASCAPE/LANDSCAPE/CITYSCAPE CHARACTER

Seascape/Landscape Character Area (SLCA)	Description
River Corridor (SCA) 	**Location and Extent** This SCA is subject to the greatest extent of potential visibility of the onshore substation facilities and forms a significant navigable watercourse and transportation corridor within the New York Onshore APSLVI. **Key characteristics** • Broad expanse of essentially simple horizontal form and sheltered open water enclosed by a highly complex and variable backdrop and skyline comprised of a multitude of complex urban forms and vegetation. • Presence of islands of varying size and character (see description of River Islands character areas below). • Substantial influence of industrial land uses and the Light Industrial and Transportation LCA in all directions. • Numerous road and rail bridges that increase visual and noise disturbance within the River Corridor. • Dynamic character highly influenced by changeable weather patterns and tidal action. • Contrasting texture from smoothness of open water and coarser texture of adjoining built forms. • Seasonality and time-of-day produce variations in color, arising from different light and weather conditions. Contrast between colors of open water and adjoining urban forms. • Night-time character is influenced by reflections of light across the water, including moonlight, from boats, and most prominently from artificial light sources from the adjacent urban areas and Urban/Residential/Commercial LCA. • Medium susceptibility due to the prevalence of industrial and transportation land uses and infrastructure aligning the sides of much of the river corridor which would lessen the contrast between the type of development proposed and the baseline context. • High value due to its visual prominence, important navigation route, and importance as an aspect of the cityscape. • Overall, the river corridor is highly sensitive due to its value and susceptibility.

Seascape/Landscape Character Area (SLCA)	Description
River Islands (LCA): (Randall's, Riker's, and North and South Brother Island areas) Looking across the East River to North and South Brother Island areas 	**Location and Extent** This LCA is located within the River Corridor and is distributed across four distinct landmasses that form notable features within the East River: • Randall's Island, located east of the substation sites and splits the East River from the Harlem River; • Riker's Island, located north and northeast of the substation sites, is linked to the mainland by the Francis R. Buono Memorial Bridge; • North and South Brother Island, which are two small islands north of Lawrence Point. **Key Characteristics** • Randall's Island: Comprises areas of Open Green Space LCA including ball parks, and Light Industrial and Transportation Areas. The overwhelming impression, when viewed from the neighboring River Corridor SCA and the receptor locations on the eastern side of East River (e.g., Ralph Demarco Park) is of an industrial waterfront. Susceptibility is overall medium due to the constrained views due to industrial structures but openness along the riverbank. Medium value due to the varied land uses. Extensive light industrial areas and transport infrastructure corridors have a generally low value, and medium value locations are placed upon open green spaces were scenic quality and recreational activity increases. • Riker's Island: Comprising prison facilities/buildings coupled with areas of open grasslands and parking. Seen from the adjoining East River corridor and mainland, the island is typified by a low horizontal landmass overtopped by large scale rectangular buildings. The concentrations of car parking around the edges of the island adds considerable complexity to the island's appearance. The surrounding built structures make for low susceptibility, and value is low due to the dominance of the prison and low scenic value of the island. The overall sensitivity of the Island is low. • North and South Brother Islands: These small islands are low irregular shaped landmasses in the East River. The islands are distinct from Randall's and Riker's Islands, being extensively wooded with narrow shallow shelving beaches, and in the case of North Brother Island, is occupied by the remains of a lighthouse and a previous hospital and waterfront gantry. The island is currently a sanctuary for herons and other wading shorebirds and is presently abandoned and off-limits to the public. Susceptibility and value are low due to the absence of access, making it a low sensitivity LCA.

Seascape/Landscape Character Area (SLCA)	Description
Urban/Residential/Commercial Areas (LCA) 	**Location and Extent** A high proportion of the New York Onshore APSLVI is comprised of residential areas. These areas are often fringed by Light Industrial and Transportation LCAs, but there are a small number of locations where Residential Areas border the waterfront of East River and provide opportunities to see the onshore substation facilities. Elsewhere restricted views towards the substation sites would be provided from limited numbers of locations at the northern extents of Ditmars Steinway along 20th Avenue. **Key characteristics** • In the neighborhoods of Ditmars Steinway, Astoria Heights, and Astoria and at a greater distance, Jackson Heights and Sunnyside Gardens, properties are generally 2- or 3-story terraced buildings, although these are occasionally interspersed with larger blocks of apartment buildings which reach to 5 stories or more. Buildings are laid out in a dense grid pattern along linear streets. Streets run in a northeast/ southwest alignment, with an industrial site located at the northern end of the street and creating separation from the East River. Small scale commercial development is present within the interior of these settled areas and are screened from views of the substations by intervening housing. • To the west, residential areas on Randall's Island are concentrated on the western side of the island from where views of the substation sites would be obscured by intervening topography, buildings, and vegetation. • Further west, separated from the sites by the East River and Randall's Island, lie the neighborhoods of Manhattan – East Harlem, the Upper East Side and Lennox Hill. Manhattan is typified by a predominance of high-rise development and skyscrapers. Tall apartment blocks of 20 stories or greater are located throughout Manhattan but are interspersed with areas of a similar character to that at Ditmars Steinway and Astoria. In addition to the significant urban form of Manhattan, it contains extensive commercial and retail land uses. Additionally, large areas of green space lie between apartment buildings and at the open space landmark, Central Park. • To the north, beyond the large areas of industry which occupy the northern shore of East River, are the neighborhoods of Harlem, Mott Haven, and Hunt's Point. Blocks of residential properties are densely laid out along a gridded pattern of streets. High rise apartment buildings are located amongst areas of terraced walk-ups, comprised of 4 and 5 stories. Areas of green space are positioned around the high-rise buildings, and street trees are present along the urban neighborhood roadways. • There is variable susceptibility depending upon the location, extent of enclosure and elevation. The greatest susceptibility occurs in open parks and streets. A complex and varied environment with variable scenic quality makes for a medium valued LCA. • The overall sensitivity for this LCA is medium.

Seascape/Landscape Character Area (SLCA)	Description
Light Industrial and Transportation Areas (LCA) 	**Location and Extent** This is an extensive LCA that is found around the edges of the East River corridor. **Key characteristics** • The characteristics of the Light Industrial and Transportation LCA vary somewhat across the New York Onshore APSLVI but typically comprise large-sale rectilinear industrial buildings and commercial properties, large open expanses of asphalt and parking and wide roads. These areas are often associated with extensive security fencing and overhead power infrastructure and are in a relatively poor condition with low scenic quality. This LCA often forms the backdrop and skyline to views from the neighboring River Corridor character area. • Low susceptibility due to the predominance of large-scale industrial buildings that foreshorten views across the LCA thereby limiting potential visibility of the type of development proposed. • Value is low due to the generally poor scenic quality and industrial character of this LCA. • Sensitivity is overall low due to the low value and susceptibility.
Open Green Space (LCA) Green space along the East River on Randall's Island 	**Location and Extent** The Open Green Space LCA is comprised of public parks of varying sizes including Ralph Demarco Park, Barretto Point Park, and Randall's Island in Queens; Soundview Park, Pugsley Creek Park, and Ferry Point Park in the south Bronx; and Morningside Park, St. Nicholas Park, and Jackie Robinson Park in northern Manhattan. The portions of the Open Green Space LCA subject to impacts from the onshore substation facilities are located at Randall's Island Fields and at Barretto Point Park. **Key characteristics** • Randall's Island Fields are formal ball parks set within an open grassland area. A key characteristic of this area is the connection and views of the East River and the complexes of industrial structures that occupy the skylines in the background within views to the east. • Barretto Point Park comprises areas of open grassland with dense tree belts and a shallow shelving beach, and incorporates a number of attractions including tennis courts, an amphitheatre and floating pool. Views across East River are provided from the amphitheatre as well as the beach and floating pool. • High susceptibility due to the degree of openness and availability of connecting views across the river and/or city. • High value due to the good condition, visual links to the River Corridor SCA and other parts of the cityscape, and importance for recreation. • Overall, sensitivity for this LCA is high due to its high value and high susceptibility.

X.5.2.2 BW1 and BW2 Onshore SL Impact Assessment – Queens, New York

The method for identifying seascape and landscape impacts for the onshore components of the Project are identical to the method for the offshore components as described in **Section X.5.1**. As with the offshore SLIA, seascape and landscape impacts resulting from the onshore components of the Project can include:

- Change or complete or partial loss of elements, features, or aesthetic, perceptual, or experiential aspects that contribute to the distinctive character of the seascape/landscape;
- Addition of new elements and/or features that may affect the distinctive character of the seascape/landscape; or
- Change in the overall character of the seascape/landscape resulting from the combined impacts of the changes, losses, or additions described above.

Assessing the impact level of seascape/landscape impacts is ultimately a matter of professional judgment. The impact level is a function of both the impact receptor (the SLCA) and the nature of the impact. The key factors are referred to as the sensitivity of the SLCA and the magnitude of the effect. In accordance with the BOEM SLVIA Methodology, each factor and its components are rated on an ordinal scale with three levels, which in some cases use different terms for semantic reasons but are considered equal in importance; in other words, a rating of “high” is considered equivalent in importance to a rating of “large” or “good.” Similarly, a rating of “low” is considered equivalent to a rating of “small” or “poor.” These relationships were previously presented in **Table X.5-3**. In addition to the three levels employed in the BOEM SLVIA Methodology, Beacon Wind has employed a fourth level rating of “Negligible” with respect to size and scale of effect and geographic extent of effect components of impact magnitude when the Project will not be discernible from the SLCA nor alter the SLCA.

X.5.2.2.1 SLCA Receptor Sensitivity

The sensitivity factor of the character area receptor has two components: susceptibility and value. The susceptibility of a seascape/landscape receptor to change is its ability to accommodate the impacts of the Project without substantial change to the basic existing characteristics of the defined character areas within the APSLVI. This applies to the overall character of a particular seascape/landscape area, or an individual element and/or feature, or a particular aesthetic, experiential, and perceptual aspect that contributes to the character of the area. A seascape/landscape receptor are likely to be highly valued when a character area is judged to be distinctive and where scenic quality, wildness or tranquility, and natural or cultural heritage features make a particular contribution to the seascape or landscape. In the evaluation of value, special consideration is given to key characteristics—that is, those components that contribute significantly to the distinctive character of the SLCA.

Table X.5-12 below shows the value and susceptibility ratings assigned to each of the affected SLCAs within the New York Onshore APSLVI and how that determines the overall sensitivity of the SLCA. Out of the seven character areas, three are rated low, three are rated medium, and one is rated high sensitivity. **Table X.5-11** provides in-depth character area descriptions and rationales for these value and susceptibility ratings.

TABLE X.5-12. ONSHORE SLIA RECEPTOR SENSITIVITY MATRIX – QUEENS, NEW YORK

Character Area	Value Rating	Susceptibility Rating	Sensitivity Rating a/
East River Islands – Rikers Island	Low	Low	Low
East River Islands – Brother Island	Low	Low	Low
East River Islands – Randall's Island	Medium	Medium	Medium
Light Industrial and Transportation	Low	Low	Low
Open Green Space	High	Medium	High
River Corridor	High	Low	Medium
Urban/Residential and Commercial	Medium	Medium	Medium

Notes:
a/ see **Table X.5-4** above for matrix for combining sensitivity components.

X.5.2.2.2 SLCA Magnitude of Impact

The magnitude factor has three components: the size and scale of the change to existing conditions caused by the project, the geographic extent of the area subject to the project's effects, and duration and reversibility of impacts. These components are described below, and the final magnitude of impact ratings are displayed in **Table X.5-14**. The final magnitude ratings are established through BOEM's matrix for combining the three magnitude components described below (BOEM 2021a).

Size and Scale of Change

The degree of change from loss, addition, or alteration of character, features, elements, or aesthetic, experiential, or perceptual aspects of affected SLCAs within the New York Onshore APSLVI is considered small. The definitions used to determine the size and scale of change are the same as the Offshore SLIA Analysis (**Table X.5-6**).

Due to the highly industrial an urbanized context that the SLCAs are set it, the size and scale for all SLCAs is small. A change could sometimes be noticed by a casual observer. It represents a highly localized and small-scale change that would be unlikely to compete, to any notable extent, with key characteristic SLCA elements at a representative viewpoint.

Geographic Extent

The assessment of impact magnitude also includes consideration of the geographic extent over which the impact will be experienced. For seascape/landscape impacts from the Queens onshore substation facilities, the geographic extent of SLCA impacts relates to the physical alteration of the LCA on which the onshore substation facility will be sited as well as the visibility of the onshore substation facilities from SLCAs located within the APSLVI. Only the Light Industrial and Transportation LCA will be physically altered by the onshore components of the Project.

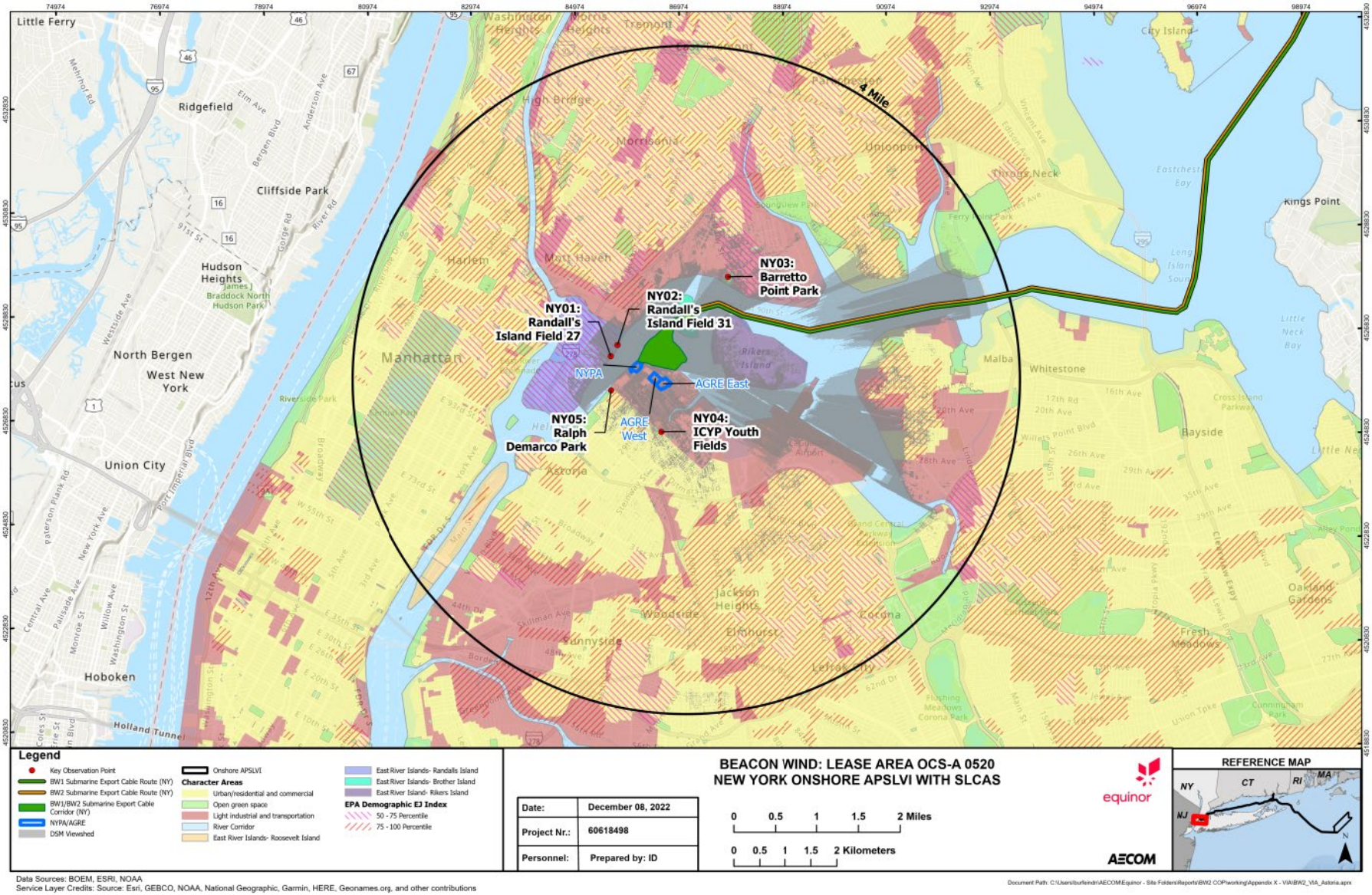
Table X.5-13 below shows the total geographic area of each SLCA within the ZTV (4 mi Study Area), and the percent of that SLCA geographic area that falls within the DSM viewsheds (New York Onshore APSLVI) of the AGRE and NYPA onshore substation facilities, respectively. **Figure X.5-25** displays the DSM viewshed overlaying the SLCAs. "River Corridor" represents the largest coverage of the character areas within the DSM viewsheds of the AGRE and NYPA facilities, at 56 and 40 percent. Fifty-two percent of the "East River Islands – Brother Island" character area occurs within the DSM viewshed of the AGRE. Forty-seven percent of the same character area occurs with the DSM viewshed of NYPA. This represents the second largest coverage of the character areas.

Table X.5-12 was used in conjunction with **Table X.5-6** (same criteria from the Offshore SLVIA) to determine the overall geographic extent ratings for each SLCA (see **Table X.5-14**). Overall, two SLCAs have a large geographic extent rating, one has a medium rating, two have a small rating, and one has a small to medium and one a medium to large rating, depending on the viewshed.

TABLE X.5-13. GEOGRAPHIC EXTENT OF SLCA IMPACTS WITHIN THE QUEENS, NEW YORK ONSHORE APSLVI

Character Areas	Total Area	Total Area within AGRE Viewshed	Percent (%) within AGRE Viewshed	Total Area within NYPA West Viewshed	Percent (%) within NYPA Viewshed
East River Islands – Rikers Island	429.7 ac (173.9 ha)	133.9 ac (54.2 ha)	31%	74.5 ac (30.2 ha)	17%
East River Islands – Brother Island	44.9 ac (18.2 ha)	23.5 ac (9.5 ha)	52%	21.1 ac (8.5 ha)	47%
East River Islands – Randall's Island	560.8 ac (226.9 ha)	111.9 ac (45.3 ha)	20%	92.5 ac (37.4 ha)	16%
Light Industrial and Transportation	6,384.1 ac (2,583.6 ha)	1080.2 ac (437.1 ha)	17%	597.4 ac (241.8 ha)	9%
Open Green Space	2,523.9 ac (1,021.4 ha)	50.7 ac (20.5 ha)	2%	16.5 ac (6.7 ha)	1%
River Corridor	4,093.2 ac (1,656.5 ha)	2280.9 ac (923 ha)	56%	1,621.3 ac (656.1 ha)	40%
Urban/Residential and Commercial	17,888.3 ac (7,239.1 ha)	350.4 ac (141.8 ha)	2%	113.2 ac (45.8 ha)	1%

FIGURE X.5-25. NEW YORK ONSHORE APSLVI WITH SLCAS (NEW YORK)



Duration and Reversibility of Impacts

The duration of onshore SLCA impacts at the Queens onshore substation facility locations is considered long-term given that the Project is assumed to have a Project lifetime of approximately 35 years for the purposes of this SLVIA although some installations and Project components may remain fit for continued service after such time. There is not expected to be any SLCA residual impacts remaining after decommissioning.

Reversibility has been determined to be fully reversible. The assessment of duration and reversibility impacts considered in combination has been determined to be fair given the long-term duration but full reversibility.

TABLE X.5-14 ONSHORE SLIA MAGNITUDE OF EFFECT MATRIX – QUEENS, NEW YORK

Character Area	Size and Scale Rating	Geographic Extent Rating	Duration/ Reversibility Rating	Magnitude Rating a/
East River Islands – Rikers Island	Small	Medium to Large	Fair	Small
East River Islands – Brother Island	Small	Large	Fair	Medium
East River Islands – Randall's Island	Small	Medium	Fair	Small
Light Industrial and Transportation	Small	Small to Medium	Fair	Small
Open Green Space	Small	Small	Fair	Small
River Corridor	Small	Large	Fair	Medium
Urban/Residential and Commercial	Small	Small	Fair	Small

Notes:
a/ see Table 6.4-2 in BOEM SLVIA Methodology for matrix for combining magnitude factors.

X.5.2.2.3 SLCA Impact Level (Combining Sensitivity and Magnitude)

The BOEM SLVIA Methodology includes a matrix for combining receptor sensitivity and magnitude of impact ratings to derive an overall SLCA impact rating, which is "...recommended but [is] subject to change in consideration of individual project circumstances" and is scored on a scale of *minor*, *moderate*, and *major* (BOEM 2021a). In addition to the three level ratings employed in the BOEM SLVIA Methodology, Beacon Wind has employed a fourth level rating of *negligible* when it has been determined that the Project will not be discernible from the SLCA nor alter the SLCA in a perceptible way. The overall impact level ratings for the affected SLCAs and the rationale behind those ratings are presented in **Table X.5-15** below. These ratings are established using BOEM's matrix for combining sensitivity and magnitude to identify impact level (BOEM 2021a). Overall, five of the seven SLCAs have a minor overall impact level, with the two remaining SLCAs having a moderate overall impact level.

TABLE X.5-15 SLIA OVERALL IMPACT – QUEENS, NEW YORK

Character Area	Overall Impact Level	Overall Impact Rationale
East River Islands – Rikers Island	Minor	While a medium geographical extent is predicted, field reconnaissance suggests that much of the predicted visibility would be interrupted by built forms on the island, also giving a low susceptibility. Value is low due to the dominance of the prison and low scenic value of the island. Given the low sensitivity of the character type, the limited visibility and similar scale of built forms pre-existing on the island, both the AGRE and NYPA substation facility options would have a minor overall impact to the character area.
East River Islands – Brother Island	Minor	While a large geographical extent is predicted, there is essentially no public access to these islands, making for low sensitivity in terms of both value and susceptibility. They are situated within a navigable waterway and views from the islands are bounded by extensive urban form and industrial developments, consequently, the overall impact of both AGRE and NYA would be minor.
East River Islands – Randall's Island	Minor	While a medium geographical extent is predicted, field reconnaissance suggests that much of the predicted visibility would be interrupted by built forms unless along the eastern waterfront areas of the island. Given the medium sensitivity of the character type and the similar scale of built forms pre-existing in views across the East River, overall impacts of AGRE and NYPA would be minor.
Light Industrial and Transportation	Minor	Although the proposed substation options are both located in this LCA, the impacts to the LCA within the viewshed is minor. Where visible, the substations would be seen relatively distantly in some areas, and already within a highly industrial context and would therefore not be anomalous.
Open Green Space	Moderate	Although sensitivity is high at this LCA, both AGRE and NYPA would be seen relatively distantly and in an industrial context and would therefore not be anomalous. Many of these open green spaces are bounded by built structures creating restricted views.
River Corridor	Moderate	The River Corridor is a moderately sensitive SCA. Where the substations may be visible, the size/scale and character of the substations are consistent with the existing industrial context and so would therefore not be anomalous.
Urban/Residential and Commercial	Minor	Due to the degree of visibility being highly constrained and subject to the influence of variable quality residential and urban forms, and medium sensitivity, overall impacts to the LCA are minor.

X.5.2.3 BW2 Onshore SL Impact Receptor Identification – Waterford, Connecticut

The method for identifying seascape and landscape impact receptors for the onshore components of the Project in Connecticut are identical to the method for the offshore components and onshore components in New York as previously described.

The sections below describe the physical attributes of the Connecticut Onshore APSLVI including topography, landcover, and characteristics of the ecoregion as well as the influence of human settlement activity as expressed through land use and transportation infrastructure. The overall character of the seascape/landscape within the Connecticut Onshore APSLVI, including any distinctive areas that can be identified, and the particular combinations of elements and aesthetic and perceptual aspects that make each area distinctive, have been used to identify areas of homogenous character (SLCAs) which are defined and mapped.

X.5.2.3.1 Topography

The Waterford, Connecticut onshore substation facility site occupies generally flat and low-lying land on a peninsula surrounded by the Niantic Bay and Jordan Cove (see **Figure X.5-26**). The rest of the Connecticut Onshore APSLVI contains rolling hills further inland.

X.5.2.3.2 Landcover and Land Use

The Connecticut Onshore APSLVI is located within the southwest portion of the Town of Waterford and is centered on Millstone Point, which is surrounded by water. The area immediately surrounding the Waterford, Connecticut onshore substation facility site is developed at a high density. However, less than 0.5 mi (0.8 km) from the site, the land cover changes dramatically, with deciduous forest and wetlands covering the majority of the area with the exception of scattered developments (see **Figure X.5-27**). Transportation infrastructure (including rail infrastructure) is also a key characteristic. However, the majority of the rail line passes through light industrial land uses, with open parkland/green spaces and residential areas also present. Areas of green space and ocean beaches within the Connecticut Onshore APSLVI include public parks of varying sizes, such as McCook's Park and Beach, the Niantic Boardwalk, and Crescent Park. There are also a number of private beaches, including Black Point Beach, Attawan Beach, and Pleasure Beach. Within a neighborhood of about 0.3 mi (0.48 km) east of the site, tree lined streets are commonplace.

X.5.2.3.3 Ecoregions

The U.S. EPA Level IV ecoregions of New England (Griffith et al., 2009) were used to develop a description of the existing landscape and seascape character within the Connecticut Onshore SLVIA. Ecoregions provide a useful starting point for describing visual character at a regional level because they are defined based on multiple elements which include physiographic elements of landform, vegetation, water, and cultural modifications (defined as human/man-made modifications to the landscape such as urban development). Level IV ecoregion which lies within the Connecticut Onshore SLVIA is the Long Island Sound Coastal Lowland ecoregion (59g).

The southern coastline of Connecticut and Rhode Island are located within the Long Island Sound Coastal Lowland ecoregion. This ecoregion is characterized by low elevation rolling coastal plain, tidal marshes, estuaries, sandy dunes and beaches, and rocky headlands. Vegetation types consists of black (*Quercus velutina*), red (*Quercus rubra*), and white oaks (*Quercus alba*), hickories (*Carya spp.*), and black cherry (*Prunus serotina*) in coastal hardwood forests, and on coastal headlands, pitch pine

(*Pinus rigida*) and post oak (Q*uercus stellata*) occur, while some scarlet oak (*Quercus coccinea*) and sassafras (*Liquidambar styraciflua*) stand on stabilized dunes. Dense thickets of vines and shrubs such as catbrier (*Smilax glauca*), greenbrier (*Smilax spp.*), and poison ivy (*Toxicodendron radicans*) are common. Some Southeastern flora and fauna species of the Piedmont and coastal plain reach their northern limit in this ecoregion.

Along the coastline and waterfront, areas are more settled and urban than inland areas which are characterized by a greater degree of vegetation cover, such as those listed above. Cultural modifications which have impacted upon the character of the coast include urban development, dense suburban and residential development. Coastal resorts and development associated with coastal tourism and sport and commercial fishing also occur in this ecoregion.

X.5.2.3.4 Environmental Justice Communities

EPA EJScreen data indicates a single census block group meeting the EJ community thresholds defined via the EJ Index criteria located within the Connecticut Onshore APSLVI. As shown in **Figure X.5-28**, that census block group is located within the Town of New London and shows where the EJ community is in relation to the SLCAs.

X.5.2.3.5 Seascape and Landscape Character Areas

As noted, the ecoregion described above is considered a useful starting point for understanding the character of the landscape within the Connecticut Onshore APSLVI. However, to understand the nature of the impact of the onshore elements of the Project on the landscapes found in Connecticut, a more refined characterization was conducted. Therefore, to assist in the assessment of impacts on seascape and landscape character, SLCAs and the OCA have been defined and delineated within the Connecticut Onshore APSLVI.

The following 11 SLCAs have been categorized within the Connecticut Onshore APSLVI and would be subject to theoretical visibility of the onshore substation facility.

- Suburban Residential (LCA);
- Village/Town (LCA);
- Light Industrial (LCA);
- Parks/Developed Recreation (LCA);
- Forests/Woodlands (LCA);
- Ocean Beach (SCA);
- Coastal Bluffs (SCA);
- Salt Pond (LCA);
- River Corridor (SCA);
- Marine Bays (SCA); and
- Ocean (OCA).

The SLCAs are further described in **Table X.5-11** below their geographic location and extent and key characteristics including the SLCA's susceptibility and value in accordance with the BOEM SLVIA Methodology. A representative location and image of each SLCA is included in the table. The location and extent of the SLCAs are illustrated in **Figure X.5-28**.

FIGURE X.5-26. BW2 ONSHORE TOPOGRAPHY MAP (CONNECTICUT)

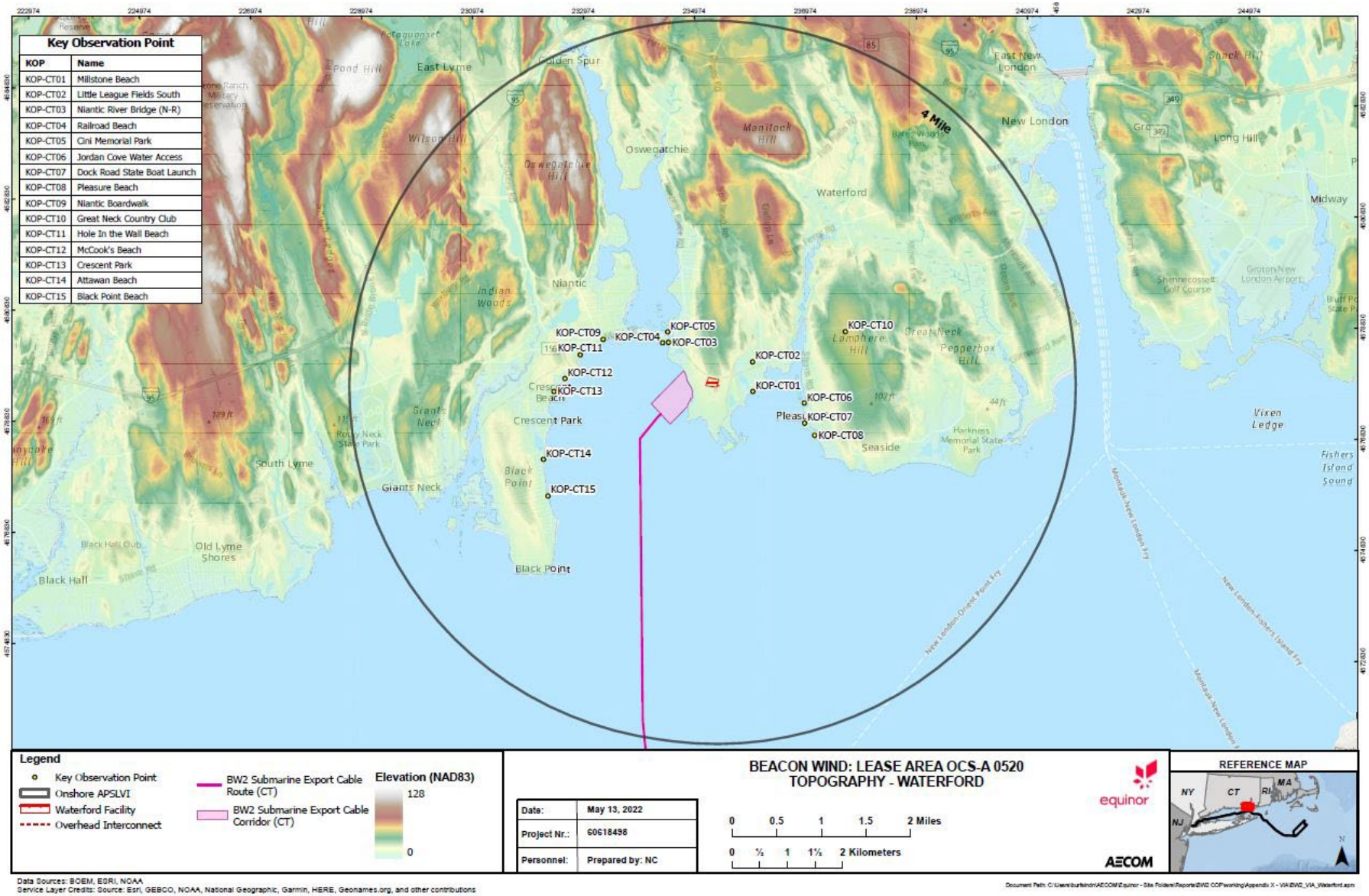


FIGURE X.5-27. BW2 ONSHORE LAND COVER MAP (CONNECTICUT)

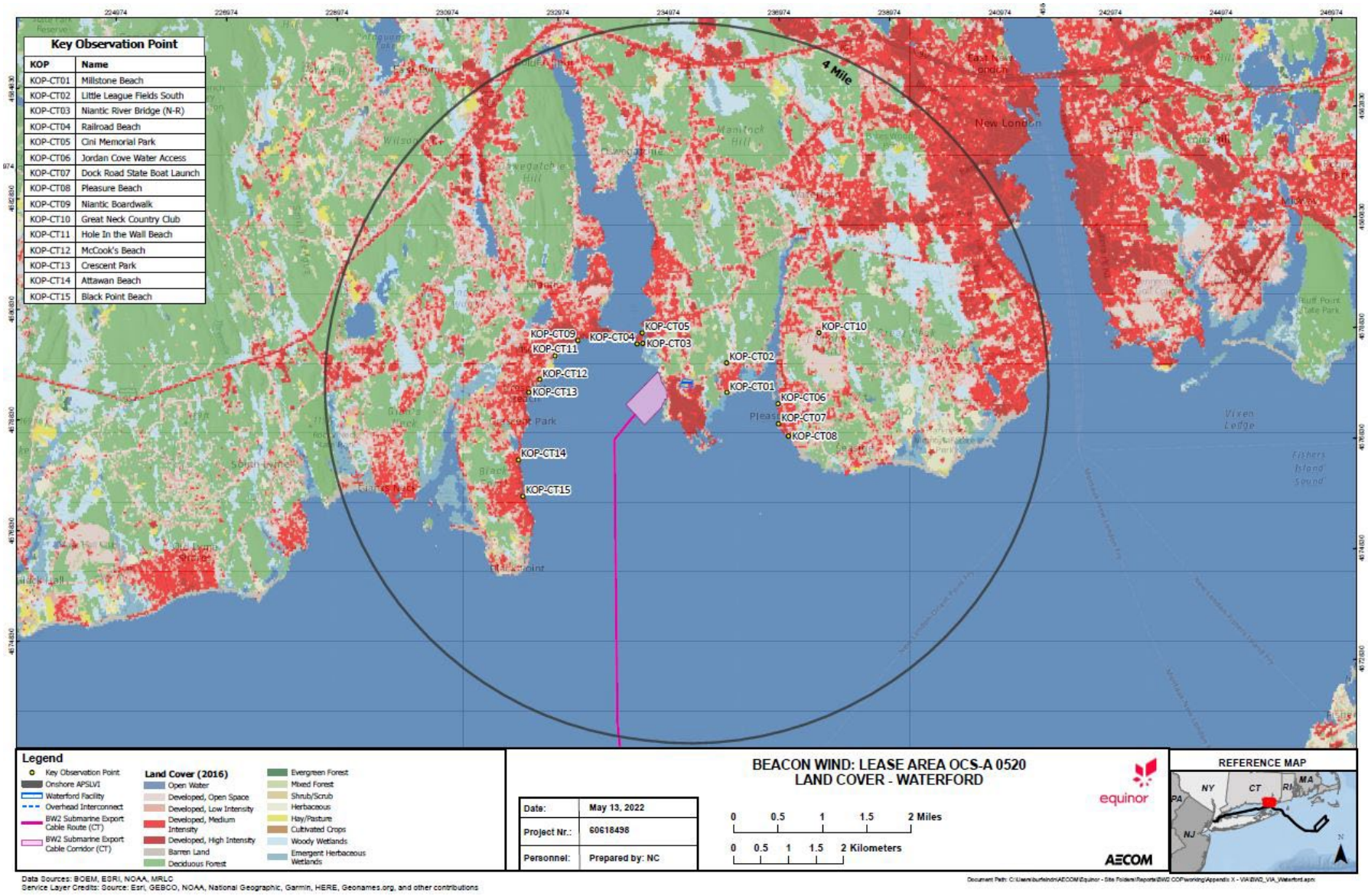


FIGURE X.5-28. BW2 ONSHORE SEASCAPE/LANDSCAPE CHARACTER AREAS MAP (CONNECTICUT)

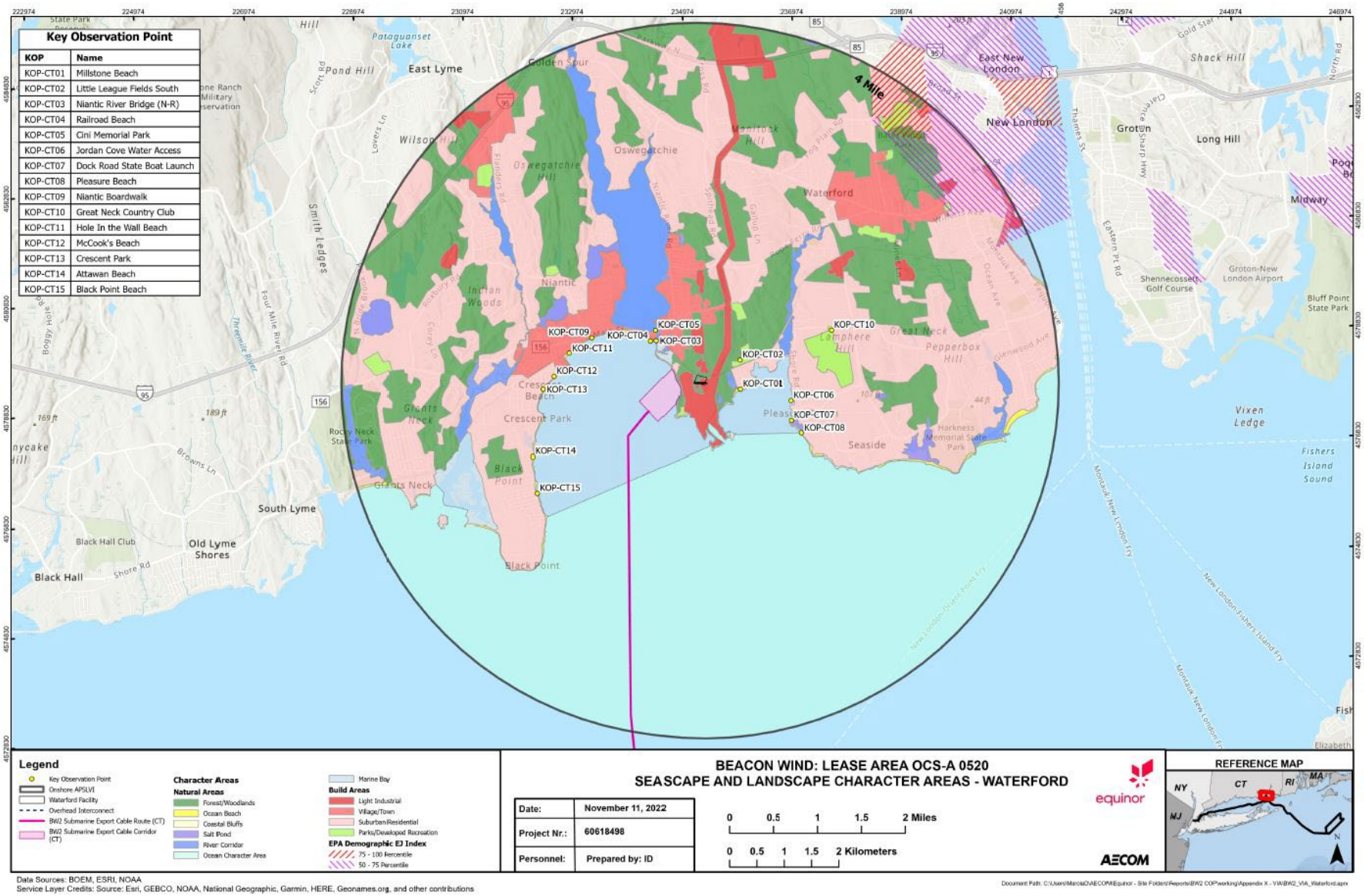
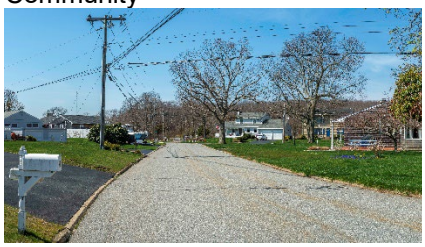


TABLE X.5-16. SEASCAPE/LANDSCAPE/CITYSCAPE CHARACTER

Seascape/Landscape Character Area (SLCA)	Description
Suburban Residential (LCA) Millstone Point Residential Community 	**Location and Extent** A high proportion of the Connecticut Onshore APSLVI is comprised of low density residential areas. These areas are often fringed by dense Forests/Woodlands and some Light Industrial and Transportation Areas, or private Residential Areas that abut the waterfront of Niantic Bay or Jordan Cove and provide opportunities to see the BW2 onshore substation facility. Elsewhere restricted views towards the substation site would be provided from limited numbers of locations inland due to screening from vegetation, built structures, and topography. **Key Characteristics** • The residential neighborhoods comprising the LCA are composed of detached single-family homes. Dwellings and associated streets are laid out on a grid pattern. • Dense stands of trees are common just on the outskirts of the residential community. • Most homes are of a Cape Cod vernacular. • This LCA is generally enclosed by woodlands, and residential structures limit views out to potential developments of the type proposed. However, those residential structures along the coastline have uninterrupted views out across the bays and OCA. Susceptibility is medium. • Value is high due to the scenic quality and value attributed to them by communities and residents. • Overall sensitivity of the LCA is high.

Seascape/Landscape Character Area (SLCA)	Description
Village/Town Center (LCA) Niantic, East Lyme, CT 	**Location and Extent** The center of Niantic village falls within the Connecticut Onshore APSLVI and is located just north of the Niantic Boardwalk along the Niantic Bay. **Key Characteristics** • Village and town centers are small coastal seaports with clusters of historic buildings focused around clearly defined downtown commercial districts and are of high value. • Town center layout is strongly related to development associated with the harbor. • Moderate to high-density residential and commercial development allowing for low susceptibility. • Overall sensitivity is medium due to the high value, yet low susceptibility. • Vegetation is widespread and generally includes street trees and garden plantings. • Side streets are characterized by well-maintained residential dwellings adjacent to the village center.
Light Industrial (LCA) Niantic Bridge and Amtrack Rail line 	**Location and Extent** This LCA is found at and around the Niantic River Bridge, parts of the Niantic River, and at Millstone Point. The Amtrak commuter rail line extends east to west throughout the Connecticut Onshore APSLVI. **Key Characteristics** The characteristics of the Light Industrial LCA vary somewhat across the Connecticut Onshore APSLVI but typically comprise large-sale rectilinear industrial buildings and commercial properties, allowing for low susceptibility. These areas often occupy waterfront positions and as such form prominent elements in views across the Niantic Bay, Jordan Cove, and Long Island Sound. Value is low due to poor scenic quality, industrial character, and absence of recreational value. Overall, the sensitivity of this LCA is low.

Seascape/Landscape Character Area (SLCA)	Description
Parks/Developed Recreation (LCA) Path from Hole-in-the-Wall Beach to McCook's Beach 	**Location and Extent** Parks and Recreation areas are common throughout the Connecticut Onshore APSLVI and are mostly situated along waterfronts. **Key Characteristics** • Parks generally comprise manicured lawns or grasslands with picnic benches and walking paths linking to beaches. • Parks are often concentrated around the Marine Bays with views out towards the Long Island Sound. • The parks have various attractions including beaches, walking paths, picnic benches, playgrounds, coastal water access, adding a high recreational value, and scenic views to other SLCAs including Ocean Beach, Marine Bays, Forests/Woodlands, and Suburban Residential, making for a high susceptibility. • Overall, this LCA is highly sensitive to change based on its susceptibility and value.
Forests/Woodlands (LCA) Forest/Woodlands adjacent to Millstone Beach 	**Location and Extent** Forests/Woodlands are very common in the Connecticut Onshore APSLVI. Neighborhoods and town centers are buffered by this LCA. This LCA is dispersed along the coastlines as well as more concentrated inland around residential communities. **Key Characteristics** • Topography in this LCA is generally flat or gently undulating. • Landcover is characterized by a mixture of deciduous woodlands and coniferous forest cover. Understory is comprised of mixed shrubs, vines, and saplings. • In areas exposed to coastal winds, trees often take on an irregular/unbalanced form and are stunted. Trees in better shielded inland areas are taller and more regular in form. • Woodland contains the spread of lighting from dwellings, roadways, and industrial areas, during hours of darkness, meaning only glimpsed views of some lights are available. • Seasonal variation associated with deciduous woodland cover. • Recreational uses include walking and bicycling through the woods along local roads and trails. Although this LCA is relatively commonplace, it is of high value where residential properties, trails and cycleways are present, along with the conservation efforts associated with forests due to their naturalness and ecological importance. • Views are restricted to within glades and other openings in the forest canopy and axial views along roadways. While a popular recreational destination, in parts the LCA offers a sense of isolation, which contrasts with the busier and more intensively used areas that surround it (i.e., towns and villages). This offers a low susceptibility rating. • The overall sensitivity is medium. • Forms the background to the coastal SCAs.

Seascape/Landscape Character Area (SLCA)	Description
Ocean Beach (SCA) Crescent Beach 	**Location and Extent** The Ocean Beach SCA is present along much of the coastline surrounding Niantic Bay and Jordan Cove. Where sandy beaches are not present, riprap and storm walls are present. **Key Characteristics** • Ranging from broad expanse of gently sloping beaches, to narrow, steeper sloping sandy beaches. • Dynamic character highly influenced by changeable weather patterns and tidal action. • Smooth to grainy textured sand. • Light to medium tan sand. • Often connected with adjacent park/greenspace/walking path open to the public. • Highly varied public versus private access. • High susceptibility due to the essentially simple horizontal nature, its openness and the limited scope for mitigation that would be consistent with its character. • Highly valued due to the generally good condition, scenic quality and recreational uses associated with this SCA. The overall sensitivity rating is high.

Seascape/Landscape Character Area (SLCA)	Description
Coastal Bluff (SCA) McCook's Point across from Hole in the Wall Beach 	**Location and Extent** Coastal Bluffs are present in the Connecticut Onshore APSLVI. Walking paths are built atop the bluffs from McCook's Beach to Hole in the Wall Beach and at Crescent Park. **Key Characteristics** • McCook's Point and Crescent Park have elevated walking paths set on top of a coastal bluff and within a developed park/recreation area, making for a highly valued SCA. • Views from the bluffs are out across Niantic Bay to Millstone Point and extend into Long Island Sound. • High susceptibility due to their relatively small scale and transitional role along the coastline and essentially open aspect that limits potential for mitigation of the type of development proposed. • Overall sensitivity of the SCA is high.
Salt Pond (LCA) 	**Location and Extent** Salt Ponds are present in the Connecticut Onshore APSLVI in a limited manner. There is one north and one east of the proposed substation location, and one up the Niantic River to the east. **Key Characteristics** • Isolated bodies of water, often bounded by forests/woodlands and situated nearby the coastline to the main water body source. • Views are isolated from this LCA due to the enclosure of forests/woodlands. Susceptibility is generally medium due to this isolation and limited open seaward views. • These salt ponds are often associated with nearby wetlands. • The LCA is highly valued due to its naturalness and scenic quality. • Overall sensitivity of the LCA is high.

Seascape/Landscape Character Area (SLCA)	Description
River Corridor (SCA) Niantic River 	**Location and Extent** This SCA is subject to a minimal extent of potential visibility of the onshore substation facility and forms a navigable watercourse and transportation corridor. The Niantic River is located northwest, and the Jordan River is located northeast of where the BW2 onshore substation facility is proposed. **Key Characteristics** • Broad expanse of essentially simple horizontal form and sheltered open water enclosed by a variable backdrop comprising a low-scale residential and light industrial buildings and vegetation. This makes for a medium level of susceptibility. • Influence of light industrial areas near the Niantic Bridge. • Elevated roads and rail bridges, that increase the visual and noise disturbance within the River Corridor. • Dynamic character highly influenced by changeable weather patterns and tidal action. • Contrasting texture from smoothness of open water and coarser texture of adjoining built forms. • Seasonal and time relate variations in color, arising from different light and weather conditions. Contrast between colors of open water, adjoining urban forms, and forested woodlands. • Night-time character is influenced by reflections of light across the water, including moonlight, light adjoining urban areas, and from boats. • High value due to its visual prominence and importance as an aspect of the townscape. • Overall sensitivity of the SCA is high.

Seascape/Landscape Character Area (SLCA)	Description
Marine Bays (SCA) Niantic Bay 	**Location and Extent** Jordan Cove and Niantic Bay are examples of this SCA and are present within the Connecticut Onshore APSLVI. They are located directly to the west and the east from Millstone Point where the BW2 onshore substation facility is proposed. **Key Characteristics** • Large tidal water bodies of open water bounded by land to the north, west and east and open to the Long Island sound to the south. • Tidal river connections. • Highly variable water conditions range from smooth to choppy and with variable tidal levels. • Dynamic character highly influenced by changeable weather patterns and light qualities. • Used for recreational activities including boating, kayaking, and swimming. • Edged by sandy and rocky beaches with some erosion protection, boardwalks and walking paths, jetties, forested woodlands, and residential homes. • Variable susceptibility. Medium due to the prevalence of industrial and transport infrastructure along the coastlines, and High due to the adjacent Ocean Beach and essentially simple horizontal nature of the adjacent OCA. • High value due to the scenic qualities of this SCA and its recreational uses. • Overall sensitivity of this SCA is high.

X.5.2.4 BW2 Onshore SL Impact Assessment – Waterford, Connecticut

The method for identifying seascape and landscape impacts for the onshore components of the Project are identical to the method for the offshore components as described in **Section X.5.1.2**. As with the offshore SLIA, seascape and landscape impacts resulting from the onshore components of the Project can include:

- Change or complete or partial loss of elements, features, or aesthetic, perceptual, or experiential aspects that contribute to the distinctive character of the seascape/landscape;
- Addition of new elements and/or features that may affect the distinctive character of the seascape/landscape; or
- Change in the overall character of the seascape/landscape resulting from the combined effects of the changes, losses, or additions described above.

Assessing the impact level of seascape/landscape impacts is ultimately a matter of professional judgment. The impact level is a function of both the impact receptor (the SLCA) and the nature of the impact. The key factors are referred to as the sensitivity of the SLCA and the magnitude of the effect. In accordance with the BOEM SLVIA Methodology, each factor and its components are rated on an ordinal scale with three levels, which in some cases use different terms for semantic reasons but are considered equal in importance; in other words, a rating of “high” is considered equivalent in importance to a rating of “large” or “good.” Similarly, a rating of “low” is considered equivalent to a rating of “small” or “poor.” These relationships were previously presented in **Table X.5-3**. In addition to the three levels employed in the BOEM SLVIA Methodology, Beacon Wind has employed a fourth level rating of “Negligible” with respect to size and scale of effect and geographic extent of effect components of impact magnitude when the Project will not be discernible from the SLCA nor alter the SLCA.

X.5.2.4.1 SLCA Receptor Sensitivity

The sensitivity factor of the character area receptor has two components: susceptibility and value. The susceptibility of a seascape/landscape receptor to change is its ability to accommodate the impacts of the Project without substantial change to the basic existing characteristics of the defined character areas within the APSLVI. This applies to the overall character of a particular seascape/landscape area, or an individual element and/or feature, or a particular aesthetic, experiential, and perceptual aspect that contributes to the character of the area. A seascape/landscape receptor are likely to be highly valued when a character area is judged to be distinctive and where scenic quality, wildness or tranquility, and natural or cultural heritage features make a particular contribution to the seascape or landscape. In the evaluation of value, special consideration is given to key characteristics—that is, those components that contribute significantly to the distinctive character of the SCA/LCA.

Table X.5-17 below shows a summary of the value and susceptibility rating of each SLCA and how that determines the overall sensitivity. **Table X.5-4** contains the matrix for combining value and susceptibility components to derive an overall sensitivity rating. **Table X.5-16** provides in-depth character descriptions and rationales for these ratings. Eight out of the 11 SLCAs are highly sensitive due to the nature and setting of these character areas. Many of the SLCAs are of high value within a partially urbanized setting as they provide unique scenery. Two are rated medium, and one is rated low sensitivity.

TABLE X.5-17. SLIA RECEPTOR SENSITIVITY MATRIX – WATERFORD, CONNECTICUT

Character Area	Value Rating	Susceptibility Rating	Sensitivity Rating a/
Suburban Residential	High	Medium	High
Village/Town	High	Low	Medium
Light Industrial	Low	Low	Low
Parks/Developed Recreation	High	High	High
Forests/Woodlands	High	Low	Medium
Ocean Beach	High	High	High
Coastal Bluffs	High	High	High
Salt Pond	High	Medium	High
River Corridor	High	Medium	High
Marine Bays	High	Medium	High
Ocean	High	High	High

Notes:
a/ see **Table X.5-4** above for matrix for combining sensitivity components.

X.5.2.4.2 SLCA Magnitude of Effect

The magnitude factor has three components: the size and scale of the change to existing conditions caused by the project, the geographic extent of the area subject to the project's effects, and the duration and reversibility of impacts. These components are described below, and the final magnitude of impact ratings are displayed in **Table X.5-14**. The overall magnitude ratings are established through BOEM's matrix for combining the three magnitude components described below (BOEM 2021a).

Size and Scale of Change

The degree of change from loss, addition, or alteration of character, features, elements, or aesthetic, experiential, or perceptual aspects of affected SLCAs within the Connecticut Onshore APSLVI is considered small to medium. Four of the 11 SLCAs are rated as having a medium size and scale, while the majority have a small size and scale. The definitions and thresholds used to determine the size and scale of change are the same as the Offshore SLIA Analysis **(Table X.5-6)**. The size and scale of the surrounding elements to these SLCAs already provides a somewhat built-up environment with pockets of highly industrialized waterfront areas.

Geographic Extent

The assessment of impact magnitude also includes consideration of the geographic extent over which the impact will be experienced. For seascape/landscape impacts from the Waterford onshore substation facility, the geographic extent of SLCA impacts relates to the physical alteration of the LCA on which the onshore substation facility will be sited as well as visibility of the onshore substation facility from SLCAs located within the APSLVI. Only the Forests/Woodlands and Light Industrial LCAs will be physically altered by the onshore components of the Project.

Table X.5-18 below shows the total geographic area of each SLCA within the ZTV (4 mi Study Area) and the percent of that SLCA geographic area that falls within the DSM viewsheds (Connecticut Onshore APSLVI) of the Waterford onshore substation facility. **Figure X.5-29** displays the DSM

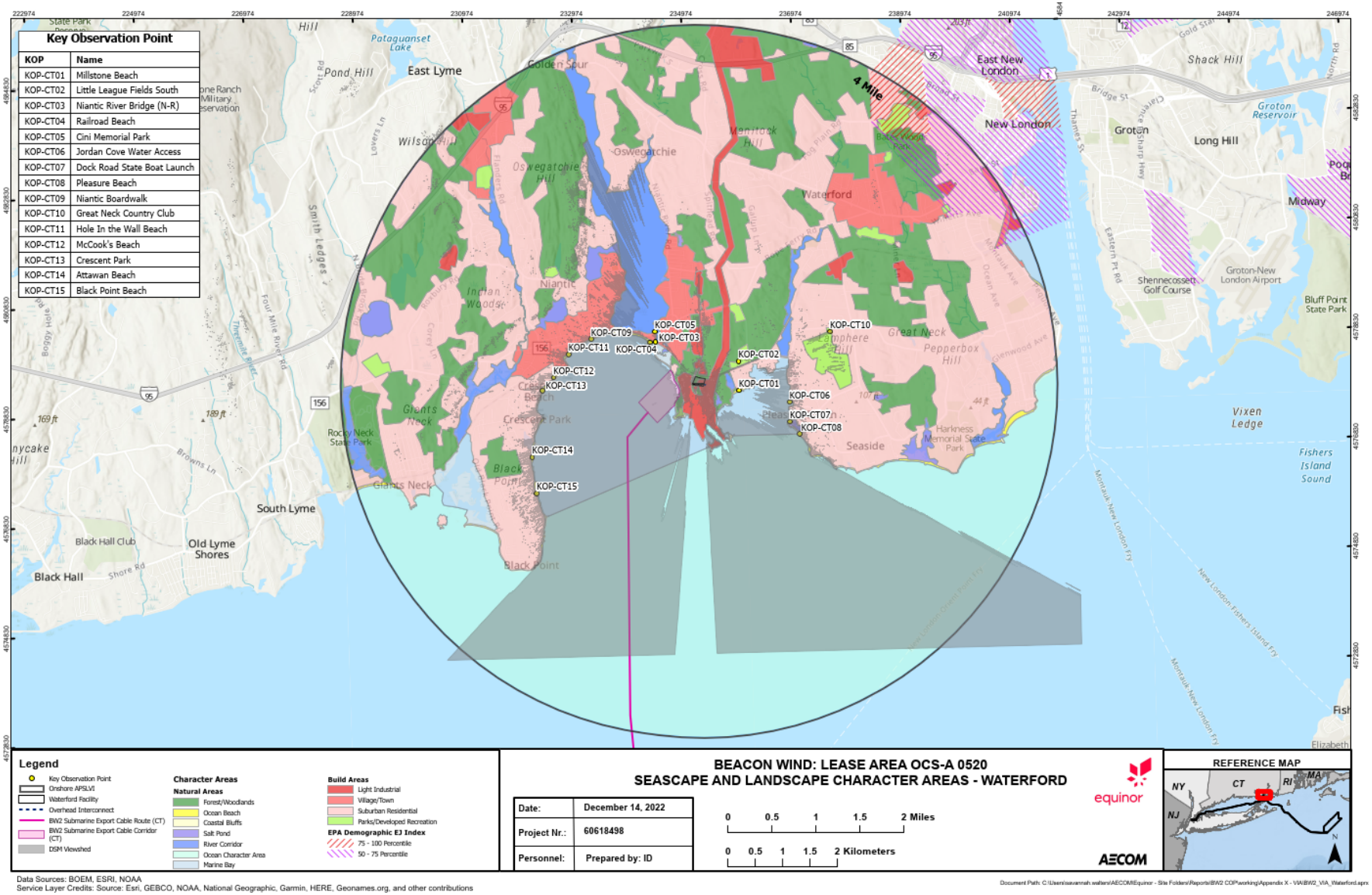
viewshed overlaying the SLCAs. Fifty-nine percent of the OCA occurs within the Connecticut Onshore APSLVI. This represents the largest portion of character area coverage within the DSM viewshed. River Corridor has the second most coverage, followed by Light Industrial, and Suburban Residential.

Table X.5-12 was used in conjunction with **Table X.5-6** (same criteria from the Offshore SLVIA) to determine the overall geographic extent ratings for each SLCA (see **Table X.5-14**). Overall, six SLCAs have a small geographic extent rating, three have a medium rating, and two have a large rating.

TABLE X.5-18. GEOGRAPHIC EXTENT OF SLCA IMPACTS WITHIN THE WATERFORD, CONNECTICUT ONSHORE APSLVI

Character Area	Total Area	Total Area within Viewshed	Percent (%) within Viewshed
Suburban Residential	9,846 ac (3,984 ha)	65 ac (26 ha)	1%
Village/Town	1,422 ac (576 ha)	41 ac (16 ha)	3%
Light Industrial	695 ac (281 ha)	67 ac (27 ha)	10%
Parks/Developed Recreation	302 ac (122 ha)	8 ac (3 ha)	3%
Forests/Woodlands	5,944 ac (2,406 ha)	12 ac (5 ha)	0.2%
Ocean Beach	115 ac (47 ha)	36 ac (15 ha)	31%
Coastal Bluffs	22 ac (9 ha)	5 ac (2 ha)	23%
Salt Pond	182 ac (74 ha)	10 ac (4 ha)	5%
River Corridor	1,155 ac (467 ha)	155 ac (63 ha)	13%
Marine Bays	449 ac (182 ha)	60 ac (24 ha)	13%
Ocean	13,158 ac (5,325 ha)	7,800 ac (3,157 ha)	59%

FIGURE X.5-29. CONNECTICUT ONSHORE APSLVI WITH SLCAS



Duration and Reversibility of Impacts

The duration of onshore SLCA impacts at the Waterford onshore substation facility location is considered long-term given that the Project is assumed to have a Project lifetime of approximately 35 years for the purposes of this SLVIA although some installations and Project components may remain fit for continued service after such time. There is not expected to be any SLCA residual impacts remaining after decommissioning.

Reversibility has been determined to be fully reversible. The assessment of duration and reversibility impacts considered in combination has been determined to be fair given the long-term duration but full reversibility.

TABLE X.5-19 SLIA MAGNITUDE OF EFFECT MATRIX – WATERFORD, CONNECTICUT

Character Area	Size and Scale Rating	Geographic Extent Rating	Duration/ Reversibility Rating	Magnitude Rating
Suburban Residential	Small	Small	Fair	Small
Village/Town	Small	Small	Fair	Small
Light Industrial	Small	Small	Fair	Small
Parks/Developed Recreation	Small	Small	Fair	Small
Forests/Woodlands	Small	Small	Fair	Small
Ocean Beach	Small	Large	Fair	Small
Coastal Bluffs	Small	Medium	Fair	Small
Salt Pond	Medium	Small	Fair	Medium
River Corridor	Medium	Medium	Fair	Medium
Marine Bay	Medium	Medium	Fair	Medium
Ocean	Medium	Large	Fair	Medium

X.5.2.4.3 SLCA Impact Level (Combining Sensitivity and Magnitude)

The BOEM SLVIA Methodology includes a matrix for combining receptor sensitivity and magnitude of impact ratings to derive an overall SLCA impact rating, which is "...recommended but [is] subject to change in consideration of individual project circumstances" and is scored on a scale of *minor*, *moderate*, and *major* (BOEM 2021a). In addition to the three level ratings employed in the BOEM SLVIA Methodology, Beacon Wind has employed a fourth level rating of *negligible* when it has been determined that the Project will not be discernible from the SLCA nor alter the SLCA in a perceptible way. The overall impact level ratings for the affected SLCAs and the rationale behind those ratings are presented in **Table X.5-20** below. Beacon Wind has also diverted from the BOEM SLVIA Methodology and exercised professional judgement in the presentation of the overall SLCA impacts as necessary because it is believed that the size and scale factors should carry a heavier weight rather than equalizing their counterparts into a simplified matrix.

TABLE X.5-20 SLIA OVERALL IMPACT – WATERFORD, CONNECTICUT

Character Area	Overall Impact Level Range	Overall Impact Rationale
Suburban Residential	Negligible	Despite its high sensitivity, the overall magnitude of impacts on this LCA would be Negligible due to the variability and often highly constrained visibility of the Project. Where visible, the Project would be a barely discernible new feature in the landscape. It would be unlikely to compete with the key characteristic seascape/landscape elements to any notable extent.
Village/Town	Negligible	Despite the medium sensitivity of this LCA, views from Village/Town centers are variability and often highly constrained due linear streets lines with built structures. Where visible, the Project would be a barely discernible new feature in the landscape. It would be unlikely to compete with the key characteristic seascape/landscape elements to any notable extent.
Light Industrial	Negligible to Minor	Due to the low sensitivity and small magnitude rating of the LCA, overall impacts range from Negligible to Minor. Views from certain areas within this LCA will be highly constrained. Where visible, and due to the substation being partially within this LCA, the substation would be a barely discernible new feature in the landscape and consistent with the key characteristic elements of this LCA.
Parks/Developed Recreation	Negligible to Moderate	The overall impact to this LCA is variable due to the variability of visibility from this LCA and high sensitivity. Where visible, the proposed substation would add to the existing industrialized skyline in the background of views from this LCA but would mostly not be anomalous. Moderate to limited impacts on the existing character of this LCA may occur.
Forests/Woodlands	Negligible to Minor	Given the medium sensitivity and the restricted nature of visibility from this LCA, impacts on the character of this LCA would range from Negligible to Minor. Certain views from the LCA would be completely restricted. The substation would be partially located and adjacent to this LCA, causing direct minor impacts to the LCA. However, the characteristic elements of the LCA are already influenced by neighbouring industrialized areas.
Ocean Beach	Negligible to Moderate	While this SCA has a high sensitivity, the variability of views from this SCA due to distance and primary view indicates a range from Negligible to Moderate impacts. The greatest impacts would occur at locations such as Attawan Beach and McCook's Beach where there are readily open views across the bay, however the substation would constitute a new industrial building in the backdrop to the SCA. Views along the coastline from Ocean

Character Area	Overall Impact Level Range	Overall Impact Rationale
		Beaches are currently composed of transportation infrastructure, forest edges, residential structures, and industrial powerplants.
Coastal Bluffs	Negligible	Despite the high sensitivity of this SCA, the distance and variability of views from the SCA means that it would be unlikely to compete or distract from the key characteristic seascape/landscape character in this SCA.
Salt Pond	Negligible to Minor	Despite the high sensitivity of this LCA, it is often enclosed by forest/woodlands or residential properties, limiting visibility outward. Many of the Salt Ponds in the study area will not have any visibility of the substation due to distance. Two small ponds are located east/southeast of the proposed substation location, where depending on the season, may have some visibility, however due to the current industrial environment nearby, the substation would be unlikely to compete with the key characteristics at this LCA.
River Corridor	Negligible to Moderate	This SCA is highly sensitive due to the value placed on from the community. However, views along the River Corridor are highly variable and often a far distance from the proposed substation location, making for a potentially Negligible to Moderate overall impact. The substation may add to, but is unlikely to complete with, the current semi-urbanized edges of the riverbank.
Marine Bay	Negligible to Moderate	While this SCA has a high sensitivity, the variability of views from this SCA due to distance and primary view indicates a range from Negligible to Moderate impacts. The greatest impacts would occur at locations just off the coast from the substation site, however, primary views from this SCA are out towards the Long Island Sound. Here, the additions to the existing industrial context would not diminish the key characteristics of this SCA. In some areas of this LCA, the substation would not be visible due to land blockage or would be very small and barely discernible in the pre-existing industrial context.
Ocean	Negligible to Moderate	While the substation would be seen from a larger proportion of the highly sensitive OCA, its prominence would vary considerably according to distance and the extent of view shadow that occurs along the coast. Moreover, where the project is seen, it would be seen against a backdrop of similar industrial forms and would not, therefore, represent a wholly new or anomalous feature, but would be noticeable to the casual observer.

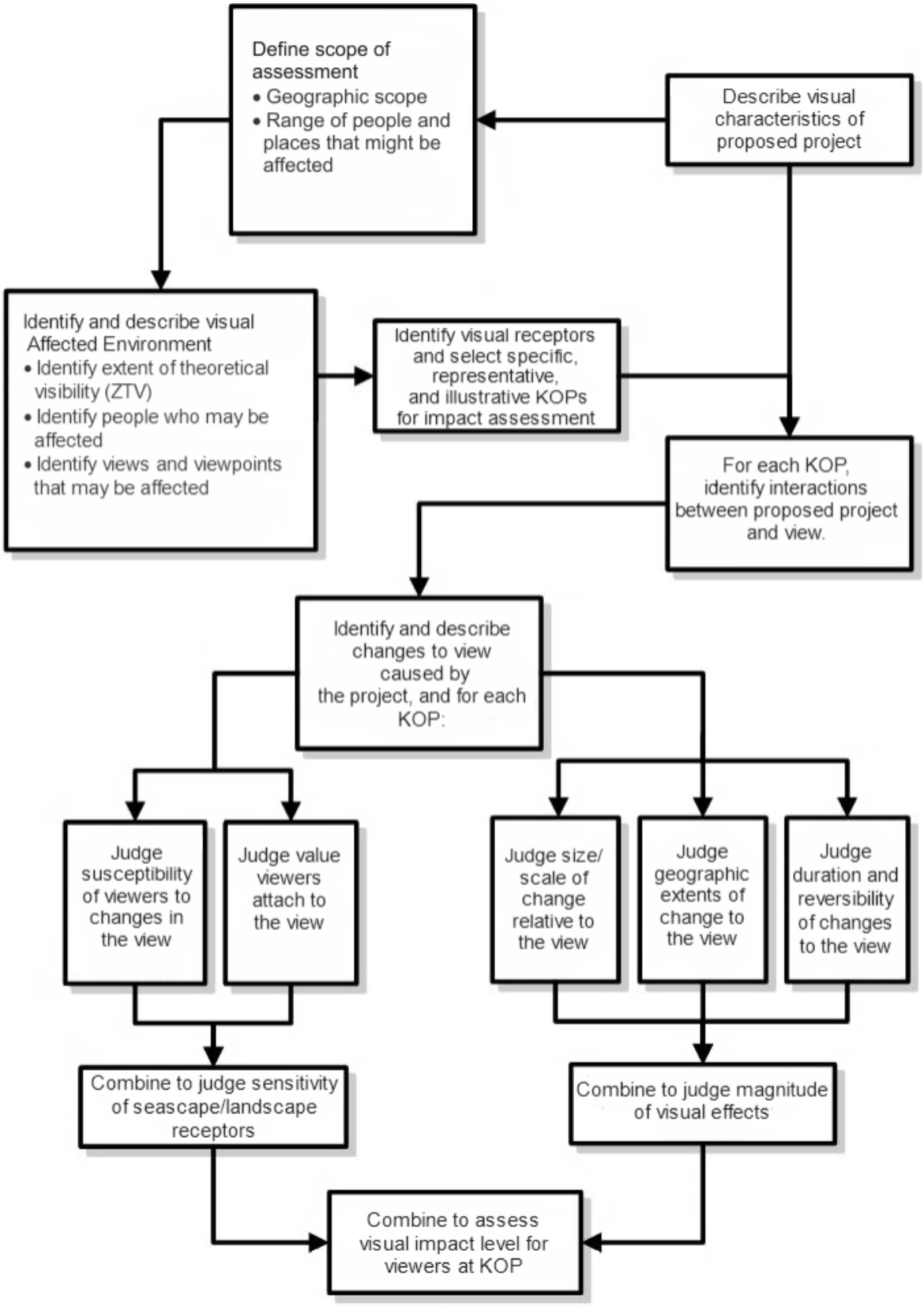
X.6 VIA

The VIA assesses the impacts of adding the Project to views from selected viewpoints (referred to as key observation points or KOPs). The VIA assesses how the change to the view itself caused by the addition of the Project components, such as seeing wind turbines instead of an open ocean horizon, affects people who are likely to be at the viewpoint. The change to the view as a result of adding the Project may affect viewers' experience of that particular view. How the addition of the Project to the view affects the viewers' experiences and their responses depends in part on who they are, what they are doing when viewing the facility, and how much they value the view. The experience of a particular view is dependent on the viewers, and in the VIA, the impact receptors are people, rather than the seascape or landscape itself.

The VIA includes a description of the affected environment, including identifying important views and viewpoints that would likely have visibility of the project, and information about the impact receptors, that is, the people who would likely experience the views. The VIA uses verbal descriptions and visual simulations (realistic representations of what the operating project would look like from a given viewpoint) to characterize the change to the valued views from the relevant viewpoints as well as more general views of the project, and this information is combined with information about the potentially affected viewers to determine the likely effects on people's enjoyment of the views and the visual experience of their surroundings.

The VIA process is summarized in **Figure X.6-1** below.

FIGURE X.6-1. VIA PROCESS



X.6.1 Offshore VIA

X.6.1.1 Offshore Project Area Description

The Offshore APSLVI covers the open waters of the Atlantic Ocean, Nantucket Sound, Vineyard Sound, and Rhode Island Sound; the islands of Martha's Vineyard, Nantucket, and the Elizabeth Islands; and a very limited portion of the southern shores of upper and mid-Cape Cod. Martha's Vineyard is the largest of the islands, covering an area of approximately 61,018 ac (24,693 ha). Nantucket comprises four islands: Nantucket, the largest of the group, has an area of approximately 31,213 ac (12,631 ha). Three smaller islands (Esther Island, Tuckernuck Island, and Muskeget Island) extend the overall landmass west into the Nantucket Sound.

Both the south shore of Cape Cod and the islands within the APSLVI are highly valued for their scenic and historic attributes, have long been popular destinations for tourists, as well as communities for year-round and seasonal residents. The visual and other sensory linkages of land and water is a draw, along with a high degree of "naturalness" and compatible historic and more modern well-designed buildings and townscapes. Note that in the case of long-distance views, theoretical visibility typically exceeds actual visibility. In seascapes, atmospheric conditions reduce the practical viewing limit, sometimes significantly.

X.6.1.1.1 Martha's Vineyard

The Offshore APSLVI indicates that theoretical visibility of the Project would extend across a portion of the island of Martha's Vineyard, ranging from the southern coastal zone and extending across portions of the interior of the island. GIS calculations utilizing the Offshore APSLVI indicate that an approximately 12,019 ac (4,864 ha) portion of the 61,018 ac (24,693 ha) Martha's Vineyard land mass, or approximately 20 percent of the island, would have some visibility of the wind turbine TOB. With regard to visibility of the wind turbine hubs, approximately 8,870 ac (3,590 ha) of the island, or approximately 15 percent, would have some visibility of the hubs. Field reconnaissance suggests that the Project would not be visible from inland locations, such as the Squibnocket Marshes, Menemsha Pond, and Katama Bay Marshes, due to intervening sand dunes between the ocean edge and the tidal marshes and ponds.

The northern edge of the viewshed is located along the western ridge between Peaked Hill, Indian Hill, Whiting Hill, and Prospect Hill. It extends to the western shoreline of the island and includes some of the most visited destination points on Martha's Vineyard, namely Aquinnah Cliffs Overlook (KOP-MV01), Edwin D. Vanderhoop Homestead (Aquinnah Cultural Center) (KOP-MV02) and Gay Head Lighthouse (KOP-MV12). However, topography, forest vegetation, and residential structures contribute to the screening of the Project from the majority of these elevated areas. Similarly, a viewshadow (i.e., locations where views of the Project would be screened by intervening topography) would occur to the north of the island, where the topography slopes to the northern coast and views of the Project would be screened by the landform. The only exceptions to this would occur around the Oak Bluffs headland and from the island of Chappaquiddick at the east of Martha's Vineyard, where views would be available from the beaches and the scrub shrub areas behind the dunes on the southern edge of the island.

X.6.1.1.2 Nantucket

The Offshore APSLV indicates that theoretical visibility on Nantucket is geographically extensive, extending along elevated south-facing slopes of the prominent low ridge that runs east-west across

the island and along its southern coastline. GIS calculations utilizing the Offshore APSLVI indicate that an approximately 10,675 ac (4,320 ha) portion of the 31,213 ac (12,631 ha). Nantucket land mass, or approximately 34 percent of the island, would have some visibility of the wind turbine top of blade. Regarding visibility of the wind turbine hubs, approximately 7,308 ac (2,957 ha) of the island, or approximately 23 percent of the island, would have some visibility of the hubs.

To the north of this ridgeline, there is a viewshadow at Gibbs Swamp due to the screening effect of the ridge. A large extent of the northern part of the island between Nantucket and the east coast would not have visibility of the Project. However, views would be available from the peninsula along the north of Nantucket Harbor, and intermittently between Polpis and Wauwinet. Views of the Project from Esther, Tuckernuck, and Muskeget Islands would be concentrated in locations along their southern extents, where the aspect towards the Project is most open and uninterrupted.

X.6.1.1.3 Cape Cod

Figure X.4-6 indicates that theoretical visibility of the Project would extend across a portion of the southwestern coastal zone of Cape Cod.

GIS calculations utilizing the Offshore APSLVI indicate that an approximately 2,406 ac (974 ha) portion of Cape Cod land mass within the 46 mi (74 km) Study Area would have some visibility of the wind turbine TOB. A limited area of the Cape Cod land mass within the APSLVI within the Town of Mashpee (128 ac [52 ha]) would have theoretical visibility of the wind turbine hubs.

Views of the turbine TOBs would be concentrated along the coastline between the towns of Falmouth and Barnstable. Inland, views of the wind turbines would be obscured from development and/or vegetation.

X.6.1.1.4 Elizabeth Islands

Figure X.4-7 indicates that theoretical visibility of the Project would extend across the two southerly islands of the Elizabeth Islands: Cuttyhunk and Nashawena.

GIS calculations utilizing the Offshore APSLVI indicate that an approximately 1,459 ac (590 ha) area of the Elizabeth Islands land mass would have some visibility of the wind turbine TOB. No part of the Elizabeth Islands will have visibility of the wind turbine hubs.

X.6.1.2 Offshore Visual Impact Receptors/Viewers

Receptors and viewers are the people who interface with the Project and experience its effects. Understanding the characteristics of viewers is important because the project's effects on the viewer experience and the viewer response to these effects contribute to the visual impact.

Consideration of viewer groups were considered within the established APSLVI. These viewer groups were identified based on a review of local planning documents including the *Nantucket Master Plan* (Nantucket Planning Board 2009) and *Wind Energy Plan for Dukes County* (Martha's Vineyard Commission 2012), input obtained from stakeholder outreach activities, VIAs prepared for other offshore wind projects in the Massachusetts Wind Energy Area, and the activities observed during field reconnaissance.

The following visual impact receptor viewer groups were identified:

- Residential receptors;
- Tourists and Recreational receptors;
- Water-based receptors; and
- Transportation-based receptors.

There is an expectation that most receptors will be sensitive to visual changes to seascape views on Nantucket, Martha's Vineyard, Cape Cod, and Cuttyhunk, Esther, Tuckernuck, and Muskeget Islands, due to the value placed on these areas by the receptors, and the receptors susceptibility to change at each KOP identified. This expectation is based on public input received on prior offshore wind projects in the area, as well as direct discussions with key stakeholders.

Martha's Vineyard, Nantucket, Cape Cod, and the Elizabeth Islands are experienced by a wide range of people including permanent residents who live and work on the Cape and islands year-round as well as seasonal residents who live there on a largely seasonal basis. Martha's Vineyard, Nantucket, Cape Cod, and Cuttyhunk offer a wide range of recreational activities and destinations for both recreation-seeking residents and tourists. The Cape and islands are also experienced by people partaking in water-based activities including commercial mariners, ferry passengers and recreational water users. A description of the respective viewer groups is presented in the sections below.

X.6.1.2.1 Residential Receptors

The year-round population on Martha's Vineyard is approximately 17,250 residents, although this can increase to more than 100,000 over the summer months. Nantucket has a year-round population of roughly 11,400, which often increases to more than 50,000 during the summer. The island of Cuttyhunk (Town of Gosnold) has a year-round population of approximately 75 residents, which grows to approximately 400 in the summer months. Cape Cod has a year-round population of approximately 229,000 residents, which can grow to more than 500,000 during the summer.[8]

For the purposes of this assessment, permanent and year-round residents have been considered in the assessment of impacts on residential receptors. Seasonal residents have been considered in the assessment of the impacts on tourists and recreational receptors, the baseline for which is described below. Residents (permanent or year-round) are considered to have a high sensitivity. Their attention or interest is focused on their surroundings to which they place a high value, and views of the surrounding area contribute to the landscape setting which is highly susceptible to change.

X.6.1.2.2 Tourist and Recreational Receptors

Martha's Vineyard, Nantucket, Cape Cod, and Cuttyhunk offer a wide range of recreational activities and destinations for both residents and tourists. This section focuses on those recreational receptors which are related to the enjoyment of the landscape and views such as: visitors to vantage points and parks; users of walking and biking trails; people partaking in water-based activities (boating, sailing, kayaking etc.); and beach goers. For the purposes of this assessment, recreational receptors are considered to be of high sensitivity to the type of development proposed, given that the value placed

[8] https://www.census.gov/

on the seascape, landscape, and views form a key part of the experience for people who are engaging in outdoor recreational activities and susceptibility to change is high.

Martha's Vineyard, Nantucket, Cape Cod and Cuttyhunk are comprised of a mixture of public and privately owned beaches. Of the 19 beaches present on Martha's Vineyard, 14 are public, four are for town residents only, and one is private. Seven of these beaches are located on the southern coast and therefore views from these beaches are focused to the south. There are five lighthouses on Martha's Vineyard. One of these, the Gay Head Lighthouse, is located on the south coast and is a notable landmark feature. It is listed on the National Register of Historic Places and is a visitor destination open to the public.

Nantucket has ten designated public beaches. Of these, four are located along the southern coast with views south. Both Martha's Vineyard and Nantucket have walking and biking paths accessible to the public along the southern coasts of the islands. Of the three lighthouses on Nantucket, none are located on the south side of the island.

The south coast of both islands is generally accessible to the public through beach access agreements with the local conservancy organizations. Views across the ocean and the coastline have high scenic value and are appreciated by a wide range of people. Many recreational pursuits within the island communities are focused on enjoying the outdoors and views of the sea. As a practical reality, not all of these can be assessed individually. Therefore, a representative selection of the publicly accessible receptors across Cape Cod and the islands are shown in **Figure X.5-10, Figure X.5-11, Figure X.5-12,** and **Figure X.5-13** and are described in **Table X.5-1** and have been assessed as part of the impact assessment. Within the four towns along the southern coast of Cape Cod, there are approximately 10 public beaches located along the Nantucket and Vineyard Sounds. There are numerous conservation properties with hiking trails, including South Cape Beach State Park and the Mashpee National Wildlife Refuge. These properties provide miles of hiking, birdwatching and other outdoor recreation facilities.

There are three beaches on Cuttyhunk: Churches Beach, Barges Beach, and Kettle Cove Beach. The island is a destination for hiking, exploring the old WWII bunkers, and boating (see **Table X.5-1**).

X.6.1.2.3 Water-Based Receptors

The southern coastline of Cape Cod is very popular for boating, sailing, kayaking, swimming, and fishing. The two ferry terminals between Cape Cod and the islands of Martha's Vineyard and Nantucket are located in Falmouth and Hyannis. Many private docks are located within the inlets, salt ponds and waterways along the southwestern coastline of the Cape.

As Martha's Vineyard and Nantucket are islands, water-based recreation is popular with both residents and tourists. Activities include boating, sailing, surfing, kayaking, swimming, fishing, and whale watching. These activities occur along each coastline and within inland water bodies. The waters of the southern coast of Martha's Vineyard and Nantucket have strong currents and often heavy surf, which are popular with surfers and body boarders. To the north of Martha's Vineyard and Nantucket, open waters are calmer while ponds and salt marshes located inland provide more sheltered conditions for kayaking and stand-up paddle boarding. At Martha's Vineyard, ocean kayaking is popular around the Aquinnah Cliffs, and nighttime paddling is promoted at the phosphorescent Menemsha Pond. Excursions to Chappaquiddick Island are also popular, leaving from Edgartown and paddling across the harbor.

Cuttyhunk, while less populated, is also popular for boating, sailing, kayaking, swimming, and fishing.

The water-based receptors are most numerous during the warmer summer months but remain present in smaller numbers and frequencies during the colder months. Depending on the activity of the water-based receptor, their sensitivity may range, but in general is likely to be high due to the high value placed on the setting and due to the openness of the seascape out towards the project, their susceptibility to changes in the environment is high.

X.6.1.2.4 Transportation-Based Receptors

Two groups of people generally use the road network:

- General road users, travelling for every day uses (i.e., commuting to work and running errands); and
- Tourists who use the road network to access tourist destinations and to explore the island.

The sensitivity attributed to the two groups of road users is different and varies within each group. For general road users, their susceptibility to change may vary from low to high depending on the frequency of their road usage along with the value they place on the road experience. Some everyday travelers may feel more attached to the sense of place and susceptible to the changes in their everyday commutes, while others may not feel affected by changes as their expectations are less to do with appreciation of landscape and scenic quality. Therefore, frequent road users' sensitivity to the type of development proposed ranges from low to high. This is because their expectations are less to do with appreciation of landscape and scenic quality. Similarly, tourist road users are considered to have a range of sensitivity. Typically, their expectations relate to appreciation of the character of the landscape and the scenic quality of routes. Travelling to and from destinations forms a valued part of their experience. However, their susceptibility may be lower as they may be a one-time traveler or occasional tourist who will not face these effects day to day. Therefore, the overall sensitivity for tourist road users is likely to vary from medium to high.

X.6.1.2.5 Historical Importance

Section 106 of the NHPA of 1966 (54 U.S.C.S. 300308) defines historic properties as "any prehistoric or historic district, site, building, structure, or object included on, or eligible for inclusion on, the National Register, including artifacts, records, and material remains relating to the district, site, building, structure, or object." Historically-valued properties, particularly those that are listed in or eligible for listing in the National Register of Historic Places (NRHP) were identified in COP **Appendix W Historic Resources Visual Effects Assessment** (HRVEA) and researched in order to understand the value that these properties hold and the role they play in defining an area.

The HRVEA identified 24 historic properties within the Offshore Preliminary Area of Potential Effect (PAPE) with potential views of the offshore Project components. These historic properties include individual properties, historic districts of varying sizes, and three Traditional Cultural Properties (TCPs). For some of these properties, the maritime setting with unobstructed views to the horizon forms a key character-defining aspect of the property's historic significance. Light stations, such as Gay Head Lighthouse and Sankaty Head Light are significant as historic maritime navigational aids, characterized by their expansive views both of the ocean and from the ocean. The Nantucket Historic District, which includes the entirety of the island of Nantucket and its two smaller islands, Muskeget and Tuckernuck, derives its significance from being a historic whaling center and more recently, a

tourism destination centered around its maritime setting. On the mainland, three historic districts derive significance from their historic association with maritime industries, and/or their history of summer resort development based upon their oceanfront setting.

The historic properties in the HRVEA Offshore PAPE include three TCPs: the Chappaquiddick Island TCP, the Nantucket Sound TCP, and the Vineyard Sound and Moshup's Bridge TCP. These three TCPs cover large expanses of land and/or water and derive their significance from their setting, feeling, and association with Wampanoag religious and cultural beliefs, traditions, and folklore centered on the natural landforms and water bodies.

Given that effects from Project components are anticipated to be visual, the historic properties most likely to be affected by the Project are those where the maritime setting or historic association with maritime activities are a key aspect of the property's historic significance. As such, the assessment of the Project's effects on historic properties in the HRVEA focused on how the Project affects the significance of a property's historic setting or its association with maritime activities.

Among the 24 historic properties evaluated in the HRVEA Offshore PAPE, 11 are significant for their maritime setting and/or their association with maritime activities. Of these 15, field survey ascertained that all had direct views of the Project's proposed offshore components. Of these historic properties, six would be subject to adverse effects that may alter their characteristics in a manner that diminishes their integrity of setting or association. The full analysis can be found in **Appendix W HRVEA**.

X.6.1.3 Selection of Offshore KOPs

The Offshore APSLVI indicates that views of the Project are theoretically available from numerous locations across Martha's Vineyard, Nantucket, and Tuckernuck Islands and from a limited number of locations on the south shore of Cape Cod and the Elizabeth Islands. To understand the nature of these views and the likely impact of the Project, potential KOPs were identified and evaluated.

Beacon Wind identified potential KOPs within the APSLVI via a review of local planning documents including the *Nantucket Master Plan* (Nantucket Planning Board 2009) and *Wind Energy Plan for Dukes County* (Martha's Vineyard Commission 2012), a review of prior VIA reports prepared for OSW projects in the MA/RI WEA that shared a common viewshed, and input obtained from stakeholder outreach activities. Stakeholder outreach included a meeting held in September 2020 with the community of Nantucket[9] attended by the Town of Nantucket Energy Office, the Madaket Residents Association and the AECOM/Ramboll SLVIA team. A preliminary list of potential KOPs was reviewed at this meeting. These activities were used as a starting point to identify places of visual significance or importance to viewer groups and receptors within the APSLVI.

The results of the viewshed analysis, as represented graphically in the APSLVI, were verified via field reconnaissance, and refined to eliminate (where warranted) viewpoints that do not currently have visibility of the project area and to add viewpoints where imperfections in the viewshed analysis incorrectly resulted in a finding that the project or activity would not be visible. The AECOM/Ramboll SLVIA team completed the initial field review of Martha's Vineyard and Nantucket KOPs in October 2020, with follow-up visits from the AECOM team in June 2021 and March 2022 to complete the field

[9] Key stakeholders within the community of Martha's Vineyard have been notified regarding the Project but have not engaged the visual impact assessment project team yet.

documentations on Cape Cod, Cuttyhunk, and Martha's Vineyard. The following actions were completed for each potential KOP during the field reconnaissance:

- Detailed observations were made and notes collected regarding the KOP required to support completion of visual impact analysis including the SLCA context; viewer groups and numbers; and the nature and composition of the view;
- Secured measured, geo-referenced photographs were collected from the KOPs with potential visibility of the project area including relevant data associated with the photograph including the time of day, GPS coordinates, temperature, percent humidity, wind direction and speed, weather condition, sun angle and sun elevation.

A total of 64 potential offshore KOPs were identified for further evaluation. Of those, 41 were determined to have at least some visibility of the Project, while 23 are not expected to have visibility due to being screened by topography, land cover, or building structures. No simulations were produced for those potential KOPs for which it was determined that visibility of the Project was not expected. The KOPs selected for simulations and impact analysis are representative of 13 SLCAs. The SLCA with no direct representation in the simulations is the Ocean OCA. However, seven KOPs located within the Ocean Beach SCA are considered representative of views from the Ocean OCA. These seven Ocean Beach SCA KOPs are found on Nantucket, Martha's Vineyard, and Cape Cod. An infinite number of views are possible from the OCA. The assumption is that any open ocean location on the south sides of Martha's Vineyard and Nantucket will have uninterrupted visibility of the Project.

Ocean Beaches are represented by 29 KOPs, with only three screened from view: Philbin Beach on the west side of Martha's Vineyard; Siasconsset Beach on the east side of Nantucket; and Eel Point Beach on the northwest of Nantucket. Seven KOPs are from the Village/Town Center LCA and two are from the Light Industrial LCA, and these KOPs are visually screened by landform from the Project.

Seven of the 11 KOPs located within the Low Density Rural Settlement LCA are fully screened from view. Two of the six KOPs in the Forest/Woodland LCA are screened. Coastal Scrub KOPs are more open to a view. Six of 12 KOPs in Coastal Scrub LCA are screened, and most are located on Nantucket. Two of the three KOPs in the Coastal Dune character area are fully screened due to landform, or dunes and residential structures nearby.

The KOPs evaluated are summarized in **Attachment X-1** with the highlighted KOPs representing the subset of KOPs that have been simulated and evaluated in the impact assessment. **Attachment X-1** contains relevant information for the KOPs evaluated including the municipality in which it is located, the visual resource type, SLCAs in which the KOP is located, predominant viewer type and viewer group at the KOP, distance to the nearest wind turbine, if the KOP is located within the modeled viewshed/APSLVI, and an evaluation of the visibility of the project area from the KOP based on the findings of field reconnaissance. The KOPs are mapped in **Figure X.6-2**, **Figure X.6-3**, **Figure X.6-4**, and **Figure X.6-5**.

A subset of 23 of the 64 potential offshore KOPs were selected for visual simulations and full analysis in the impact assessment that follows. The final KOPs selected for visual simulations and full analysis were selected based on the findings of the field reconnaissance and were selected to represent the experience of a range of viewer groups, visual resource types, and locations within the APSLVI.

KOP selection considered the viewers' journey to and experience at the destination itself given that how viewers and receptors travel to a location may set the expectation for the experience they may have at a specific location. As discussed in **Section X.6.1.2**, the viewer's sensitivity varies depending on the value they place on views and susceptibility to change at particular views. The majority of the KOPs evaluated are in highly desirable locations in which the viewers susceptibility to change and the value they attach to views are considered high.

The selected KOPs include known or recognized locations where the view is valued including designated historic properties; National Natural Landmarks; public recreation areas; public beaches; and scenic roads, overlooks and vistas. The identified KOPs also include those which represent the general nature of views from a larger area that may lack defining viewpoints including town centers, residential communities, and estates. These 23 selected KOPs were used to assess potential change to key views that could result from the Project.

FIGURE X.6-2. MARTHA'S VINEYARD KOPS

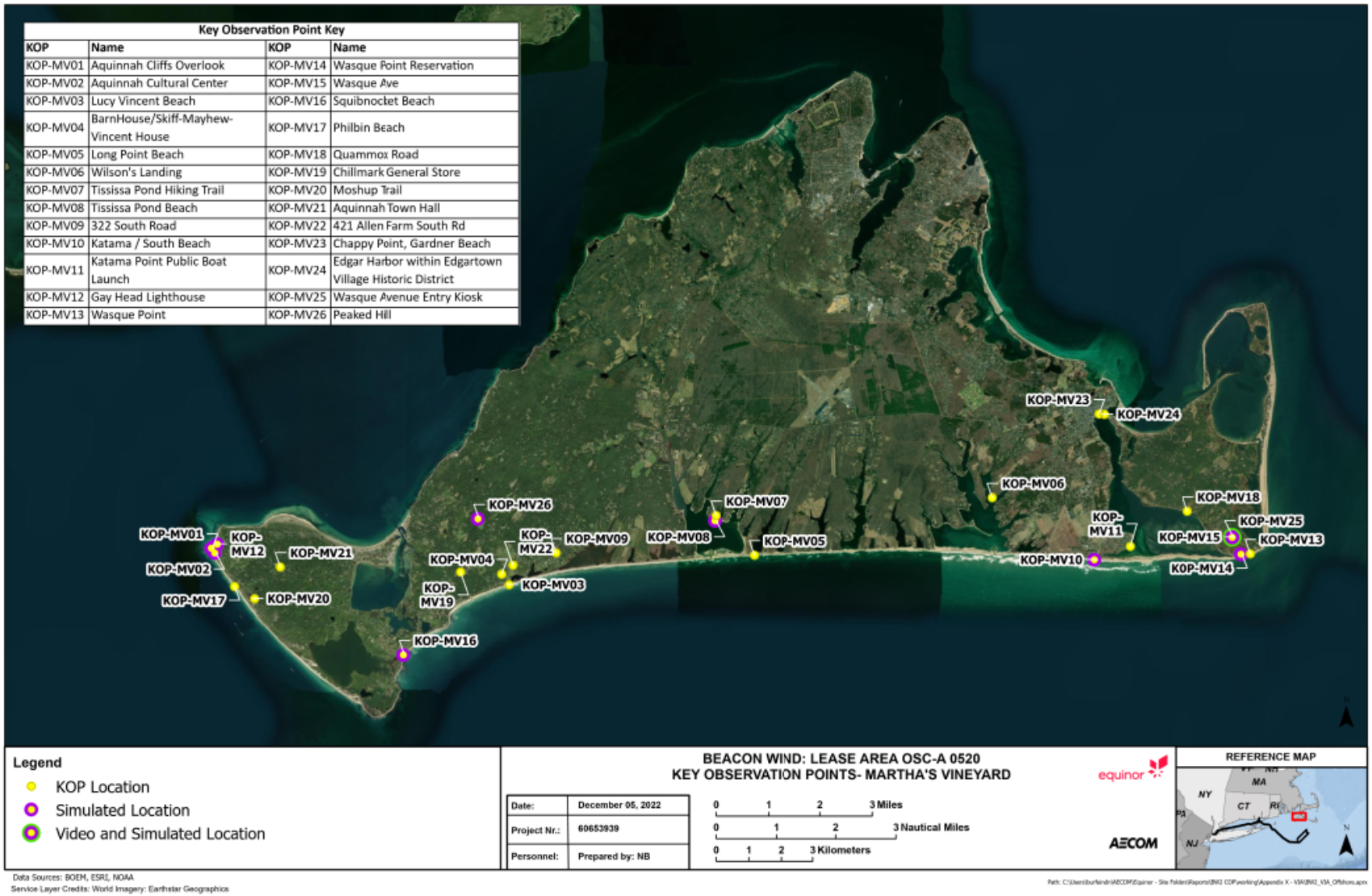


FIGURE X.6-3. NANTUCKET KOPS

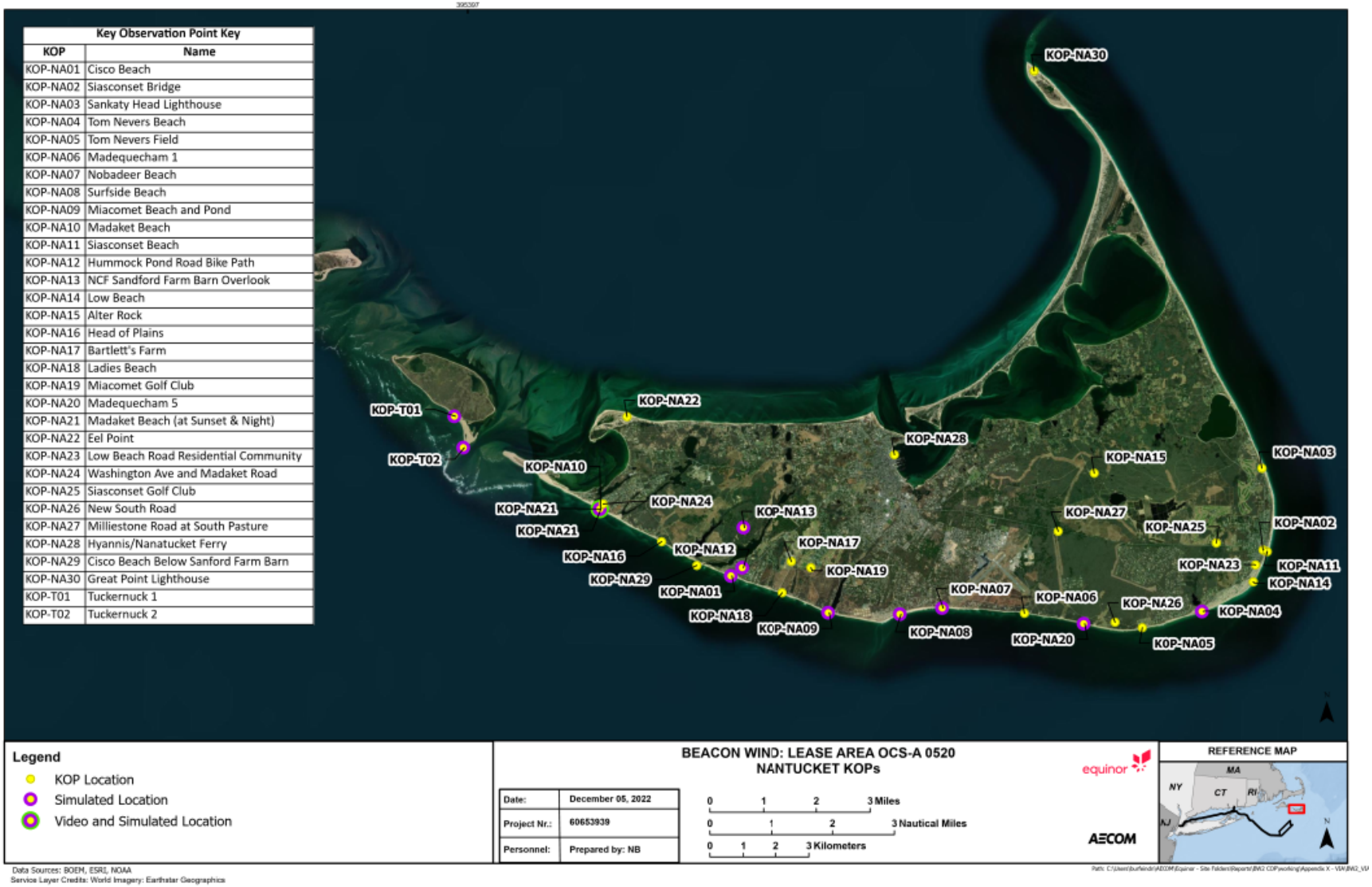


FIGURE X.6-4. CAPE COD KOPS

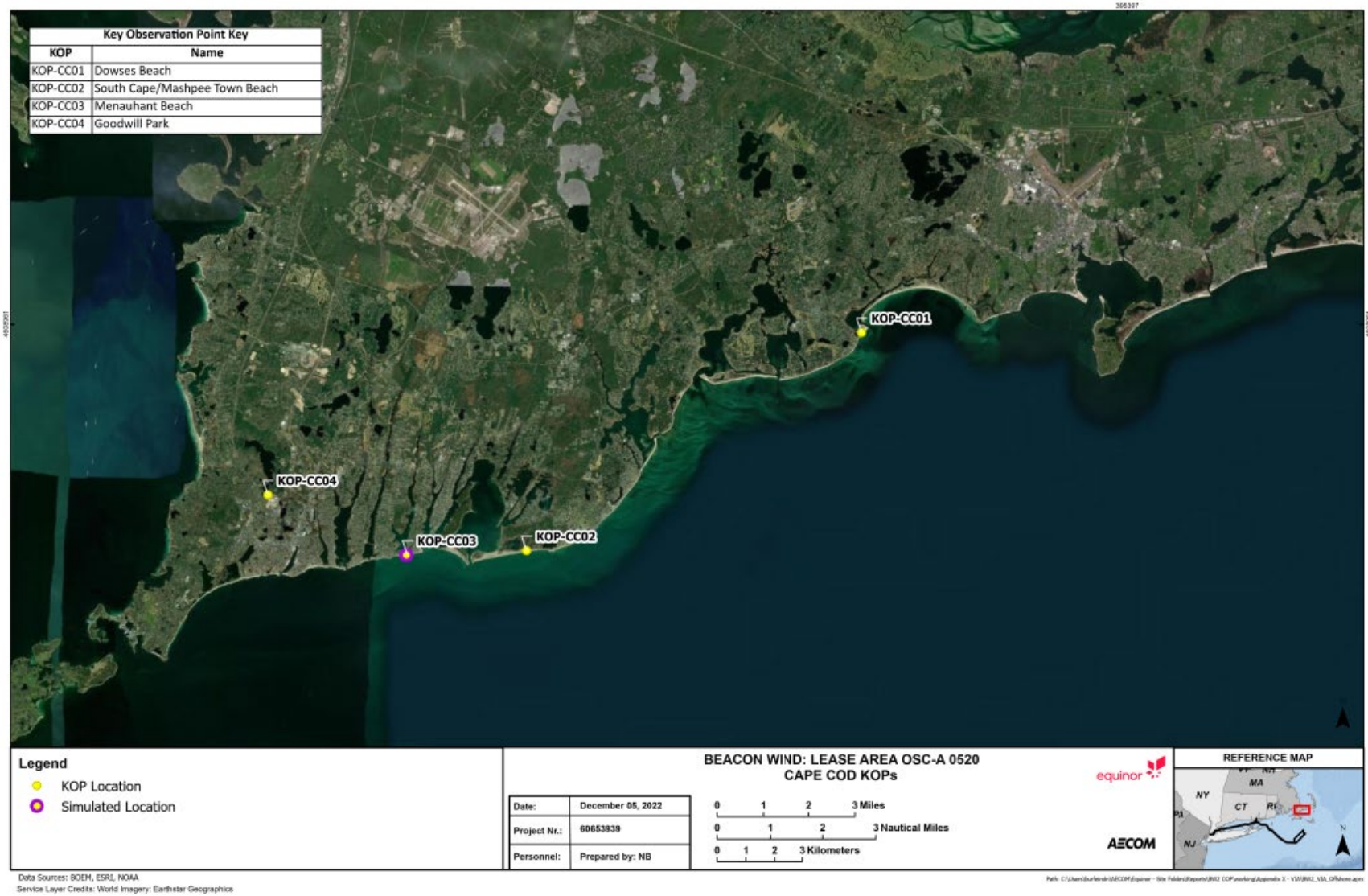


FIGURE X.6-5. ELIZABETH ISLANDS KOPS

X.6.1.4 Identification and Description of Potential Visual Contrasts and Impacts

Short-term visual effects will occur during construction of the offshore Project components (i.e., wind turbines, offshore substations, foundations, and submarine export and interarray cables) and will result from construction activities and the presence of vessels used to transport components from fabrication and manufacturing facilities directly to the Lease Area. Vessel traffic is common along the Atlantic coast and it is anticipated that the vessels required to transport Project components from shore to the Lease Area will not substantially increase the volume of traffic along the coasts of New York, Massachusetts, and Rhode Island, respectively. The majority of the vessels that will be used for Project construction will be similar in size and shape to existing commercial and military vessels; therefore, weak contrast will be introduced for viewers along the coasts of New York, Rhode Island, and Massachusetts, who will see vessels in the foreground to middle-ground traveling from ports on the mainland to the Lease Area.

Installation of the submarine export cable in nearshore waters will introduce vessels relatively close to shore along the North Fork and North Shore of Long Island, as well as the southern coasts of Connecticut and Westchester County in New York, and coastal portions of the Boroughs of the Bronx and Queens in New York City. While these vessels will be visible from shore, they will not remain in any area for more than several weeks. Because of the relatively short duration that they will be in any single location, they are not anticipated to adversely affect visual resources.

Nighttime construction activities are also proposed to occur within the Lease Area. Navigation lights associated with large vessels (i.e., barges and jack-up vessels) and lights necessary to perform construction activities may be visible from coastal vantage points. However, visual contrasts and effects resulting from nighttime construction activities will be limited to select locations within the Lease Area. These visual effects will also be short-term because large vessels and lights necessary to perform construction activities will not be present overnight once construction is complete.

The analysis of offshore visual contrast and impact levels presented in the sections below is limited to the operational and maintenance phase of the Project. The assessment of operational phase visual impacts is based in part on the identification and description of visual contrasts caused by the introduction of project components into the views. To the extent that the forms, lines, colors, and textures of the Project, along with its size and any motion it exhibits, differ from these same properties in the Project's visual backdrop, visual contrast is created. Depending on its apparent size, relative scale, and spatial relationship to other elements in the view, the contrast may have a noticeable effect on the quality of the view perceived by viewers, who may regard the change to the view as a positive or negative impact. Visual simulations are used as important aids in identifying visual contrasts.

X.6.1.5 Offshore Visual Simulations

Photographic simulations of the offshore Project components were developed to communicate the potential for visual contrasts and change from existing visual conditions. Beacon Wind recognizes the limitations of using simulations to assess impacts. Simulations represent a single time of day, and the camera lens cannot capture the full view, or match the visual acuity of most observers in the field on a clear day (BOEM 2021a). Additionally, turbines will have moving blades, and these may be detectible at distances of 27 mi (43.5 km) or greater (Sullivan, Personal Communication). Nevertheless, photo realistic simulations are important.

The photography used in the visual simulations was largely collected during clear weather conditions. While the simulations generally illustrate minimal atmospheric haze and screening, actual visibility of the Project will be limited by several other factors not specifically illustrated in the visual simulations evaluated including precipitation, fog, haze, and other ambient air-related conditions which affect the visibility of an object or objects. Consequently, simulations developed from the KOPs are representative of a conservative worst-case assessment of Project visibility and potential visual impact within the APSLVI.

Several of the vetted and photographed KOPs have views of the Project but were not chosen to be simulated due to their geographic proximity to simulated KOPs, and/or having similar seascape/landscape context as the simulated KOPs. **Table X.6-1** below depicts simulated KOPs that are representative of the potential KOPs that have views of the Project but were not simulated.

As discussed in **Section X.6.1.2.4**, transportation to and from Cape Cod, Nantucket, and Martha's Vineyard is mainly by ferry. These ferry routes are on the north sides of Martha's Vineyard and Nantucket but have the ability for visibility towards the offshore Project components. Although no photographs were taken on the ferries, **Table X.6-1** below identifies those simulated KOPs that may serve as a proxy for the ferry viewpoints.

TABLE X.6-1. OFFSHORE REPRESENTATIVE SIMULATIONS

SIMULATED KOPS		KOP OR VIEWPOINT THE SIMULATION REPRESENTS	
KOP NUMBER	KOP NAME	KOP NUMBER	KOP NAME
MV01	Aquinnah Cliffs Overlook	N/A	N/A
MV02	Edwin D. Vanderhoop Homestead (Aquinnah Cultural Center)	N/A	N/A
MV08	Tississa Pond Beach	MV07 MV06	Tississa Pond Hiking Trail Wilson's Landing
MV10	Katama/South Beach	MV05	Long Point Beach
MV12	Gay Head Lighthouse	N/A	N/A
MV14	Wasque Point Trail Reservation	MV13	Wasque Point Beach Hyannis - Martha's Vineyard Ferry
MV15	Wasque Avenue Entry Kiosk	N/A	N/A
MV16	Squibnocket Beach	MV03	Lucy Vincent Beach
MV25	Wasque Avenue Entry Kiosk Night	N/A	N/A
MV26	Peaked Hill	MV04 MV09	Barn House/Skiff Mayhew-Vincent House 322 South Road
NA01	Cisco Beach	NA18 NA29	Ladies Beach Cisco Beach below Sanford Farm Barn
NA04	Tom Nevers Beach	NA05 NA14	Tom Nevers Field Low Beach

Simulated KOPs		KOP or Viewpoint the Simulation Represents	
KOP Number	KOP Name	KOP Number	KOP Name
NA07	Nobadeer Beach	N/A	N/A
NA08	Surfside Beach	N/A	N/A
NA09	Miacomet Beach and Pond	N/A	N/A
NA10	Madaket Beach	NA16	Head of Plains
NA12	Hummock Pond Road Bike Path	N/A	N/A
NA13	Nantucket Conservation Foundation (NCF) Sanford Farm Barn Overlook	N/A	N/A
NA20	Madequacham 5	NA06	Madequacham 1
NA21	Madaket Beach (at Sunset & Night)	N/A	N/A
T01	Tuckernuck 1	T02 NA28	Tuckernuck 2 Hyannis/Nantucket Ferry Martha's Vineyard/Nantucket Ferry
CC03	Menauhant Beach	CC01 CC02	Dowses Beach South Cape/Mashpee Town Beach
EI01	Cuttyhunk Lookout	EI02	Barges Beach

The simulations were prepared in general conformance to the NPS's publication *Evaluating Photosimulations for Visual Impact Assessment* (Sullivan, Meyer, and Palmer 2021) and best practices utilized to make the simulations spatially accurate and realistic.

Efforts were made to secure base photography for the simulations under clear sky conditions. However, this was not possible in all cases. As such, the simulations reflect a range of visual contrast possible under differing conditions (e.g., overcast/cloudy, haze, clear). Similarly, KOP photographs were intended to capture a range of lighting conditions (side lit, back lit, front lit) at different times of the day (e.g., from morning through sunset).

Simulations were created to produce a real-world scaled, computer-generated model of the proposed facilities in Autodesk Civil 3D software in conjunction with ESRI ArcMap 10.2. The model is then imported into Autodesk 3ds Max software where color and texture information are added. To generate the correct view relative to the actual photograph, a three-dimensional (3D) camera in software is placed in the digital environment at a location corresponding to the real-world location provided by GPS records collected during the field visit. The 3D camera lens is set to match the camera lens focal length that was actually used in the field. This allows for viewing of the computer-generated model in the same way that the proposed energy infrastructure would be viewed in the field. Additional elements are then modeled to help to verify camera alignment; these elements included the existing buildings, transmission structures, and other ancillary facilities. Each camera is then adjusted to match the photograph taken. Information such as time, date, and aperture are

imported from the metadata information the digital camera embeds into each image. These settings allow the digital environment settings for sun angle to be modeled accurately to correctly match the light and shadows on the photographs.

The 3D model, the camera, and the lighting information is then used in a process called rendering to generate a two-dimensional image of the above-water offshore and aboveground onshore Project components representing the view from each of the KOPs at this point the computer calculates shadows, lights and colors to accurately render a 3D model. The rendered image(s) is then composited with an existing photograph. Foreground objects are verified at this point; including any obstructions such as landscape or buildings that will screen the viewer from seeing the proposed facility. Areas of the rendering that are blocked or screened by foreground objects are then masked so they cannot be seen in the final simulation.

The offshore simulations and existing condition photos from KOPs are included as **Attachment X-2** and **Attachment X-4.**

X.6.1.6 Offshore Visual Impact Levels

This section explains how the visual impact levels (major, moderate, minor, or negligible) of recorded impacts are evaluated and the factors considered in identifying the levels. As in the case for the SLIA, the impact level in the VIA is a function of both the characteristics of the impact and the impact receptor and the key characteristics are referred to as the sensitivity of the receptor and the magnitude of the impact. Sensitivity is broken down into susceptibility and value, while magnitude is broken down into size/scale, geographic extent, and duration and reversibility of impacts. In conformance with the BOEM SLVIA Methodology, professional judgement has been employed to rate each factor and its components on an ordinal scale with three levels. These relationships are presented in **Table X.6-2** below.

TABLE X.6-2. VIA IMPACT RATING FACTORS, COMPONENTS, AND IMPORTANCE LEVELS

Factor	Component	Importance Level
Receptor Sensitivity		High, medium, low
	Susceptibility	High, medium, low
	Value	High, medium, low
Impact Magnitude		Large, medium, small, negligible
	Size and scale of effect	Large, medium, small, negligible
	Geographic extent of effect	Large, medium, small, negligible
	Duration and reversibility	Good, fair, poor

VIA Rating Forms for each simulated KOP are included as **Attachment X-3**. The rating forms include detailed information for each KOP including: a general description of the KOP; the key characteristics of the KOP; the existing SLCA and visual context; a characterization of the viewers/receptors at the KOP; and receptor sensitivity, impact magnitude, and overall impact ratings for each KOP. More detail on the component receptor sensitivity and impact magnitude analysis and ratings are provided in the sections below.

X.6.1.6.1 VIA Receptor Sensitivity

The sensitivity of a visual receptor (a person or group of people) is dependent on their susceptibility to change in particular views and also on the value they place on those views.

Impacts on people who are particularly sensitive to changes in views are more likely to be considered important than the same impacts would be to someone who is less sensitive to the quality of views. The relative susceptibility of viewers to changes in views is primarily a function of the degree to which the activities in which the viewers are engaged focus attention or interest on the seascape view.

As noted in GLVIA3 (LI and IEMA 2013), the visual receptors most susceptible to change may include the following:

- Residents with views of the proposed project from their homes;
- People engaged in outdoor recreation whose attention or interest is likely to be focused on the seascape/landscape and on particular views;
- Visitors to historic or culturally important sites, where views of the surroundings are an important contributor to the experience;
- People who regard the visual environment as an important asset to their community; and
- People traveling on scenic highways, railroads, or other transport specifically for enjoyment of views.

Native American tribes may also be highly sensitive to changes in views.

Visual receptors who, on average, may be less sensitive to changes in views include

- People engaged in outdoor recreation whose attention or interest is unlikely to be focused on the landscape and on particular views because of the type of activity in which they are engaged, such as volleyball players; and
- People at their place of work (inside or outside) whose attention is generally focused on their work, not on scenery, and where the seascape/landscape setting is not important to the quality of working life.

Commuters and other travelers on non-scenic routes are generally regarded as moderately sensitive viewers (LI and IEMA 2013).

Impacts on viewers are also dependent upon the value they place on those viewers. Impacts at heavily visited, widely recognized, and highly valued viewpoints are more likely to be important. Relative judgments about the values viewers attach to particular views are determined in a variety of ways, including the following:

- The number of likely viewers, as known, estimated, or judged;
- Designation as a scenic viewpoint, especially within a designated scenic area such as a scenic roadway, river, or national park;
- Association with a historic or culturally important site or sites, especially within a designated area;
- Appearances in guidebooks, tourist maps, web sites, online photo collections, and social media;
- References to the views in literature or art;
- Provision of facilities for view enjoyment, such as parking, restrooms, interpretive panels, and telescopes; and
- Consultation with residents, visitor's bureaus, tourism service providers, and other local entities.

Martha's Vineyard, Nantucket, Cape Cod, and the Elizabeth Islands are popular places to live and vacation, and based on the AECOM/Ramboll personnel field experiences, there is evidence that people are drawn to this geography by the unique maritime setting, historic features, and high level of naturalness. The KOPs are visited by people who come, at least in part, to enjoy the views,

including views of the ocean horizon. It is therefore determined that visual receptors are generally considered sensitive to changes in views given that the viewers value the setting, are aware of the surroundings, and will likely be aware of changes in the visual environment. This general evaluation of receptor sensitivity is based on several factors including:

- Popularity of Martha's Vineyard, Nantucket, Cape Cod, and the Elizabeth Islands as tourist destinations;
- Popularity as summer homes;
- Tourist based economies;
- Demonstrated local financial support for conservation of natural areas (real estate transfer taxes); and
- Images, postcards, etc. that celebrate the scenic and historic character of Martha's Vineyard, Nantucket, Cape Cod, and the Elizabeth Islands.

Professional judgements about the predominant viewer groups susceptibility to change and the value of the views from the respective KOPs are both recorded on a scale of *high*, *medium*, or *low*. Those ratings on susceptibility to change and value of the views are combined to determine the overall sensitivity of the visual receptor at each KOP as summarized in **Table X.6-3** below.

TABLE X.6-3. OFFSHORE VIA RECEPTOR SENSITIVITY MATRIX

KOP NUMBER	KOP NAME	VIEWER GROUP	VIEWER SUSCEPTIBILITY RATING	VIEW VALUE RATING	VIEWER SENSITIVITY RATING
MV01	Aquinnah Cliffs Overlook	Tourists and recreational	High	High	High
MV02	Edwin D. Vanderhoop Homestead (Aquinnah Cultural Center)	Tourists	High	High	High
MV08	Tississa Pond Beach	Recreational	Medium	High	High
MV10	Katama/South Beach	Tourists and recreational	High	High	High
MV12	Gay Head Lighthouse	Tourists and recreational	High	High	High
MV14	Wasque Point Trail Reservation	Tourists and recreational	High	High	High
MV15	Wasque Avenue Entry Kiosk	Tourists and recreational	High	High	High
MV16	Squibnocket Beach	Tourists and recreational	High	High	High
MV25	Wasque Avenue Entry Kiosk Night	Tourists and recreational	High	High	High
MV26	Peaked Hill	Tourists and recreational	High	High	High
NA01	Cisco Beach	Tourists and recreational	High	High	High
NA04	Tom Nevers Beach	Tourists and recreational	High	High	High
NA07	Nobadeer Beach	Tourists and recreational	High	High	High
NA08	Surfside Beach	Tourists and recreational	High	High	High
NA09	Miacomet Beach and Pond	Tourists and recreational	High	High	High
NA10	Madaket Beach	Tourists and recreational	High	High	High
NA12	Hummock Pond Road Bike Path	Tourists and recreational	Low	High	Medium
NA13	Nantucket Conservation Foundation (NCF) Sanford Farm Barn Overlook	Tourists and recreational	Medium	High	High

KOP Number	KOP Name	Viewer Group	Viewer Susceptibility Rating	View Value Rating	Viewer Sensitivity Rating
NA20	Madequacham 5	Tourists and recreational	High	High	High
NA21	Madaket Beach (at Sunset & Night)	Tourists and recreational	High	High	High
T01	Tuckernuck 1	Tourists and recreational	High	High	High
CC03	Menauhant Beach	Tourists and recreational	High	High	High
EI01	Cuttyhunk Lookout	Tourists and recreational	High	High	High

X.6.1.6.2 VIA Magnitude of Impact

Large-scale changes that introduce new, non-characteristic, discordant, or intrusive elements into the view are likely to be more important than small changes or changes involving features already present within the view. The magnitude of effect expected from the Project is similar to that used for the SLIA and is based on the size or scale of the change, the geographic extent of its effects, and its duration and reversibility.

Size and Scale of Change

Professional judgement has been made regarding the degree of change to the view quality from the loss, addition, or alteration of features or elements of the view. Considerations included:

- The scale of the change in the view with respect to the loss or addition of features in the view and its composition, including the percentage of the view the project occupies;
- The degree to which added features or changes to the view contrast with existing elements in terms of form, line, color, and texture, and any effects of the added elements or changes on scale relationships, spatial composition of the view, and motion.
- The degree to which the project components, or the project as a whole, draw visual attention away from existing features of the view; and
- The nature of the view of the proposed development in terms of the relative amount of time over which it will be experienced (view duration) and whether views will be full, partial, or glimpses.

An evaluation of the size and scale of change for each KOP is contained **Attachment X-3.** In following the BOEM SLVIA Methodology, the size and scale of the change to the potentially affected view has been recorded on a scale of *large*, *medium*, or *small*.

Please note that with respect to the evaluation of visual change in form, line, color, texture, and motion as presented in the VIA Rating Forms included in **Attachment X-3,** a modified BLM Visual Resource Management scale was utilized to score each contrast characteristic at the KOP. The rating scale used, presented below in **Table X.6-4**, is based upon the system developed by Sullivan and Cothren (2013) on offshore wind turbine visibility but augmented by material from the GLVIA3 and BOEM's SLVIA Methodology.

TABLE X.6-4. VISUAL CONTRAST AND MAGNITUDE OF IMPACT RATING

Contrast Rating	Equivalent Magnitude of Impact	Definition
Level 0	No Impact	An object/phenomenon that is not discernible or presents no contrast or apparent change.
Level 1	Negligible	An object/phenomenon that is near the extreme limit of visibility. It could not be seen by a person who was unaware of it in advance and not looking for it. Even under those circumstances, the object can be seen only after looking at it closely for an extended period and therefore unlikely to compete with key visual elements to any great extent.
Level 2	Small	An object/phenomenon that appears very small and/or faint, but when the observer is scanning the horizon or looking more closely at an area, can be detected without prolonged viewing. It could sometimes be noticed by casual observers. However, most people would not notice it without some active looking, and so it is unlikely to compete with key characteristic visual elements to any great extent.
Level 3	Small – Moderate	An object/phenomenon that is easily detected after a brief look and would be visible to most casual observers, but without sufficient size or contrast to compete with key characteristic visual elements to any great extent.
Level 4	Moderate	An object/phenomenon that is obvious and with sufficient size or contrast to compete with baseline visual elements, but with insufficient visual contrast to strongly attract visual attention and insufficient size to occupy most of an observer's visual field.
Level 5	Moderate – Large	An object/phenomenon that does not appear large but contrasts with the surrounding landscape elements so strongly that it is a major focus of visual attention, drawing viewer attention immediately and tending to hold that attention. In addition to strong contrasts in form, line, color, and texture, bright light sources, such as lighting and reflections and moving objects associated with the study subject, may contribute substantially to drawing viewer attention. The visual prominence of the study subject interferes noticeably with views of existing visual elements.
Level 6	Large	An object/phenomenon that constitutes a strong visual contrast and which occupies most of the visual field. Views of it cannot be avoided except by turning one's head more than 45 degrees from a direct view of the object. The object/phenomenon is the major focus of visual attention, and its large apparent size is a major factor in its view dominance. In addition to size, contrasts in form, line, color, and texture, bright light sources and moving objects associated with the study subject may contribute substantially to drawing viewer attention. The visual prominence of the object detracts noticeably from the existing view elements.

Geographic Extent

The geographic extent of a visual impact varies as seen from different viewpoints and reflects the following:

- The angle of view in relation to the viewer, for example, whether the project is in the center of the view or in the periphery of the view. If the project is closer to the center of the view, the effect will be larger.
- The apparent size of the proposed project within the view. Projects that appear larger to the viewer will have a greater effect on the view.
- The extent of the area over which essentially the same changes would be visible, that is, whether the impact of the project on the view is evident only in the immediate vicinity of the photopoint or over a wide area in and around the KOP. Projects that are visible over a larger area result in greater impact.

The professional judgment about the geographic extent of a particular impact is recorded on a scale of *large*, *medium*, or *small*. Geographic extent ratings are contained in the VIA Rating Forms included0

Duration and Reversibility of Impacts

As with the SLIA, the duration of offshore visual impacts is considered long-term given that the Project is assumed to have a Project lifetime of approximately 35 years for the purposes of this SLVIA although some installations and Project components may remain fit for continued service after such time. There is not expected to be any residual visual impacts remaining after decommissioning.

Reversibility has been determined to be fully reversible. The assessment of duration and reversibility impacts considered in combination has been determined to be fair given the long-term duration but full reversibility.

X.6.1.6.3 VIA Impact Level (Combining Components, Factors, and Impacts on Multiple KOPs)

Once the components for receptor sensitivity (susceptibility and value) and impact magnitude (size and scale, geographic extent, and duration and reversibility) are rated, the components are combined into an overall visual impact level recorded on a scale of *major*, *moderate*, or *minor*.

The BOEM SLVIA Methodology recommends the same process for combining the sensitivity and magnitude components and factors to determine the impact level for a given KOP, as is used in the SLIA and recommends the same matrices. The overall visual impact levels for the analyzed KOPs are presented in **Table X.6-5** below.

TABLE X.6-5. OFFSHORE VIA OVERALL IMPACT LEVELS

KOP NUMBER	KOP NAME	OVERALL IMPACT LEVEL	OVERALL IMPACT LEVEL RATIONALE
MV01	Aquinnah Cliffs Overlook	Moderate	The proposed Project would form a relatively modest new focal point in a different direction from the principal view from this highly sensitive KOP, its prominence being exacerbated by the simple horizontal form of the horizon on which it would be seen, and its position framed by the Normans Land and Martha's Vineyard landmasses.
MV02	Edwin D. Vanderhoop Homestead (Aquinnah Cultural Center)	Moderate	The proposed Project would form a relatively modest new focal point in the view from this KOP, its prominence being exacerbated by the simple horizontal form of the horizon on which it would be seen, and its position framed by the Normans Land and Martha's Vineyard landmasses.
MV08	Tississa Pond Beach	Minor	The proposed Project would form a relatively minor change to the view due to the small magnitude of change to which receptors' sensitivity is high. The proposed Project would lessen the perceived naturalness experienced at the KOP and increase the degree of perceived movement present.
MV10	Katama/South Beach	Moderate	The proposed Project would form a relatively modest impact to the receptor at this KOP as it would introduce a new focal point on the principal view from this highly sensitive KOP, its prominence being exacerbated by the simple horizontal form of the horizon on which it would be seen. The Project would also lessen the perceived naturalness experienced at the KOP and increase the degree of perceived activity present.
MV12	Gay Head Lighthouse	Moderate	The proposed Project, by implication of the KOP's position to the principal outlook, distance and consequent reduced prominence would represent a relatively modest impact to the receptor at this KOP based on the character, visual amenity, and sensitivity associated with this KOP.
MV14	Wasque Point Trail Reservation	Moderate	The proposed Project would form a relatively modest impact to the receptor at this KOP as it would introduce a new focal point on the principal view from this highly sensitive KOP, its prominence being exacerbated by the simple horizontal form of the horizon on which it would be seen. The Project would also lessen the perceived naturalness experienced at the KOP and increase the degree of perceived activity present.
MV15	Wasque Avenue Entry Kiosk	Moderate	The proposed Project would form a relatively modest impact to the receptor at this KOP as it would introduce a new focal point on the principal view from this highly sensitive and remote KOP, its prominence being exacerbated by the simple flat form of the horizon on which it would be seen and the movement of turbine rotors, but partially screened by existing stand of trees.
MV16	Squibnocket Beach	Moderate	The proposed Project would form a relatively modest impact to the receptor at this KOP as it would introduce a new focal point on the principal view from this highly sensitive KOP and medium magnitude. Its prominence would be exacerbated by the simple horizontal form of the horizon on which it would be seen. The Project would lessen the perceived naturalness experienced at the KOP and increase the degree of perceived activity present.
MV25	Wasque Avenue Entry Kiosk Night	Moderate	The proposed Project would form a relatively modest impact to the receptor at this KOP as it would introduce a new focal point on the principal view from this highly sensitive and remote KOP, its prominence being exacerbated by the simple flat form of the horizon on which it would be seen and the movement of turbine rotors, but partially screened by existing stand of trees.

KOP Number	KOP Name	Overall Impact Level	Overall Impact Level Rationale
MV26	Peaked Hill	Moderate	The proposed Project, by implication of the KOP's position to the principal outlook, distance, elevation, and prominence would represent a relatively modest impact to the sensitive receptors at this KOP.
NA01	Cisco Beach	Moderate	The proposed Project would form a relatively modest impact to the receptor at this KOP as it would introduce a new focal point on the principal view from this highly sensitive KOP, its prominence being exacerbated by the simple horizontal form of the horizon on which it would be seen. The Project would also lessen the perceived naturalness experienced at the KOP and increase the degree of perceived activity present.
NA04	Tom Nevers Beach	Moderate	The proposed Project would form a relatively modest impact to the receptor at this KOP as it would introduce a small new element along the horizon line from this highly sensitive KOP, its prominence being exacerbated by the simple horizontal form of the horizon on which it would be seen. The Project would also lessen the perceived naturalness experienced at the KOP and increase the degree of perceived activity present.
NA07	Nobadeer Beach	Moderate	The proposed Project would form a relatively modest impact to the receptor at this KOP as it would introduce a new focal point on the principal view from this highly sensitive KOP, its prominence being exacerbated by the simple horizontal form of the horizon on which it would be seen. The Project would also lessen the perceived naturalness experienced at the KOP and increase the degree of perceived activity present.
NA08	Surfside Beach	Moderate	The proposed Project would form a relatively modest impact to the receptor at this KOP as it would introduce a new focal point on the view from this highly sensitive KOP, its prominence being exacerbated by the simple horizontal form of the horizon on which it would be seen. The Project would also lessen the perceived naturalness experienced at the KOP and increase the degree of perceived activity present.
NA09	Miacomet Beach and Pond	Moderate	The proposed Project would form a relatively modest impact to the receptor at this KOP as it would introduce a new focal point on the principal view from this highly sensitive KOP, its prominence being exacerbated by the simple horizontal form of the horizon on which it would be seen. The Project would also lessen the perceived naturalness experienced at the KOP and increase the degree of perceived activity present.
NA10	Madaket Beach	Moderate	The proposed Project would form a relatively modest impact to the receptor at this KOP as it would introduce a new focal point on the principal view from this highly sensitive KOP, its prominence being exacerbated by the simple horizontal form of the horizon on which it would be seen. The Project would also lessen the perceived naturalness experienced at the KOP and increase the degree of perceived activity present.
NA12	Hummock Pond Road Bike Path	Minor	The proposed Project would form a relatively minor impact to the receptor at this KOP as it would introduce a new element to the view, however recreationalists and tourists on the bike path are not focused on this view. The prominence of the project is exacerbated by the simple horizontal form of the horizon on which it would be seen.
NA13	Nantucket Conservation Foundation (NCF) Sanford Farm Barn Overlook	Moderate	The proposed Project would form a relatively modest impact to the receptor at this KOP as it would introduce a new element to the sensitive view, however recreationalists and tourists on the path may not be focused on this view. The prominence of the project is exacerbated by the simple horizontal form of the horizon on which it would be seen but is partially interrupted by existing vegetation.

KOP Number	KOP Name	Overall Impact Level	Overall Impact Level Rationale
NA20	Madequacham 5	Moderate	The proposed Project would form a relatively modest impact to the receptor at this KOP as it would introduce a new focal point on the principal view from this highly sensitive KOP, its prominence being exacerbated by the simple horizontal form of the horizon on which it would be seen. The Project would also lessen the perceived naturalness experienced at the KOP and increase the degree of perceived activity present.
NA21	Madaket Beach (at Sunset & Night)	Moderate	The proposed Project would form a relatively modest impact to the receptor at this KOP as it would introduce a new focal point on the principal view from this highly sensitive KOP, its prominence being exacerbated by the simple horizontal form of the horizon on which it would be seen. The Project would also lessen the perceived naturalness experienced at the KOP and increase the degree of perceived activity present.
T01	Tuckernuck 1	Moderate	The proposed Project would form a relatively modest impact to the receptor at this KOP as it would introduce a new focal point on the principal view from this highly sensitive KOP, its prominence being exacerbated by the simple horizontal form of the horizon on which it would be seen. The Project would also lessen the perceived naturalness experienced at the KOP and increase the degree of perceived activity present.
EI01	Cuttyhunk Lookout	Moderate	The proposed Project would form a relatively modest impact to the receptor at this KOP as it would introduce a new focal point on the principal view from this highly sensitive KOP, its prominence being exacerbated by the simple horizontal form of the horizon on which it would be seen. The Project would also lessen the perceived naturalness experienced at the KOP and increase the degree of perceived activity present.
CC03	Menauhant Beach	Minor	The proposed Project would form a relatively minor change to the view due to the small magnitude of change to which receptors' sensitivity is high. The proposed Project is at a far distance and mostly obscured by Martha's Vineyard, but when viewed, would lessen the perceived naturalness experienced at the KOP and increase the degree of perceived movement present.

X.6.2 BW1 and BW2 Onshore VIA – Queens, New York

X.6.2.1 BW1 and BW2 Onshore Project Area Description – Queens, New York

The Astoria power complex in Queens, New York was selected as the landfall and POI location, and both AGRE and NYPA are onshore substation sites under consideration for BW1 and BW2 (see Section **X.3.3.1.1** for details on the substation sites). The entire Astoria power complex is zoned M3-1 (Heavy Manufacturing District), which permits the use of buildings/structures associated with the generation, transmission, or distribution of electricity. The preference was to locate the onshore substation facilities within or immediately adjacent to the existing POI, if possible. This preference would also minimize additional disturbance for installation of the onshore interconnection cables between the onshore substation and the existing POI and would maintain consistency with existing land uses in the vicinity.

The New York Onshore APSLVI evaluated in this assessment extends to the Bronx neighborhood of Crotona to the north, Manhattan to the west, and the Queens neighborhoods of College Point and Corona to the east and southeast, and Maspeth to the south. The central extent of the Onshore APSLVI includes the neighborhoods of Astoria, Jackson Heights, and Rikers Island. The New York APSLVI comprises a dense urban development adjacent to the East River with a mixture of inner city residential, industrial, commercial and airport land uses.

The New York Onshore APSLVI indicates that views of AGRE would be substantially constrained and limited to sections of the East River between Hells Gate Bridge, Randall's Island eastern waterfront, the waterfront of the South Bronx, and from locations at Rikers Island and La Guardia Airport. Views from locations elsewhere on the East River and inland would be restricted by a combination of intervening topography, vegetation and built structures. The pattern of visibility for NYPA would be similar to that of AGRE. The majority of views originate from the East River and extends between Randall's Island, South Bronx and Rikers Island, as well as parts of La Guardia Airport.

X.6.2.2 BW1 and BW2 Onshore Visual Impact Receptors/Viewers

Receptors and viewers are the people who interface with the Project and experience its effects. Understanding the characteristics of viewers is important because the project's effects on the viewer experience and the viewer response to these effects contribute to the visual impact.

In general, the following visual impact receptor viewer groups were identified:

- Residential receptors;
- Tourists and Recreational receptors;
- Water-based receptors; and
- Transportation-based receptors.

The following discussion summarizes these groups that are relevant to the Onshore VIA for Queens.

X.6.2.2.1 Residential Receptors

Residential development is located to the south, southeast, west, and north of the New York Onshore APSLVI. Properties to the south and southeast of the onshore substation facility sites would be the closest to the development, in the neighborhoods of Ditmars Steinway, Astoria Heights and Astoria

and at a greater distance, Jackson Heights and Sunnyside Gardens in Queens County. Queens has a total population of approximately 2.3 million people. [10] Properties are generally 2- or 3-story terraced buildings, although these are occasionally interspersed with larger blocks of apartment blocks which reach to 5 stories or more. Buildings are set out in a dense grid pattern along straight street. Streets run in a northeast/ southwest alignment, with the industrial site at Ditmars Steinway located at the northern end of the street. Across the East River lies Bronx County, which has a total population of approximately 1.4 million people. [11]

Further west, separated from the sites by the East River and Randall's Island, lie the neighborhoods of Manhattan – East Harlem, the Upper East Side and Lennox Hill. Manhattan has a population of approximately 1.6 million people.[12] High-rise development exists here – tall apartment blocks of 20 stories or greater are located in these neighborhoods, interspersed with areas of a similar character to that at Ditmars Steinway and Astoria. Large areas of green space lie between apartment buildings. To the north, beyond the large areas of industry that occupy the northern shore of East River at Hunts' Point, are the neighborhoods of Harlem and Mott Haven. Blocks of residential properties are densely laid out along a gridded pattern of streets. High-rise apartment buildings are located amongst areas of terraced walkups, comprised of 4 and 5 stories. Areas of green space are positioned around the high-rise buildings, and street trees are present along the urban roadways.

For the purpose of this assessment, residential receptors are considered to have a low sensitivity. Their attention or interest is not focused on their surroundings which are highly urbanized built forms, and views of the surrounding area are very limited due to building heights, which creates an environment that is very susceptible to change.

X.6.2.2.2 Tourists and Recreational Receptors

As previously discussed in the SLIA, in order to keep the assessment proportionate, only those parks which are in proximity to the onshore substation facility sites, that are likely to be used by tourists and recreationalists, and which have theoretical visibility of the onshore substation facility sites have been considered. These parks include Randall's Island Park, Wards Island Park and Recreational Fields, and Astoria Park. Recreational receptors at these parks are mostly focused on the activity at hand, whether it be playing tennis, basketball, soccer, football, running, swimming, or playing on a playground. Some of these parks have waterfront bike and pedestrian pathways in which recreational users and tourist may chose for a more scenic route along the East River. Tourist and recreational receptors are considered to have a medium sensitivity for the purpose of this assessment. Views towards the substation are mostly limited to those parks that have access to waterfront pathways and green space. However, due to the existing highly urbanized setting along the waterfronts, recreators and tourists are not focused on the scenic value of views from recreational areas.

X.6.2.2.3 Water-Based Receptors

Due to its poor water quality, the East River it is not used for swimming. However, kayaking, sailing, and boating are popular recreational water-based activities on the East River. Views from the water are bounded by a dense, urban environment ranging from the more industrial waterfront developments

[10] https://census.gov/
[11] https://census.gov/
[12] https://censusreporter.org/profiles/06000US3606144919-manhattan-borough-new-york-county-ny/

and features to residential apartment blocks and occasional landmark buildings. Therefore, water-based receptors are considered to have a medium sensitivity for the purposes of this assessment.

X.6.2.2.4 Transportation-Based Receptors

The Astoria power complex is set within a context of dense network of various modes of transportation including roads, railways, ferry routes, and airports (see **Figure X.6-6.**). Receptors on each of these modes of transportation will experience the landscape differently than that of static observers. Although the number of receptors in the transportation category is high due to the nature of the city environment, view durations are likely to be very limited due to the movement of different modes of transportation. Additionally, factors such as the configuration of seating, speed and direction of travel further distinguish the experiences of observers utilizing transportation within the Project's Onshore APSLVI. Therefore, for the purpose of this assessment, transportation-based receptors are considered to have a low sensitivity.

Roads

Those roads which are likely to have actual views of the onshore substation facility sites are located to the south and west of the Onshore APSLVI. These include:

- Grand Central Parkway - a 14.61-mi (23.51-km) long route that stretches from the Triborough Bridge in New York City to Nassau County on Long Island. The parkway routes through the neighborhoods of Queens and passes LaGuardia Airport. As it routes to the south of the development area, the road begins to rise in elevation to cross the Robert F. Kennedy Bridge and views across the tops of buildings in the direction of the proposed Project sites would be possible.
- Bruckner Expressway - a freeway located in the borough of the Bronx. It routes from the Triborough Bridge to the south end of the New England Thruway at the Pelham Parkway interchange. The highway loosely follows the course of the East River and connects to several major freeways.
- FDR Drive (west of East River) – The Franklin D. Roosevelt East River Drive (FDR Drive) is a 9.68-mi (15.58-km) limited-access, 6-lane parkway on the east side of the New York City borough of Manhattan. It starts near South and Broad Streets and routes north along the East River to the 125th Street/Robert F. Kennedy Bridge/Willis Avenue Bridge interchange, where it becomes the Harlem River Drive. The FDR Drive features a mix of below-grade, at-grade, and elevated sections, as well as three partially covered tunnels, however as it passes in proximity to the proposed Project sites, it is at grade.

The network of inner-city roads, which provide access to residential properties, commercial areas, hospitals, schools etc., are considered unlikely to have views to the onshore substation facility sites due to containment by buildings. Therefore, these roads will not be considered further in this assessment.

Rail

A railway line, the Northeast Amtrak Corridor rail line, located on a viaduct which runs above properties at Ditmars Steinway before crossing the East River and through Randall's Island, will likely provide views to the onshore substation facility sites. The line is located to the south and west of the onshore substation facility sites and would provide elevated views for train passengers.

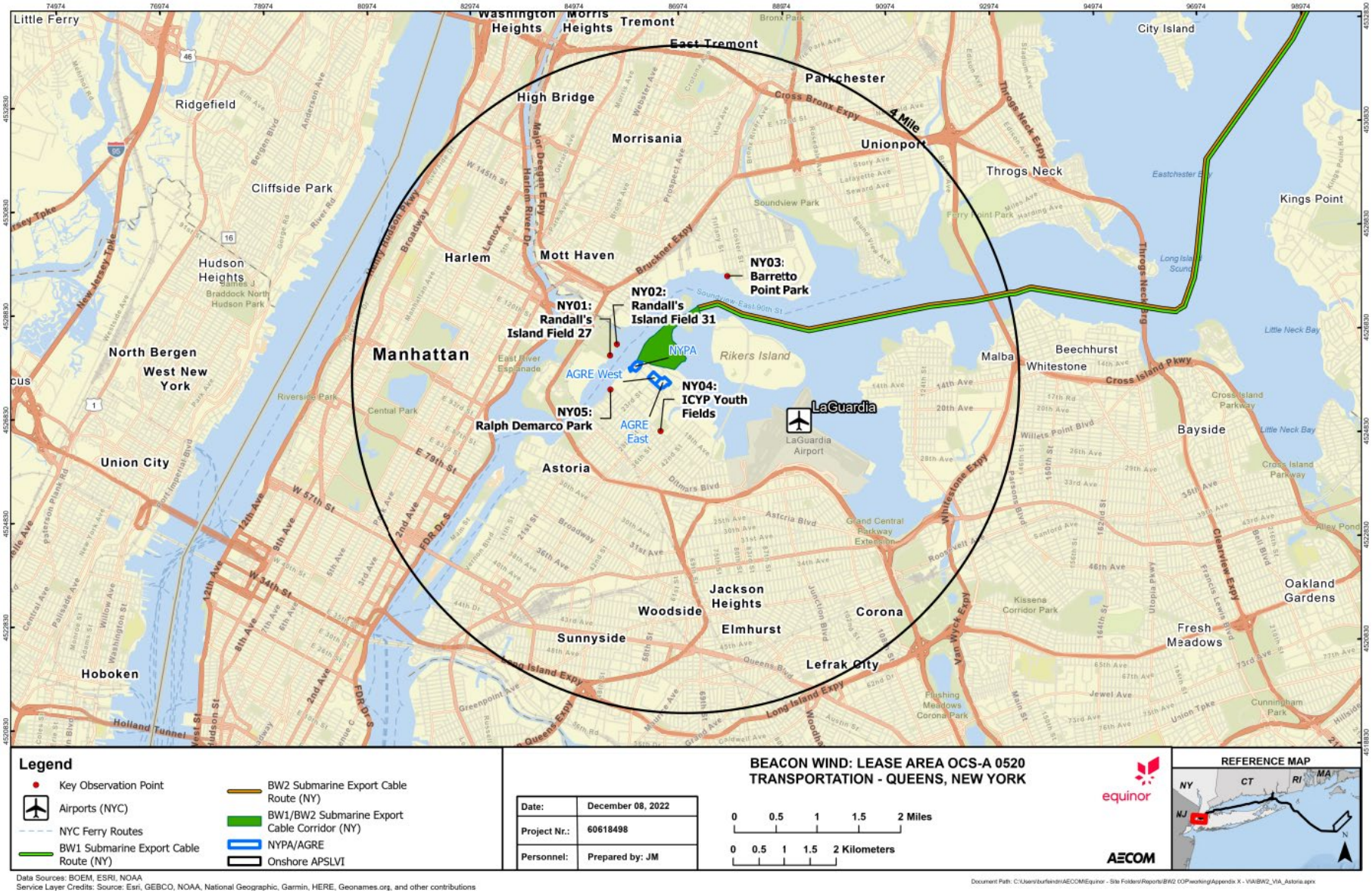
Water

The Soundview Ferry route runs from Throgs Neck in the northwest of the New York Onshore APSLVI, along East River to the west of the onshore substation facility sites, to Wall Street located southwest of the Onshore APSLVI at the southern point of Manhattan. The East River Ferry route runs from Astoria to East 34th Street pier and beyond, as its route lies within the New York Onshore APSLVI. The New York Onshore APSLVI shows that no views of any of the onshore substation facility sites would be visible from this route. Therefore, the East River ferry route is not considered further. No other ferry lines are located within the Onshore APSLVI.

Air

La Guardia Airport is located approximately 0.89 mi (1.5 km) to the east of the New York onshore substation facilities.

FIGURE X.6-6. BW1 AND BW2 ONSHORE TRANSPORTATION-BASED RECEPTORS (NEW YORK)



X.6.2.2.5 Historical Importance

The New York HRVEA Onshore PAPE is limited to 1 mi (1.6 km) surrounding the AGRE and NYPA sites (see COP **Appendix W Historic Resources Visual Effects Assessment**). Ten historic properties are located within the HRVEA Onshore PAPE. These properties include residential properties, parkland, a cemetery, historic municipal and energy facilities, and bridges.

As with properties in the HRVEA Offshore PAPE, the assessment of visual effects on 10 properties in the two HRVEA Onshore PAPEs focused on changes affecting their integrity of setting, feeling, and association. Field assessments indicated that of the 10 properties within the PAPE of the AGRE parcel, three (Bronx Kill Bridge, Port Morris Ferry Bridges, and Wards Island Waste Water Pollution Control Plant) have full or partial views of this site. The remaining seven properties do not have views due to topography and the existing and dense built environment. The Hell Gate Bridge, Bronx Kill Bridge, Port Morris Ferry Bridges, and the Wards Island Waste Water Pollution Control Plant have full or partial views of the NYPA parcel. However, for either site, the addition of Project structures at these locations would not alter any characteristics of these properties, as the new Project components would be added to an existing and dense industrial landscape already containing many modern structures, and as such would not affect these properties' integrity of setting, feeling, or association.

X.6.2.3 Selection of Onshore KOPs

The New York Onshore APSLVI indicates that views of the onshore substation facility sites would have a relatively constrained viewshed that is mainly confined to locations across East River and adjoining the river corridor due to the screening effect of the built forms that predominate locally.

A total of 31 potential New York Onshore KOPs were identified for further evaluation. The KOPs evaluated are summarized in **Figure X.6-7** and **Table X.6-6** below. KOP locations were confined to publicly accessible locations and therefore do not reflect visibility from private dwellings or private buildings. The results of the viewshed analysis, as represented graphically in the APSLVI, were verified via field reconnaissance, and KOPs eliminated (where warranted) from further evaluation that were determined to not have visibility of the onshore project area.

A subset of five of the 31 KOPs were selected for visual simulations and full analysis in the impact assessment that follows. The KOPs selected for simulations are intended to represent locations where the view is valued relative the potential KOPs evaluated, and locations that were most likely to have visibility of the onshore substation facilities. The selected KOPs are located in different directions with respect to the onshore substation facilities and at different elevations.

Water-based receptor views from vessels on East River, such as the Soundview Ferry, are represented by waterfront KOPs at Randall's Island Field 27 (KOP-NY01) and Field 31 (KOP-NY02), and Barretto Point Park (KOP-NY03), which afford open views across the river, toward the onshore substation facility sites.

The locations of New York Onshore KOPs are presented in **Figure X.6-7** and **Table X.6-6** below summarizes these KOPs.

FIGURE X.6-7. NEW YORK ONSHORE KOPS

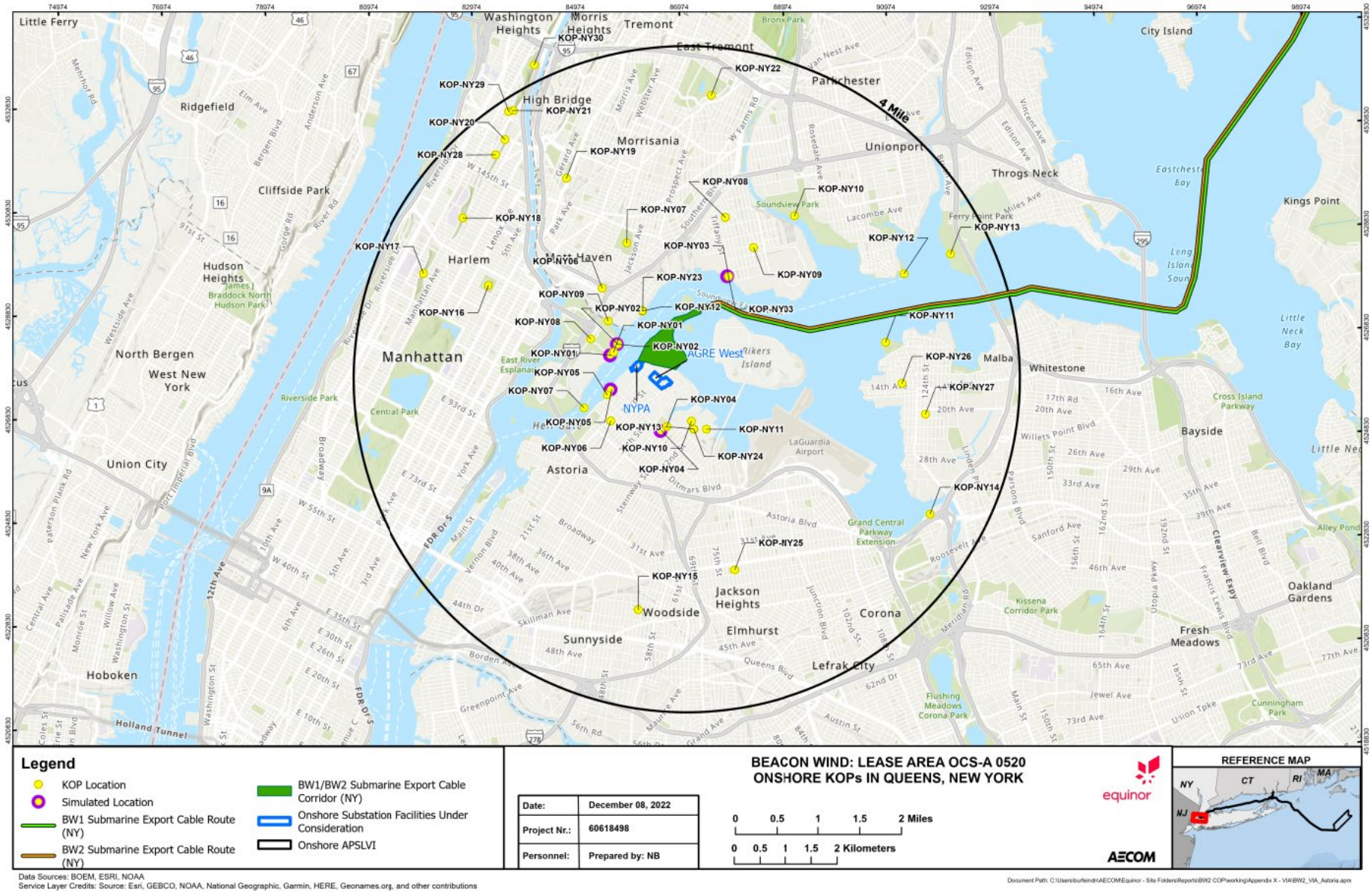


TABLE X.6-6. BW1 AND BW2 QUEENS, NEW YORK ONSHORE KOPS

KOP ID	Name	Municipality	SLCA	Viewer Group	KOP Distance to Substation Options	In/Out of Viewshed	Project Visible
NY01	Randall's Island Field 27	Manhattan	River Islands; Open Green Space	Recreational Users	AGRE - 0.5 mi (0.85 km); NYPA - 0.28 mi (0.45 km)	In	AGRE - Yes NYPA - Yes
NY02	Randall's Island Field 31	Manhattan	River Islands; Open Green Space	Recreational Users	AGRE - 0.5 mi (0.85 km); NYPA - 0.32 mi (0.51 km)	In	AGRE - Yes NYPA - Yes
NY03	Barretto Point Park	The Bronx	Open Green Space	Recreational Users	AGRE - 1.4 mi (2.3 km); NYPA - 1.45 mi (2.34 km)	In	AGRE - Yes NYPA - Yes
NY04	ICYP Youth Fields	Queens	Boundary of Urban/ Residential/Commercial; and Light Industrial/ Transportation	Recreational Users	AGRE - 0.46 mi (0.74 km); NYPA - 0.75 mi (1.21 km)	In	AGRE - No NYPA - No
NY05	Ralph Demarco Park	Queens	Boundary of Open Green Space, Urban/Residential/ Commercial, and Light Industrial/ Transportation	Recreational Users; Transportation	AGRE - 0.5 mi (0.85 km); NYPA - 0.41 mi (0.65 km)	In	AGRE - No NYPA - No
NY06	Playground 134	The Bronx	Open Green Space; Urban/Residential/Commercial	Recreational Users; Residential	AGRE - 1.10 mi (0.80 km); NYPA - 0.98 mi (1.57 km)	In	No
NY07	St. Mary's Park	The Bronx	Open Green Space	Recreational Users; Residential	AGRE - 1.42 mi (1.77 km); NYPA - 1.43 mi (2.3 km)	In	No
NY08	Julio Carbalio Fields	The Bronx	Open Green Space; Urban/Residential/Commercial	Recreational Users; Residential	AGRE - 2.0 mi (2.29 km); NYPA - 2.0 mi (3.22 km)	In	No
NY09	Joseph Rodman Drake Park	The Bronx	Open Green Space; Urban/Residential/Commercial	Recreational Users; Residential	AGRE - 1.85 mi (2.98 km); NYPA - 1.91 mi (3.08 km)	In	No
NY10	Soundview Park	The Bronx	Open Green Space	Recreational Users; Residential	AGRE - 2.46 mi (3.96 km); NYPA - 2.54 mi (4.08 km)	In	No
NY11	Hermon A MacNeil Park	Queens	Open Green Space; Urban/Residential/Commercial	Recreational Users; Residential	AGRE - 2.56 mi (4.12 km); NYPA - 2.92 mi (4.71 km)	In	No
NY12	Pugsley Creek Park	The Bronx	Open Green Space; Urban/Residential/Commercial	Recreational Users; Residential	AGRE - 3.05 mi (4.91 km); NYPA - 3.31 mi (5.33 km)	In	No
NY13	Ferry Point Park	The Bronx	Open Green Space; Urban/Residential/Commercial	Recreational Users; Residential	AGRE - 3.66 mi (5.89 km); NYPA - 3.92 mi (6.3 km)	In	No
NY14	Flushing Meadows Corona Park Kayak/Canoe Launch	The Bronx	Open Green Space	Recreational Users	AGRE - 3.48 mi (5.60 km); NYPA - 3.89 mi (6.27 km)	In	No
NY15	Lawrence Virgilio Playground	Queens	Open Green Space; Urban/Residential/Commercial	Recreational Users; Residential	AGRE - 2.66 mi (4.28 km); NYPA - 2.86 mi (4.61 km)	No	No

KOP ID	Name	Municipality	SLCA	Viewer Group	KOP Distance to Substation Options	In/Out of Viewshed	Project Visible
NY16	Marcus Garvey Park	Manhattan	Open Green Space	Recreational Users; Residential	AGRE - 2.16 mi (3.48 km); NYPA - 1.97 mi (3.17 km)	In	No
NY17	Morningside Park	Manhattan	Open Green Space	Recreational Users; Residential	AGRE - 2.90 mi (4.67 km); NYPA - 2.73 mi (4.39 km)	In	No
NY18	St. Nicholas Park	Manhattan	Open Green Space	Recreational Users; Residential	AGRE - 2.89 mi (4.65 km); NYPA - 2.7 mi (4.34 km)	In	No
NY19	Franz Sigel Park	The Bronx	Open Green Space; Urban/Residential/Commercial	Recreational Users; Residential	AGRE - 2.47 mi (3.98 km); NYPA - 2.36 mi (3.8 km)	In	No
NY20	Jackie Robinson Park	Manhattan	Open Green Space; Urban/Residential/Commercial	Recreational Users; Residential	AGRE - 3.28 mi (5.28 km); NYPA - 3.1 mi (4.99 km)	In	No
NY21	Highbridge Park	Manhattan	Open Green Space	Recreational Users; Residential	AGRE - 3.55 mi (5.71 km); NYPA - 3.36 mi (5.41 km)	In	No
NY22	Crotona Park	The Bronx	Open Green Space	Recreational Users; Residential	AGRE - 3.24 mi (5.21 km); NYPA - 3.31 mi (5.33 km)	In	No
NY23	Port Morris Gantries	The Bronx	Urban/Residential/Commercial; Light Industrial, and Transportation	Industrial	AGRE - 0.72 mi (1.16 km); NYPA - 0.61 mi (0.98 km)	In	No public access to waterfront (NYPD property); no view from adjacent roadway
NY24	Steinway House	Queens	Urban/Residential/Commercial	Residential	AGRE - 0.60 mi (0.97 km); NYPA - 0.97 mi (1.57 km)	In	No
NY25	Jackson Heights Historic District	Queens	Urban/Residential/Commercial	Residential	AGRE - 2.35 mi (3.78 km); NYPA - 2.66 mi (4.27 km)	In	No
NY26	First Reformed Church of College Point	Queens	Urban/Residential/Commercial	Residential	AGRE - 2.78 mi (4.47 km); NYPA - 3.12 mi (5.03 km)	In	No
NY27	Congregation Aqudas Achim of College Point	Queens	Urban/Residential/Commercial	Residential	AGRE - 3.09 mi (4.97 km); NYPA - 3.45 mi (5.55 km)	In	No
NY28	Sugar Hill Historic District	Manhattan	Urban/Residential/Commercial	Residential	AGRE - 3.25 mi (5.23 km); NYPA - 3.01 mi (4.84 km)	In	No
NY29	Morris-Jumel Mansion and Jumel Terrace Historic Distric and Roger Morris Historic Park	Manhattan	Urban/Residential/Commercial	Recreational Users; Residential	AGRE - 3.57 mi (5.75 km); NYPA - 3.38 mi (5.43 km)	In	No
NY30	High Bridge Aqueduct and Water Tower	Manhattan	Urban/Residential/Commercial	Recreational Users	AGRE - 3.95 mi (6.36 km); NYPA - 3.77 mi (6.07 km)	In	No

KOP ID	Name	Municipality	SLCA	Viewer Group	KOP Distance to Substation Options	In/Out of Viewshed	Project Visible
NY31	Harbor Waters Park	Manhattan	River Corridor	Recreational Users; Water-based	AGRE - 672 ft (204.8 m); NYPA – 20 ft (6.1 m)	In	Yes; represented by other waterfront views

Note: Gray highlighted cells indicate simulated Key Observation Points.

X.6.2.4 Onshore Visual Simulations

Photographic-quality visual simulations of the New York onshore substation facility sites and HVAC interconnection circuits were developed to communicate the potential for change from existing visual conditions. As detailed in **Section X.3.3**, substation buildings and structures were modeled and simulated at a maximum height of 87 ft (26.5 m) above existing grade and transmission towers at a maximum height of 100 ft (30.5 m) above existing grade for the VIA.

The base case scenarios for the Queens, New York HVAC onshore interconnection circuits evaluated in this SLVIA and as depicted in visual simulations are as follows:

- **Scenario 1**: BW1 comprised of overhead interconnection between AGRE West onshore substation facility and the Astoria West POI; and BW2 comprised of overhead interconnection between AGRE East onshore substation facility and the Astoria East POI.
- **Scenario 2**: BW1 comprised of underground interconnection between NYPA onshore substation facility and Astoria West POI; and BW2 comprised of overhead interconnection between AGRE East onshore substation facility and the Astoria East POI.

The simulations visually account for a limited amount of existing structure demolition that would be required for site preparation and the construction of the AGRE onshore substation facility. Representative onshore substation layouts utilized for the visual simulations are included as **Figure X.6-8** and **Figure X.6-9.** The simulations are included as **Attachment X-5**.

FIGURE X.6-8. BW1 AND BW2 ONSHORE SUBSTATION REPRESENTATIVE LAYOUT – AGRE

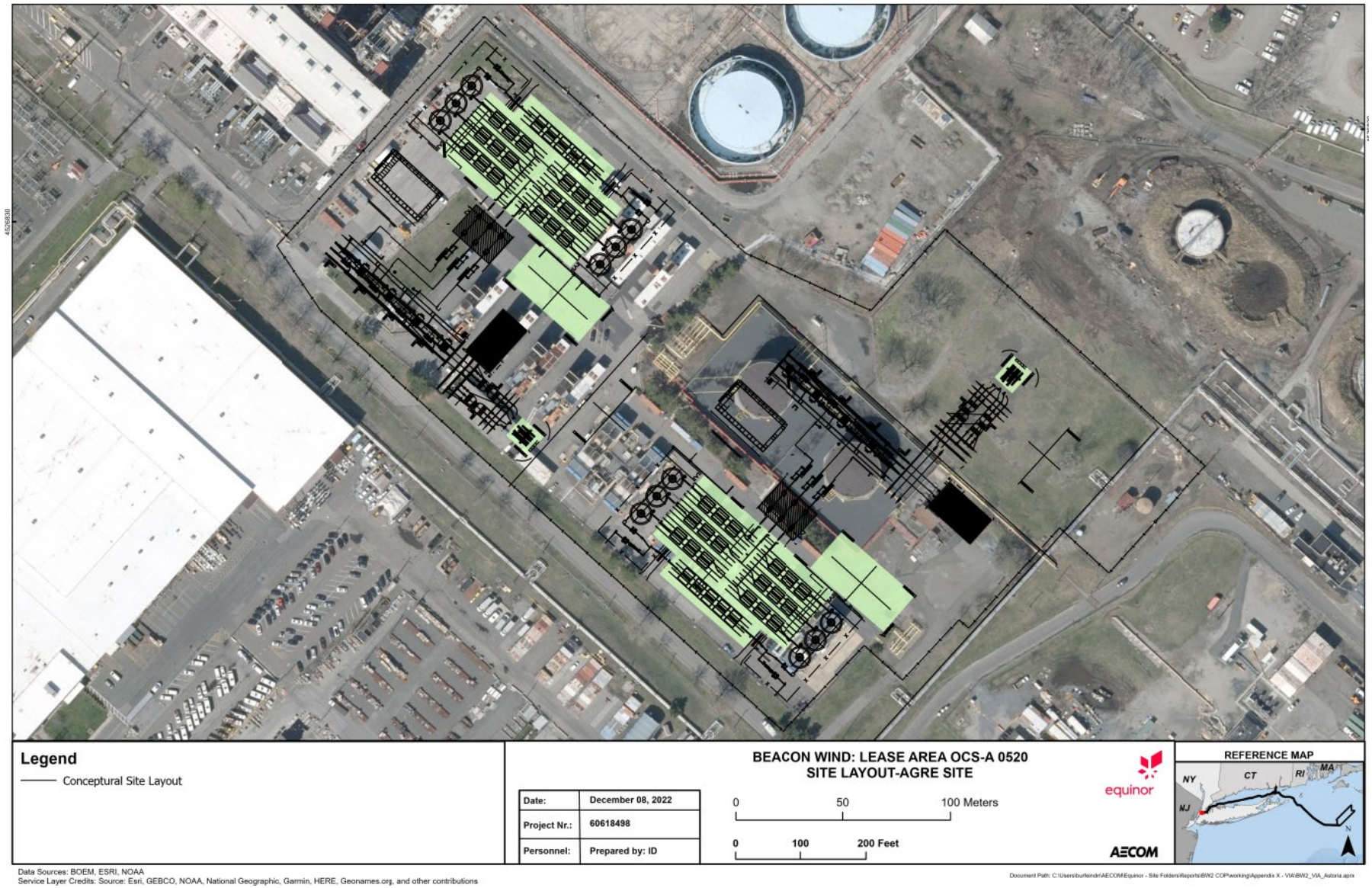
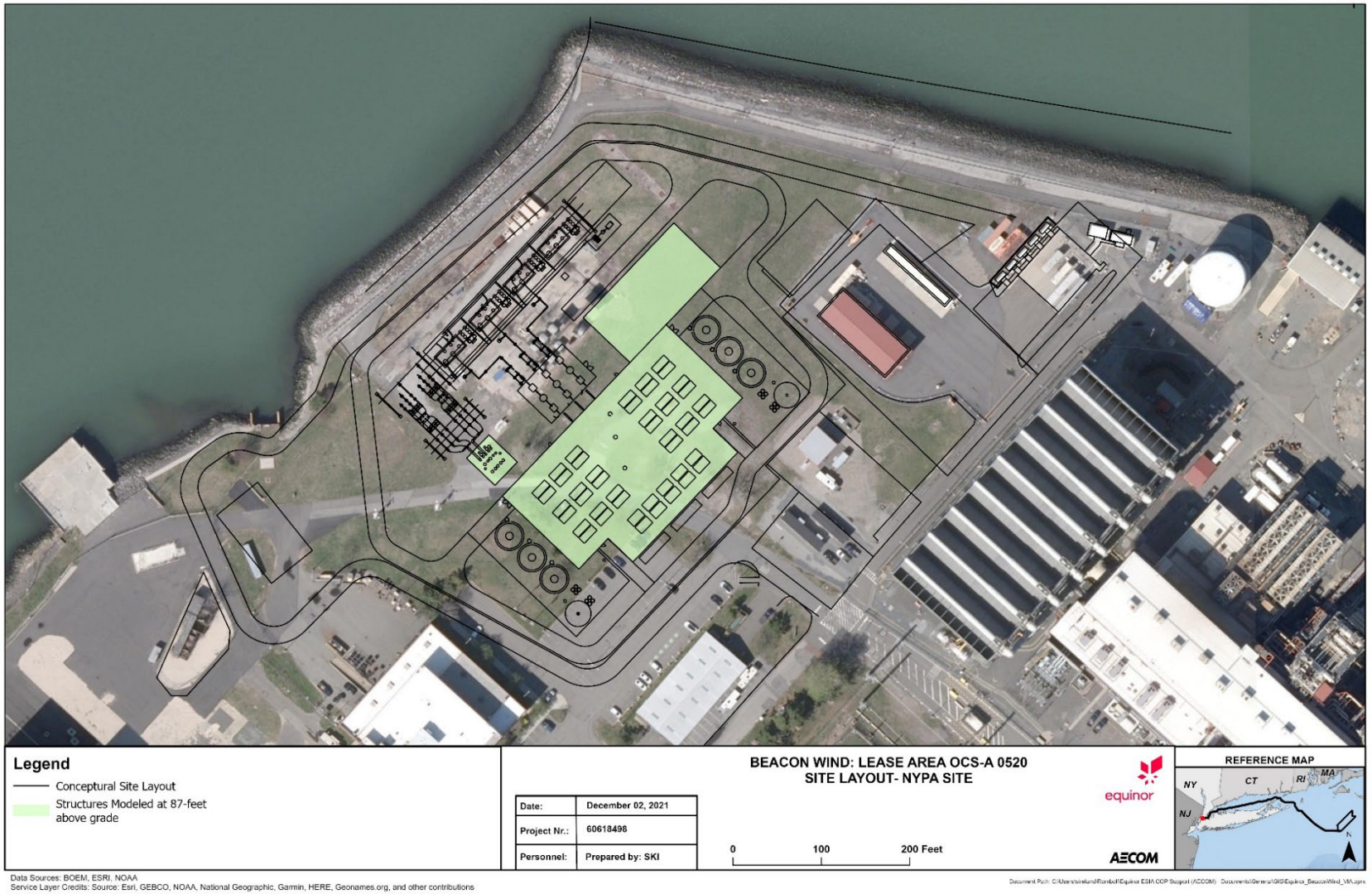


FIGURE X.6-9. BW1 AND BW2 ONSHORE SUBSTATION REPRESENTATIVE LAYOUT – NYPA



X.6.2.5 Onshore Visual Impact Levels

Short-term visual impacts will occur during construction of the onshore substation facility resulting from visual evidence of construction activities and the presence of construction equipment and work crews. Construction activities associated with the onshore export cable and interconnection cable routes will include surveying; clearing the construction site (of either pavement, existing buildings and/or vegetation depending on the site) and linear right-of-way; stockpiling top soil; grading; forming and construction of the buildings and outdoor electrical equipment foundations; placement and erection of buildings and electrical equipment; placement of perimeter security fencing; and restoration and landscaping installation (if required). It is anticipated that contrast will be introduced during Project construction primarily for viewers adjacent to the site and underground export and interconnection cables, where the presence of construction equipment, materials, and crews will be dominant in the foreground . Roads will be restored upon completion of construction. Views of Project construction from areas not immediately adjacent to the onshore substation will be mostly screened by residential, commercial or industrial buildings, vegetation and/or topography. Visual impacts to these viewers will be mostly limited to seeing construction traffic on local roads. Visual impact associated with onshore construction and installation operations, in general, would be minor as construction equipment would only be in use temporarily during the construction and decommissioning periods. The analysis of onshore visual change and visual sensitivity in the sections below is limited to the operational and maintenance phase of the Project.

This section explains how the visual impact levels (major, moderate, minor, or negligible) of recorded impacts are evaluated and the factors considered in identifying the levels. As stated in the sections above, the impact level in the VIA is a function of both the characteristics of the impact and the impact receptor and the key characteristics are referred to as the sensitivity of the receptor and the magnitude of the impact. Sensitivity is broken down into susceptibility and value, while magnitude is broken down into size/scale, geographic extent, and duration and reversibility of impacts. In conformance with the BOEM SLVIA Methodology, professional judgement has been employed to rate each factor and its components on an ordinal scale with three levels.

VIA Rating Forms for each simulated KOP are included as **Attachment X-6**. The rating forms include detailed information for each KOP including: a general description of the KOP; the key characteristics of the KOP; the existing SLCA and visual context; a characterization of the viewers/receptors at the KOP; and receptor sensitivity, impact magnitude, and overall impact ratings for each KOP. More detail on the component receptor sensitivity and impact magnitude analysis and ratings are provided in the sections below.

X.6.2.5.1 VIA Receptor Sensitivity

As noted with respect to the Offshore VIA, the sensitivity of a visual receptor (a person or group of people) is dependent on their susceptibility to change in particular views and also on the value they place on those views. Professional judgements about the predominant viewer groups susceptibility to change and the value of the views from the respective KOPs are both recorded on a scale of *high*, *medium*, or *low*. Those ratings on susceptibility to change and value of the views are combined to determine the overall sensitivity of the visual receptor at each KOP as summarized in **Table X.6-7** below. See **Attachment X-6** for detail on the sensitivity ratings.

AGRE and NYPA are located within an existing power complex that is zoned for heavy manufacturing and is set within the densely developed cityscape of New York City. The land uses within the Onshore APSLVI suggest that most people who will view the onshore substation facilities (i.e., primarily permanent residents, commuters, and recreational users and a limited amount of tourists) will have low susceptibility to change.

A second component of receptor sensitivity is the value viewers place on those views. The value of the views at the KOPs have generally been characterized as low to medium, given the highly developed industrial landscape and low degree of naturalness and/or historical character. Viewers may value the waterfront setting, are aware of the surroundings, and will likely be aware of changes in the visual environment but their attention or interest is unlikely to be focused on the landscape and views and their expectations for scenery in this setting are expected to be low to medium.

This determination of view value was based primarily on these factors:

- Lack of natural or historic character or intactness of the landscape;
- Limited open space, natural, historic, or recreational areas in view proximity; and
- The commercial and industrial character of the development sites.

TABLE X.6-7. QUEENS ONSHORE VIA RECEPTOR SENSITIVITY MATRIX

KOP NUMBER	KOP NAME	VIEWER GROUP	VIEWER SUSCEPTIBILITY RATING	VIEW VALUE RATING	VIEWER SENSITIVITY RATING
NY01	Randall's Island Field 27	Recreational Users	Low	Medium	Low
NY02	Randall's Island Field 31	Recreational Users	Low	Medium	Low
NY03	Barretto Point Park	Recreational Users	Low	Medium	Low
NY04	ICYP Youth Program	Recreational Users	Low	Low	Low
NY05	Ralph Demarco Park	Recreational Users, Transportation	Low	Medium	Low

X.6.2.5.2 VIA Magnitude of Impact

Large-scale changes that introduce new, non-characteristic, discordant, or intrusive elements into the view are likely to be more important than small changes or changes involving features already present within the view. The magnitude of effect expected from the Project is based on the size or scale of the change, the geographic extent of its impacts, and its duration and reversibility.

An evaluation of the size and scale of change and geographic extent of impacts for each KOP is contained in **Attachment X-6**. In following the BOEM SLVIA Methodology, both factors have been recorded on a scale of *large*, *medium*, or *small*. Please note that with respect to the evaluation of visual change in form, line, color, texture, and motion as presented in the VIA Rating Forms included in **Attachment X-6,** a modified BLM Visual Resource Management scale was utilized to score each contrast characteristic at the KOP (see **Table X.6-4**).

The duration of onshore visual impacts is considered long-term given that the Project is assumed to have a Project lifetime of approximately 35 years for the purposes of this SLVIA although some installations and Project components may remain fit for continued service after such time. There is not expected to be any residual visual impacts remaining after decommissioning. Reversibility has been determined to be fully reversible. The assessment of duration and reversibility impacts considered in combination has been determined to be fair given the long-term duration but full reversibility.

X.6.2.5.3 VIA Impact Level (Combining Components, Factors, and Impacts on Multiple KOPs)

The BOEM SLVIA Methodology includes a matrix for combining receptor sensitivity and magnitude of impact ratings to derive an overall VIA impact rating, which is "...recommended but [is] subject to change in consideration of individual project circumstances" and is scored on a scale of *minor*, *moderate*, and *major* (BOEM 2021a). In diverting from the BOEM SLVIA Methodology, Beacon Wind has employed a fourth level rating of *negligible* when it has been determined that the Project will not be readily discernible from the KOP nor alter the view from the KOP in a perceptible way. The overall impact level ratings for the KOPs that were simulated and evaluated and the rationale behind those ratings are presented in **Table X.6-8** below.

TABLE X.6-8. QUEENS, NEW YORK ONSHORE VIA OVERALL IMPACT LEVELS

KOP NUMBER	KOP NAME	OVERALL IMPACT LEVEL	OVERALL IMPACT LEVEL RATIONALE
NY01	Randall's Island Field 27	Scenario 1 – Minor Scenario 2 – Minor	The onshore facilities under both Scenario 1 and Scenario 2 would be discernible without prolonged viewing and could sometimes be noticed by casual observers yet would constitute a localized visual change within a largely unchanged wider context without competing with key elements of the view.
NY02	Randall's Island Field 31	Scenario 1 – Minor Scenario 2 – Minor	The onshore facilities under both Scenario 1 and Scenario 2 would be discernible without prolonged viewing and could sometimes be noticed by casual observers yet would constitute a localized visual change within a largely unchanged wider context without competing with key elements of the view.
NY03	Barretto Point Park	Scenario 1 – Minor Scenario 2 – Minor	The onshore facilities under both Scenario 1 and Scenario 2 would be discernible without prolonged viewing and could sometimes be noticed by casual observers yet would constitute a localized visual change within a largely unchanged wider context without competing with key elements of the view.
NY04	ICYP Youth Program	Scenario 1 – Negligible Scenario 2 – Negligible	The onshore facilities under both Scenario 1 and Scenario 2 would be screened by intervening buildings and vegetation and would therefore have no visual impacts at this KOP.
NY05	Ralph Demarco Park	Scenario 1 – Negligible Scenario 2 – Negligible	The onshore facilities under both Scenario 1 and Scenario 2 would be screened by intervening buildings and would therefore have no visual impacts at this KOP.

X.6.3 BW2 Onshore VIA – Waterford, Connecticut

X.6.3.1 BW2 Onshore Project Area Description – Waterford, Connecticut

The Waterford power complex in Waterford, Connecticut is zoned by the Planning and Zoning Commission of the Town of Waterford as an I-G (General Industrial District), which permits the use of buildings/structures associated with the generation, transmission, or distribution of public electricity. The preference was to locate the onshore substation facility within or immediately adjacent to the existing POI, if possible. This preference would also minimize additional disturbance for installation of the onshore interconnection cables between the onshore substation facility and the existing POI and would maintain consistency with existing land uses and landscape character in the vicinity.

The Connecticut Onshore APSLVI evaluated in this assessment extends up north to the Niantic River and the intersection of Route I-95 and Connecticut Route 85, the Rocky Neck State Park in the Town of East Lyme to the west, the western coastline of Thames River to the east, and Long Island Sound, to the south. The existing Dominion Millstone Power Station on Millstone Point blocks portions of the direct southerly view from the ocean. On land, views are constrained along the coastline due to intervening buildings and structures, vegetation, and topography. The APSLVI comprises many parks/developed recreation areas, water views, forests/woodlands, and residential areas.

The Connecticut Onshore APSLVI indicates that views of the onshore substation facility would be substantially constrained by topography and woodland cover, and limited to the Niantic Bay, Jordan Cove, and the beaches and walkways along the coastline of these water bodies. Most views from locations inland would be restricted by a combination of intervening topography, vegetation, and built structures.

X.6.3.2 BW2 Onshore Visual Impact Receptor Identification

Receptors and viewers are the people who interface with the Project and experience its impacts. Understanding the characteristics of viewers is important because the project's impacts on the viewer experience and the viewer response to these effects contribute to the visual impact.

In general, the types of viewers and viewer groups present within the Connecticut Onshore APSLVI are classified as residents, tourists, recreational users, water-based users, and transportation-based users (rail and roadway). The following discussion summarizes these groups that are relevant to the VIA.

X.6.3.2.1 Residential Receptors

Residential development is located to the east, west, and north of the Connecticut Onshore APSLVI. Neighborhoods to the north and west of the onshore substation facility site would be the closest to the development, in the neighborhood off Millstone Road West and the Millstone Point Residential Association. Properties are generally 1- or 2-story single family homes. The intensity of residential development ranges from a medium- to high-density along straight and curving streets.

Further east across Jordan Pond lies a residential neighborhood in the vicinity of Pleasure Beach. Across Niantic Bay to the west lies more residential neighborhoods in the vicinity of McCook's Beach, and to the southwest is the private Black Point beach Club residential association. These homes are also established in a medium- to high-density manner. Most properties have a small to medium sized grassy lawn with sparse trees between the residential properties, but dense woodlands on the

perimeters of the neighborhoods. With the exception of ocean-facing residential properties on the streets parallel and adjacent to the coastline, the majority of the residential homes do not have visibility of the proposed substation facility on Millstone Point.

X.6.3.2.2 Tourists and Recreational Receptors

This Connecticut Onshore APSLVI contains a high number of parks and recreation areas, which provide open space for residents. In order to keep the assessment proportionate, only those parks which are in proximity to the onshore substation facility site, that are likely to be used by tourists as well as residents, and which have theoretical visibility of the onshore substation facility site, have been considered. These are listed below:

- Crescent Park – located 1.85 mi (2.98 km) to the west of the proposed Project site across Niantic Bay, Crescent Park comprises a 0.17 mi (0.27 km) stone dust path on top of a bluff overlooking Niantic Bay. Both the northern and southern ends of the walkway terminate at Crescent Beach. On-street parking is available, where permitted, on Crescent Avenue near its intersection with Carpenter Avenue.
- McCook Point Park – located 1.73 mi (2.78 km) to the west of the proposed Project site, McCook Point Park comprises a public sandy beach, a walkway atop a bluff, a grassy recreation area with some trees and picnic benches. Parking is available on site.

Other parks that are located within the Connecticut Onshore ZTV but that are not visible according to the APSLVI include Cini Memorial Park, Seaside Sanitorium Connecticut State Park, Little League Fields South, Spera Field, Hoskins Park, and Veterans Memorial Field.

X.6.3.2.3 Water-Based Receptors

Swimming, kayaking, sailing, and boating are popular recreational water-based activities in the Niantic Bay, Jordan Cove, and the Long Island Sound. Views from the water are exposed but bound by industrial waterfront developments and tree lines.

X.6.3.2.4 Transportation-Based Receptors

The proposed Connecticut onshore substation facility is somewhat isolated from adjacent roadways due to its positioning within the Waterford power complex; however, the Amtrak Northeast Corridor passenger rail line passes directly north of the site (see **Figure X.6-10**). Receptors driving along coastal roads and passengers on the rail line will experience the landscape differently than that of static observers. Additionally, factors such as the configuration of seating, speed and direction of travel further distinguish the experiences of observers utilizing transportation within the Project's Onshore APSLVI.

Roads

Those roads which are likely to have actual views of the proposed Connecticut onshore substation facility are located to the west and northwest of the site. These include:

- Route 156 - Route 156 is a Connecticut state highway that runs from East Haddam to Waterford. The Route runs parallel to the Niantic Boardwalk and the Amtrak Rail line as it borders the Niantic Bay, then elevates into a bridge to cross the Niantic River. As the Route runs along the Niantic Bay. There are potential views towards to proposed Project site.

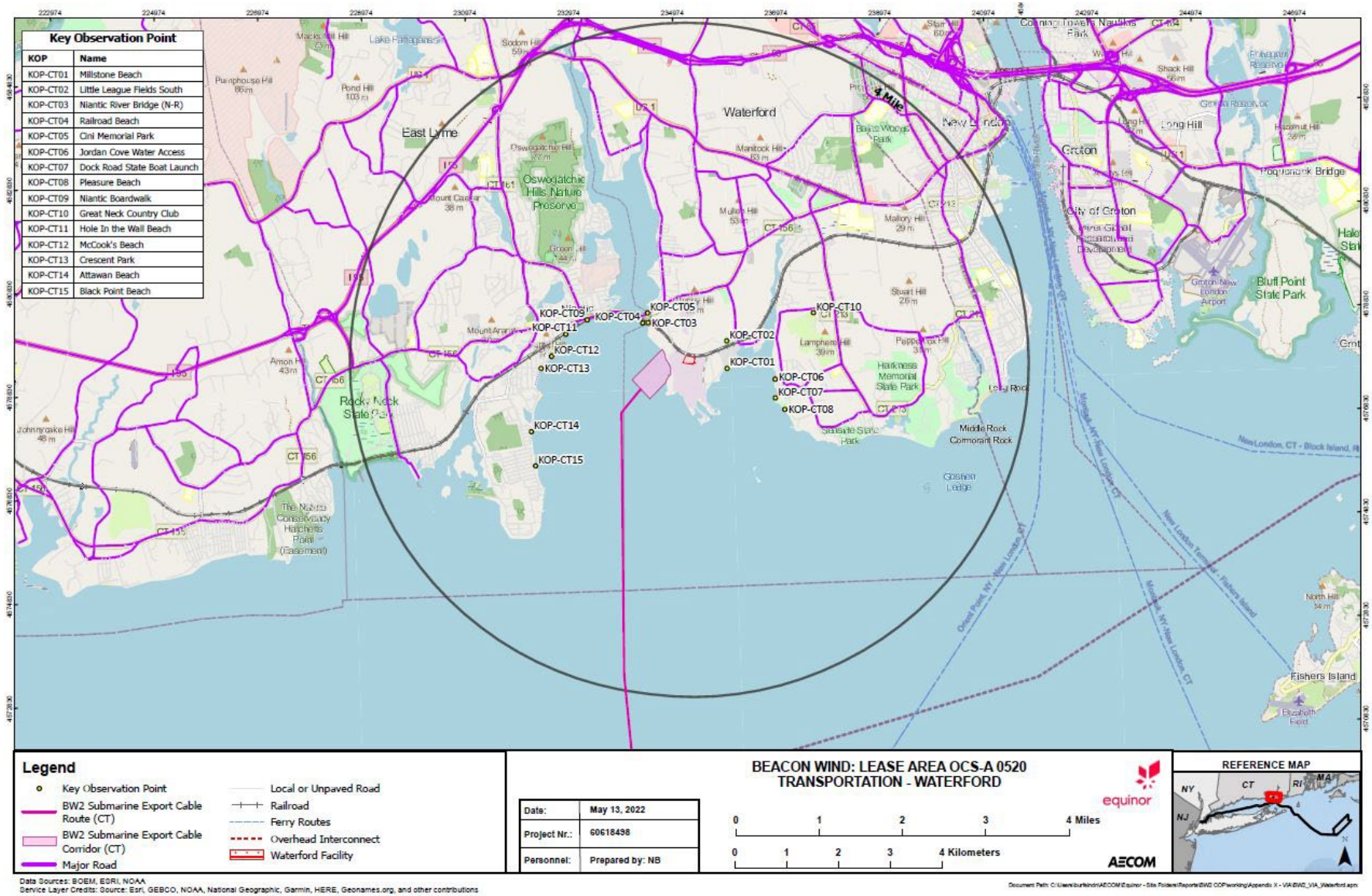
- Attawan Avenue - a residential roadway that runs north to south along the coastline and is directly adjacent to Attawan Beach where views of the proposed Project site are likely visible.

The roads located inland from the coastal areas which provide access to residential properties, commercial areas, recreational facilities, and schools, are considered unlikely to have views to the onshore substation facility site due to the screening effect of intervening buildings and vegetation.

Rail

An Amtrak Northeast railway line that runs directly north of the site will likely provide views to the onshore substation facility site. Train passengers may also have views from the rail line as it passes along the Niantic Bay coastline, adjacent to the Niantic Boardwalk and Route 156. The railway is separated from the onshore substation facility site by a tree-covered elevated berm which provides substantial visual screening.

FIGURE X.6-10. BW2 ONSHORE TRANSPORTATION-BASED RECEPTORS (CONNECTICUT)



X.6.3.2.5 Historical Importance

The Connecticut HRVEA Onshore PAPE is limited to 0.5 mi (0.8 km) (see COP **Appendix W Historic Resources Visual Effects Assessment**). One NRHP-eligible property, the Niantic River Bridge, is located within the HRVEA Onshore PAPE.

As with properties in the Connecticut HRVEA Offshore PAPE, the assessment of visual impacts on properties in the HRVEA Onshore PAPEs focused on whether there would be changes that would affect their integrity of setting, feeling, and association. Based on field assessments, the Niantic River Bridge does not have a view of the Project. As such, the addition of the Project would not alter any characteristics of this property.

X.6.3.3 Selection of Onshore KOPs

The Connecticut Onshore APSLVI indicates that views of the onshore substation facility site are mostly constrained to the coastline and within the Marine Bays and some scattered inland areas due to the screening effects of built forms and vegetation. The results of the viewshed analysis, as represented graphically in the APSLVI, were verified via field reconnaissance, and viewpoints eliminated (where warranted) that were determined unlikely to have visibility of the project area and to add viewpoints where imperfections in the viewshed analysis incorrectly resulted in a finding that the project or activity would not be visible.

A total of 15 potential Connecticut Onshore KOPs were identified for further evaluation. The KOPs evaluated are summarized in **Figure X.6-11** and **Table X.6-9** below. KOP locations were confined to publicly accessible locations and therefore do not reflect visibility from private dwellings or private buildings. A subset of seven of the 15 KOPs were selected for visual simulations and full analysis in the impact assessment that follows. The KOPs selected for simulations are intended to represent a number of different viewer types, locations where the view is valued, and locations that were most likely to have visibility of the onshore substation facilities. The selected KOPs are located in different directions with respect to the onshore substation facilities and at different elevations.

Views from boats departing into and arriving from the Niantic Bay are represented by the land-based KOP at Railroad Beach (KOP-CT04), which affords a view from a jetty just west of the Niantic River Bridge underpass toward the onshore substation facility site. The locations of Connecticut Onshore KOPs are presented in **Figure X.6-11**. **Table X.6-9** below summarizes these KOPs.

FIGURE X.6-11. BW2 ONSHORE KOPS (CONNECTICUT)

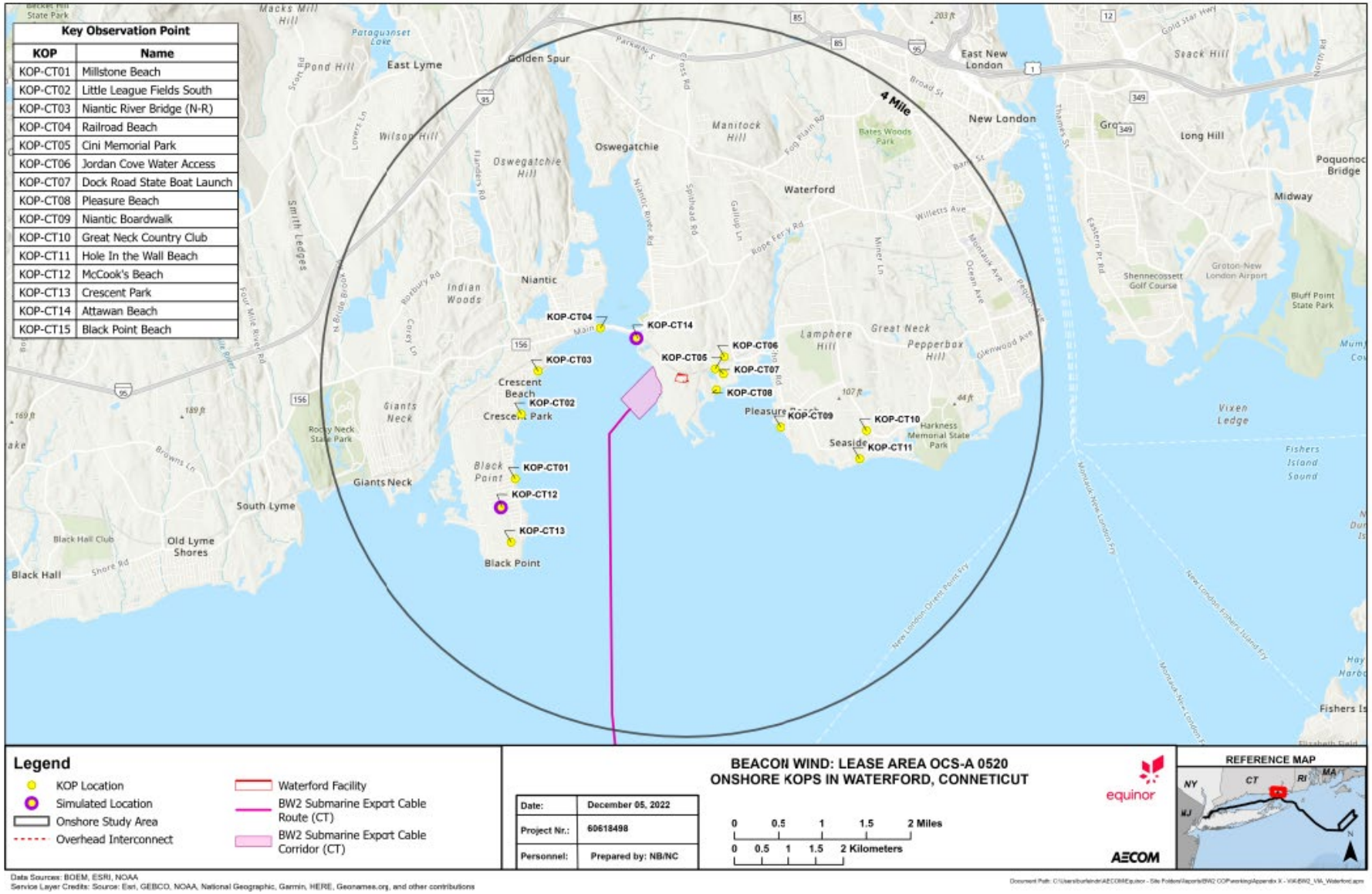


TABLE X.6-9. BW2 CONNECTICUT ONSHORE KOPS

KOP ID	Name	Municipality	SLCA	Viewer Group	Distance to Substation (mi)	Distance to Substation (km)	In/Out of Viewshed	Project Visible
CT01	Millstone Beach	Waterford	Ocean Beach, Parks/Developed Recreation	Recreational Users	0.27	0.44	Out	No; screened by vegetation
CT02	Little League Fields South	Waterford	Parks/Developed Recreation	Recreational	0.36	0.58	Out	Yes
CT03	Niantic River Bridge (NR DOE)	East Lyme	Parks/Developed Recreation	Transportation-Based	0.74	1.19	In	Cannot be confirmed/no access to bridge
CT04	Railroad Beach	East Lyme	Ocean Beach	Recreational Users, Tourists, Water-Based, Transportation-Based	0.79	1.26	In	No; screened by vegetation
CT05	Cini Memorial Park	East Lyme	Parks/Developed Recreation	Recreational Users, Tourists	0.82	1.32	Out	No; screened by vegetation and built structures
CT06	Jordan Cove Water Access	East Lyme	Parks/Developed Recreation	Recreational Users	0.86	1.39	In	No; screened by topography and vegetation
CT07	Dock Road State Boat Launch	Waterford	Parks/Developed Recreation	Recreational Users	0.93	1.50	In	No; screened by topography and vegetation
CT08	Pleasure Beach	Waterford	Parks/Developed Recreation	Recreational Users	1.08	1.74	In	No; screened by topography and vegetation
CT09	Niantic Boardwalk	East Lyme	Parks/Developed Recreation	Recreational Users, Tourists	1.40	2.25	In	Yes
CT10	Great Neck Country Club	Waterford	Parks/Developed Recreation	Recreational Users, Transportation-Based	1.43	2.30	In	No; screened by vegetation

KOP ID	Name	Municipality	SLCA	Viewer Group	Distance to Substation (mi)	Distance to Substation (km)	In/Out of Viewshed	Project Visible
CT11	Hole in the Wall Beach	East Lyme	Ocean Beach	Recreational Users, Tourists	1.61	2.60	In	Yes
CT12	McCook's Beach	East Lyme	Ocean Beach	Recreational Users, Tourists	1.73	2.78	In	Yes
CT13	Crescent Park	East Lyme	Parks/Developed Recreation	Recreational Users, Tourists	1.85	2.98	In	Yes
CT14	Attawan Beach	East Lyme	Ocean Beach	Residents, Recreational Users	2.16	3.47	In	Yes
CT15	Black Point Beach	East Lyme	Ocean Beach	Residents, Recreational Users	2.25	3.62	In	Yes

Note: Shaded rows indicate KOPs that have been chosen for simulation and further analysis.

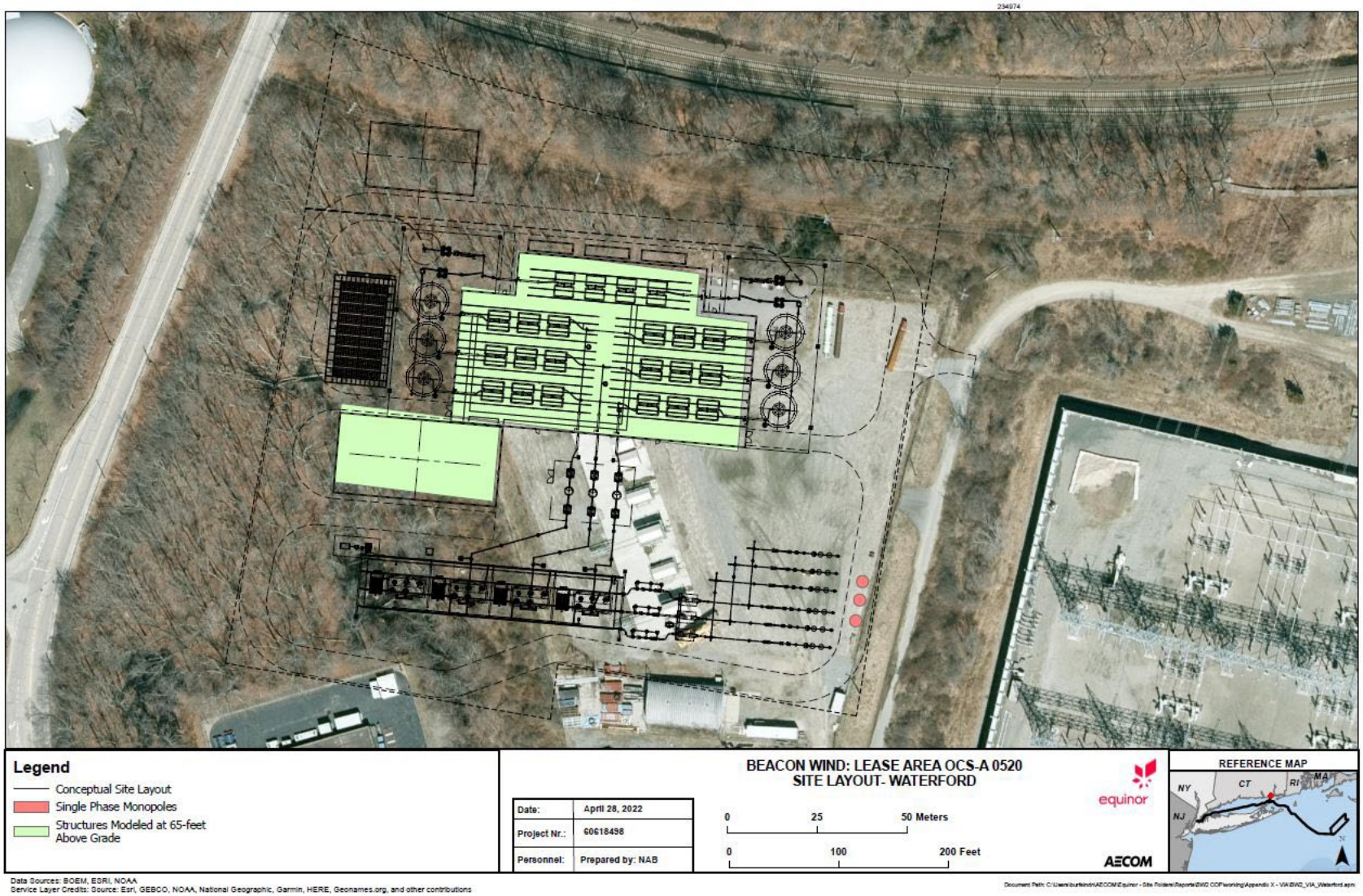
X.6.3.4 Onshore Visual Simulations

Photographic-quality visual simulations of the Connecticut onshore substation facility site were developed to communicate the potential for change from existing visual conditions. For the purposes of this analysis, substation buildings and structures were modeled at a maximum height of 80 ft (24.4 m) above grade. The simulations visually account for a limited amount of tree removal that will be required for site preparation and the construction of the Connecticut onshore substation facility. Representative onshore substation layouts utilized for the visual simulations are included as **Figure X.6-12**. The simulations are included as **Attachment X-7**. Several of the KOPs that were evaluated and photographed were not chosen to be simulated due to their geographic proximity to, and/or having similar context and landscape characteristics as the simulated KOPs. **Table X.6-10** below depicts simulated KOPs that are representative of those KOPs that were not simulated.

TABLE X.6-10. BW2 ONSHORE REPRESENTATIVE SIMULATIONS

KOPS		KOP THE SIM REPRESENTS	
KOP NUMBER	KOP NAME	KOP NUMBER	KOP NAME
CT02	Little League Fields South	CT01	Millstone Beach
CT04	Railroad Beach	CT03 CT05	Niantic River Bridge Cini Memorial Park
CT07	Dock Road State Boat Launch	CT06 CT07	Jordan Cove Water Access Pleasure Beach
CT09	Niantic Boardwalk	CT11	Hole in the Wall Beach
CT10	Great Neck Country Club	N/A	N/A
CT12	McCook's Beach	CT11 CT13	Hole in the Wall Beach Crescent Park
CT14	Attawan beach	CT15	Attawan Beach

FIGURE X.6-12. BW2 ONSHORE SUBSTATION REPRESENTATIVE LAYOUT



X.6.3.5 BW2 Onshore Visual Impact Levels

Short-term visual impacts will occur during construction of the Connecticut onshore substation facility resulting from visual evidence of construction activities and the presence of construction equipment and work crews. Construction activities associated with the onshore export cable and interconnection cable routes will include surveying; clearing the construction site (of either pavement, existing buildings and/or vegetation depending on the site) and linear right-of-way; stockpiling soils; grading; forming and construction of the buildings and outdoor electrical equipment foundations; placement and erection of buildings and electrical equipment; placement of perimeter security fencing; and restoration and landscaping installation (if required). It is anticipated that visual impacts will be introduced during Project construction primarily for viewers adjacent to the site and underground export and interconnection cables, where the presence of construction equipment, materials, and crews will be dominant in the foreground. The onshore export and interconnection cables will be installed underground primarily within existing roadways present within Millstone Point. Roads will be restored upon completion of construction. Views of Project construction from areas not immediately adjacent to the onshore substation facility will be mostly screened by residential, commercial or industrial buildings, vegetation and/or topography. Visual impact associated with onshore construction and installation operations, in general, would be minor as construction equipment would only be in use temporarily during the construction and decommissioning periods. The analysis of onshore visual impacts and visual sensitivity in the sections below is limited to the operational and maintenance phase of the Project.

This section explains how the visual impact levels (major, moderate, minor, or negligible) of recorded impacts are evaluated and the factors considered in identifying the levels. As stated in the sections above, the impact level in the VIA is a function of both the characteristics of the impact and the impact receptor and the key characteristics are referred to as the sensitivity of the receptor and the magnitude of the impact. Sensitivity is broken down into susceptibility and value, while magnitude is broken down into size/scale, geographic extent, and duration and reversibility of impacts. In conformance with the BOEM SLVIA Methodology, professional judgement has been employed to rate each factor and its components on an ordinal scale with three levels.

VIA Rating Forms for each simulated KOP are included as **Attachment X-8**. The rating forms include detailed information for each KOP including: a general description of the KOP; the key characteristics of the KOP; the existing SLCA and visual context; a characterization of the viewers/receptors at the KOP; and receptor sensitivity, impact magnitude, and overall impact ratings for each KOP. More detail on the component receptor sensitivity and impact magnitude analysis and ratings are provided in the sections below.

X.6.3.5.1 VIA Receptor Sensitivity

As noted with respect to the Offshore VIA and BW1 and BW2 Onshore VIA for Astoria, New York, the sensitivity of a visual receptor (a person or group of people) is dependent on their susceptibility to change in particular views and also on the value they place on those views. Professional judgements about the predominant viewer groups susceptibility to change and the value of the views from the respective KOPs are both recorded on a scale of *high*, *medium*, or *low*. Those ratings on susceptibility to change and value of the views are combined to determine the overall sensitivity of the visual receptor at each KOP as summarized in **Table X.6-11** below. See **Attachment X-8** for detail on the sensitivity ratings.

TABLE X.6-11. BW2 ONSHORE VIA RECEPTOR SENSITIVITY MATRIX

KOP NUMBER	KOP NAME	VIEWER GROUP	VIEWER SUSCEPTIBILITY RATING	VIEW VALUE RATING	VIEWER SENSITIVITY RATING
CT02	Little League Fields South	Recreational Users	Low	Medium	Low
CT04	Railroad Beach	Recreational Users, Tourists, Water-Based, Transportation-Based	Medium	High	High
CT07	Dock Road State Boat Launch	Recreational Users	Medium	High	High
CT09	Niantic Boardwalk	Recreational Users, Tourists	High	High	High
CT10	Great Neck Country Club	Recreational Users, Transportation-Based	Medium	Medium	Medium
CT12	McCook's Beach	Recreational Users, Tourists	High	High	High
CT14	Attawan Beach	Recreational Users, Residents	High	High	High

X.6.3.5.2 VIA Magnitude of Impact

Large-scale changes that introduce new, non-characteristic, discordant, or intrusive elements into the view are likely to be more important than small changes or changes involving features already present within the view. The magnitude of effect expected from the Project is based on the size or scale of the change, the geographic extent of its impacts, and its duration and reversibility.

An evaluation of the size and scale of change and geographic extent of impacts for each KOP is contained in **Attachment X-8.** In following the BOEM SLVIA Methodology, both factors have been recorded on a scale of *large*, *medium*, or *small*. Please note that with respect to the evaluation of visual change in form, line, color, texture, and motion as presented in the VIA Rating Forms included in **Attachment X-8,** a modified BLM Visual Resource Management scale was utilized to score each contrast characteristic at the KOP (see **Table X.6-4**).

The duration of onshore visual impacts is considered long-term given that the Project is assumed to have a Project lifetime of approximately 35 years for the purposes of this SLVIA although some installations and Project components may remain fit for continued service after such time. There is not expected to be any residual visual impacts remaining after decommissioning. Reversibility has been determined to be fully reversible. The assessment of duration and reversibility impacts considered in combination has been determined to be fair given the long-term duration but full reversibility.

X.6.3.5.3 VIA Impact Level (Combining Components, Factors, and Impacts on Multiple KOPs)

The BOEM SLVIA Methodology includes a matrix for combining receptor sensitivity and magnitude of impact ratings to derive an overall VIA impact rating, which is "...recommended but [is] subject to change in consideration of individual project circumstances" and is scored on a scale of *minor*, *moderate*, and *major* (BOEM 2021a). In diverting from the BOEM SLVIA Methodology, Beacon Wind has employed a fourth level rating of *negligible* when it has been determined that the Project will not be visually discernible from the KOP nor alter the view from the KOP in a perceptible way. The overall impact level ratings for the KOPs that were simulated and evaluated and the rationale behind those ratings are presented in **Table X.6-12** below.

TABLE X.6-12. WATERFORD ONSHORE VIA OVERALL IMPACT LEVELS

KOP NUMBER	KOP NAME	OVERALL IMPACT LEVEL	OVERALL IMPACT LEVEL RATIONALE
CT02	Little League Fields South	Negligible	The lack of magnitude of the substation from this KOP establishes a negligible impact to the low-sensitive receptors at this KOP as they are not focused on views towards the Project and instead on recreating. The Project would not be discernible or present any apparent change to the view.
CT04	Railroad Beach	Negligible	Although the receptors at this KOP are highly sensitive, the Project would be entirely screened, therefore, have no impact to the receptor.
CT07	Dock Road State Boat Launch	Negligible	Although the receptors at this KOP are highly sensitive, the Project would be entirely screened, therefore, have no impact to the receptor.
CT09	Niantic Boardwalk	Minor	The proposed Project would form a discernible new feature with a relatively small magnitude on the skyline in the background of the view from this KOP location. The substation building would extend the influence of power related structures along the side of the bay but would not compete with visual elements at the KOP location to any great extent, even considering the highly sensitive receptors.
CT10	Great Neck Country Club	Negligible	Although the receptors at this KOP are moderately sensitive, the Project would be entirely screened, therefore, have no impact to the receptor.
CT12	McCook's Beach	Minor	The proposed Project would form a discernible new feature with a relatively small magnitude on the skyline in the background of the view and would be seen relatively distantly, representing a minor localized change to the view at this KOP. The substation building would extend the influence of power related structures along the side of the bay but would not compete with visual elements at the KOP location to any great extent, even considering the highly sensitive receptors.
CT14	Attawan Beach	Minor	The proposed Project would form a discernible new feature with a relatively small magnitude on the skyline in the background of the view and would be seen relatively distantly, representing a minor localized change to the view at this KOP. The substation building would extend the influence of power related structures along the side of the bay but would not compete with visual elements at the KOP location to any great extent, even considering the highly sensitive receptors.

X.7 Effects of Reasonably Foreseeable Planned Actions

The Beacon Wind Project is in one of ten offshore wind energy lease areas in the MA/RI WEA. BOEM does not require an assessment of RFPA for the COP but provides guidance on what materials are needed to assist BOEM in the decision-making on the impacts from RFPA within the NEPA process.

As detailed in the BOEM SLVIA Methodology (BOEM 2021a), NEPA requires that projects be considered within the context of RFPA effects. As of this writing, two nearby offshore wind projects located in the MA/RI WEA, have been approved for development. Six other projects are in various stages of design or review within the vicinity of Beacon Wind. Ultimately, more than one project will likely be in view from some or all of the KOPs considered in this VIA. In some cases, wind turbines from one project may "hide" fully or partially the wind turbines from another project.

Future offshore wind projects and infrastructure that have been described in a COP and which a BOEM review of the COP under NEPA has resulted in a ROD being issued, would be considered under the RFPA analysis by BOEM for the Project. This concept is particularly important for Beacon Wind, which is in the MA/RI WEA and is an area of strategic development for large scale offshore wind farms. At this time, Vineyard Wind 1 and South Fork Wind are the only offshore wind energy projects in the MA/RI WEA to have received a ROD. Given the position of this Project relative to other wind energy projects in the MA/RI WEA to the west and east, it is reasonable to assume that the Project's wind energy array will be viewed within the context of these adjacent projects.

Construction of other offshore wind farms will create a shift in the character of the Ocean OCA in the context of the chosen KOPs and, therefore, offshore wind development is anticipated to become a key characteristic of the seascape environment. The development of offshore wind farms in combination with Beacon Wind will add large scale vertical elements evenly spaced along a visually prominent horizontal line that will create a strong visual contrast in form (the towers), line (interrupting the natural horizon line where sky meets sea), color (variations in wind turbine color against a changing backdrop), and compounded by blade movement (texture), and night safety lighting (color). Complexity will be added to the simplicity of the current ocean character.

X.8 Mitigation

X.8.1 Offshore

Mitigation is a requirement of the BOEM SLVIA for the purpose of offsetting potential visual impacts. There are some factors that may be somewhat mitigated by reducing visual contrast or visibility of the offshore facilities. These include turbine color and a night lighting system consistent with FAA requirements.

Some Project elements may not allow for mitigation measures. These include blade motion and the positions of the turbines within a 1x1 nm (1.9x1.9 km) grid agreed to across the MA/RI WEA lease areas. While the size and scale of the turbines could be reduced, doing so would potentially reduce power generation and may make the Project economically inviable.

Beacon Wind will utilize wind turbines and towers that fall within the BOEM-recommended paint color range of no lighter than RAL 9010 Pure White and no darker than RAL 7035 Light Grey (BOEM, 2021b). The wind turbines and towers have been simulated in RAL 9010 Pure White which was the basis for the evaluation of visual impacts as described in **Section X.6.1** above. The RAL 9010 color

treatment is considered a conservative worst-case scenario with respect to visual contrast and has been utilized in the VIA to provide flexibility for final selection of a wind turbine supplier for the Project.

Beacon Wind will work with the selected wind turbine supplier to evaluate the use of an alternate color no darker than RAL 7035 Light Grey to potentially reduce the level of visual contrast, to the extent practicable. The selection of RAL 7035 Light Grey will better reduce visual contrast by balancing the turbines within the surroundings (average day), reducing reflectivity, and improving the blending into the typical colors of its setting. This approach for color selection will not hide the feature but will lower visual contrast. The offshore substation will appear as small, gray blocks on the horizon, lower than the hub heights of the wind turbines and, therefore, likely resulting in weak contrast or will not be noticeable or perceived from coastal vantage points.

Current BOEM requirements follow FAA guidelines that require flashing red lights positioned on the turbines. Beacon Wind is considering the use of agency-approved ADLS, or similar system, to turn the aviation obstruction lights on and off in response to detection of a nearby aircraft and is actively completing an evaluation to determine the impacts of the implementation of this system. This commitment as a mitigation is subject to final Project evaluation and agency approval. ADLS lighting will avoid extending visual impacts into twilight and nighttime hours and substantially reduce visual impacts (BOEM, 2021b).

ADLS is discussed in greater detail in **COP Appendix Y Aircraft Detection Lighting System Efficacy Analysis**. Based on flight data presented in COP **Appendix Y Aircraft Detection Lighting System Efficacy Analysis**, and shown in **Table X.8-1** below, the activation of warning lights would occur approximately 2 hours 42 minutes and 9 seconds over a one-year period. The maximum monthly activation would occur in November where warning lights are expected to be activated for approximately 2 hours, 4 minutes and 59 seconds, or 0.46 percent of the month. Considering the local sunrise and sunset times, an ADLS-controlled obstruction lighting system could result in over a 99 percent reduction in system activated duration as compared to a traditional always-on obstruction lighting system. Given the low frequency of expected monthly activations, nighttime visual impacts will be limited.

TABLE X.8-1. LIGHT SYSTEM ACTIVATION DURATION

Month	Nighttime Observed (HHH:MM:SS)	Light System Activated Duration (HH:MM:SS)	Percentage
January	477:36:30	00:08:41	0.03%
February	402:45:09	00:00:00	0.00%
March	405:38:58	00:00:37	0.00%
April	351:48:08	00:06:34	0.03%
May	327:43:01	00:00:08	0.00%
June	299:29:15	00:00:05	0.00%
July	318:25:47	00:05:29	0.03%
August	349:39:19	00:10:03	0.05%
September	377:19:14	00:01:03	0.00%
October	431:44:04	00:01:17	0.00%

Month	Nighttime Observed (HHH:MM:SS)	Light System Activated Duration (HH:MM:SS)	Percentage
November	453:26:20	02:04:59	0.46%
December	487:49:24	00:03:13	0.01%
Total	**4683:25:09**	**02:42:09**	**0.06%**

Notes:
^Based on 2019 flight data.

X.8.2 Onshore – Queens, New York

Development of the BW1 and/or the BW2 onshore substation facilities at the Astoria power complex requires the construction of building/structures associated with the generation, transmission, and distribution of electricity. Given the size of many of these structures, the visual landscape of the surrounding area could potentially be affected. However, based on the assessments described in this VIA, minimal impacts to nearby visual resources are likely to occur. Both landfall and onshore substation sites under consideration are located in an area already defined by energy infrastructure and dense urban development. Although the onshore substation facility structures would be visible from several sensitive SLCAs and views, the existing industrial and energy production land uses and power generation and transmission infrastructure mean that the proposed onshore substation facilities would not significantly change the seascape/landscape character or visual amenity of the area. Consequently, efforts to mitigate the appearance of the Project would focus upon:

- The layout and design of substation elements, with the emphasis on keeping the scale, and form of structures on site to a level consistent with existing industrial and power station structures nearby; and
- The rendering of structures in a color that reflects existing colors present nearby, and which minimizes visual contrast with existing structures.

Beacon Wind will work with the New York City land use authorities and original equipment manufacturers on the layout and design of substation elements and rendering of structures in a color that are acceptable with respect to the substantive provisions of applicable New York City zoning and building codes.

X.8.3 Onshore - Waterford, Connecticut

Development of the onshore substation facility in Waterford, Connecticut requires the construction of building/structures associated with the generation, transmission, and distribution of electricity. Given the size of many of these structures, the visual landscape of the surrounding area could potentially be affected. However, based on the assessments described in this VIA, minimal impacts to nearby visual resources are likely to occur. The landfall site under consideration is located in an area already defined by general industrial and suburban development. Although the substation structures would be visible from several sensitive receptor locations, the existing industrial and power generation land uses mean that the proposed substation would not significantly change the seascape/landscape character or visual amenity of the area. Consequently, efforts to mitigate the appearance of the Project would focus upon:

- The layout and design of substation elements, with the emphasis on keeping the scale, and form of structures on site to a level consistent with existing industrial and power station structures nearby; and
- The rendering of structures in a color that reflects existing colors present nearby, and which minimizes visual contrast with existing structures.

Beacon Wind will work with the Town of Waterford and original equipment manufacturers on the layout and design of substation elements and rendering of structures in a color that is acceptable with respect to municipal land use approvals and applicable zoning and building codes.

X.9 References

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X.10 Glossary of Terms

Affected Environment: As defined by NEPA, this is the "environment of the area(s) to be affected or created by the alternatives under consideration" (40 CFR 1502.15).

Area of Seascape, Landscape and Visual Effect (ASLVE): The area in which views of the project would be visible as influenced by the presence or absence of intervening topography, vegetation, and structures.

Background: The zone that extends from 3-5 mi (4.8-8.1 km) to infinity miles away from the viewer.

Baseline Conditions: Existing conditions of the affected environment, affected population, and existing seascape, landscape and visual quality.

Baseline Studies: Work done to determine and describe the environmental conditions against which and future changes can be measured or predicted and assessed.

Characteristics: Elements, or combinations of elements, which contribute to distinctive landscape character.

Color: The light reflecting off of an object at a particular wavelength that creates hue (green, indigo, purple, red, etc.) and value (light to dark hues). (U.S. Bureau of Land Management 1980:15; Federal Highway Administration 1988:40).

Compensation: Measures devised co offset or compensate for residual adverse effects which cannot be prevented/avoided or further reduced.

Cumulative Impacts: Impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. (Sec. 1508.7)

Designated landscape: Areas of landscape identified as being of importance at international, national or local levels, either defined by statute or identified in develop-ment plans or other documents.

Development: Any proposal that results in a change to the seascape, landscape and/or visual environment.

Direct effect: An effect chat is directly attributable or the proposed Project.

Direct Impacts: Impacts caused by the action and occur at the same time and place. (Sec. 1508.8a)

Distance Zones: Distance zones are based on the position of the viewer in relationship to the landscape. They are measured from one static point, such as the location of a key view. There are three defined distance zones:

- **Foreground:** 0.25-0.5 mi (0.4-0.8 km) from the viewer;
- **Middle ground:** Extends from the foreground zone to 3-5 mi (4.8-8.1 km) from the viewer; and
- **Background:** Extends from the middle ground zone to infinity (Litton 1968).

'Do nothing' situation: Continued change or evolution in the landscape in the absence of the proposed development

Elements: Individual parts which make up the landscape, such as, for example, trees, hedges and buildings.

Enhancement: Proposals that seek to improve the seascape, landscape resource and the visual amenity of the proposed development site and its wider setting, over and above its baseline; condition**.**

Equivalent Focal Length: The zoom length needed for a digital SLR to have the same zoom length as a 35 mm film camera.

Feature: Particularly prominent or eye-catching elements in the landscape, such as tree clumps, church cowers or wooded skylines OR a particular aspect of the project proposal.

Foreground: The zone that extends from the viewer to 0.25-0.5 mi (0.4-0.8 km) away from the viewer.

Form: The unified mass or shape of an object that often has an edge or outline and can be defined by surrounding space. For example, a high-rise building would have a highly regular, rectangular form whereas a hill would have an organic, mounded form. (U.S. Bureau of Land Management 1980:15; Federal Highway Administration 1988:40).

Future Baseline: Development within the area of analysis that is not yet constructed but is considered to be of sufficient certainty to warrant its consideration in respect of the trajectory of the seascape, landscape and visual context.

Geographical Information System (GIS): A system that captures, stores, analyses, manages and presents data linked to location. It links spatial information to a digital database.

Heritage: The historic environment and especially valued assets and qualities such as historic buildings and cultural traditions.

Impact: Change. Change can be made to the physical environment (measured by the compatibility of the impact) or to viewers (measured by sensitivity to the impacts). Together, the compatibility of the impact and the sensitivity of the impact yield on the seascape, landscape and visual context.

- **Compatibility of the Impact:** Defined as the ability of environment to visually absorb the proposed project as a result of the project and the environment having compatible visual characters. The proposed project can be considered compatible or incompatible. By itself, compatibility of the impact should not be confused or conflated with the value of the impact.
- **Sensitivity to the Impact:** Defined by the ability of viewers to see and care about a project's impacts. The sensitivity to impact is based on viewer sensitivity to changes in the character of visual resources. Viewers are either sensitive or insensitive to impacts. By itself, the sensitivity of the impact should not be confused or conflated with the value of the impact.
- **Value of the Impact:** Defined as either a beneficial, adverse, or neutral change to seascape, landscape, and visual quality. A proposed project may benefit visual quality by either enhancing visual resources or by creating better views of those resources and improving the experience of visual quality by viewers. Similarly, it may adversely affect visual quality by degrading visual resources or obstructing or altering desired views.

Indirect effects: Effects That result indirectly from the proposed project as a consequence of the direct effects, often occurring away from the site, or as a result of a sequence of interrelationships or a complex pathway. They may be separated by distance or in rime from the source of the effects.

Indirect Impacts: Impacts caused by the action and are later in time or farther removed in distance but are still reasonably foreseeable. Indirect impacts may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems. (Sec. 1508.8b)

Key characteristics: Those combinations of elements which are particularly important to the current character of the landscape and help to give an area its particularly distinctive sense of place.

Key View: A location from which a viewer (traveler or neighbor) can see either iconic or representative landscapes, with or without the highway, of the project corridor. Usually there is at least one key view for each landscape area. Used for visual simulations.

Land Cover: The surface cover of the land, usually expressed in terms of vegetation cover or lack of it. Related to but not the same as land use.

Land Use: What land is used for, based on broad categories of functional land cover, such as urban and industrial use and the different types of agriculture and forestry.

Landform: The shape and form of the land surface which has resulted from combinations of geology, geomorphology, slope, elevation and physical processes.

Landscape and Visual Impact Assessment (LVIA): A tool used to identify and assess the likely significance of the effects of change resulting from development both on the landscape as an environmental resource and on people's views and visual amenity.

Landscape Character: A distinct, recognizable and consistent pattern of elements in the landscape that makes one landscape different from another, rather than better or worse.

Landscape Classification: A process of sorting the landscape into difference types using selected criteria but without attaching relative values to different sorts of landscape.

Landscape Effects: Effects on the landscape as a resource.

Landscape Quality (condition): A measure of the physical state of the landscape. It may include the extent to which typical character is represented in individual areas, the intactness of the landscape and the condition of individual elements.

Landscape Receptors: Defined aspects of the landscape resource that have the poten-tial to be affected by a proposal development.

Landscape Strategy: The overall vision and objectives for what the landscape should be like in the future, and what is thought to be desirable for a particular landscape type or area as a whole, usually expressed in formally adopted plans and programs or related documents.

Landscape Units: Defined areas within the AVE that have similar visual features and homogeneous visual character and frequently, a single viewshed. An “outdoor room.” Typically, the spatial unit used for assessing visual impacts.

Landscape Values: The relative value that is attached to different landscapes by society. A landscape may be valued by different stakeholders for a whole variety of reasons.

Line: Perceived when there is a change in form, color, or texture and where the eye generally follows this pathway because of the visual contrast. For example, a city's high-rises can be seen silhouetted against the blue sky and be seen as a skyline, a river can have a curvilinear line as it passes through a landscape, or a hedgerow can create a line where it is seen rising up against a flat agricultural field. (U.S. Bureau of Land Management 1980:15; Federal Highway Administration 1988:40)

Magnitude (of effect): A term that combines judgements about the size and scale of the effect, the area over which it occurs, whether it is reversible or irre-versible and whether it is short or long term in duration.

Middle ground: The zone that extends from 0.25-0.5 mi (0.4-0.8 km) to 3-5 mi (4.8-8.1 km) away from the viewer.

Parameters: A limit or boundary which defines the scope of a particular process or activity.

Perception: Combines the sensory (that we receive through our senses) with the cog-nitive (our knowledge and understanding gained from many sources and experiences).

Permanent Impacts: Impacts resulting from construction activities lasting for 2 or more years, the built project, or the operations and maintenance associated with the built project.

Photomontage: A visualization which superimposes an image of a proposed develop-ment upon a photograph or series of photographs.

Project Region: The 30 mi (38.3 km) radius surrounding a project corridor.

Project Vicinity: The 0.5 mi (0.8 km) offset surrounding a project corridor.

Protected Visual Resources: Components of the natural, cultural, or project environments that are capable of being seen and that are protected under local, state, or federal plans or policies. There are instances where there is an overwhelming community interest in the preservation of the aesthetic qualities of visual resources that although they are not officially protected by local, state, or federal plans or policies, they still warrant protection.

Receptors: See Landscape receptors and Visual receptors.

Seascape: Landscapes with views of the coast or seas, and coasts and adjacent marine environments with cultural, historical and archaeological links with each other.

Seascape Character Areas:

Sensitivity: A term applied to specific receptors, combining judgements of the suscep-tibility of the receptor to the specific type of change or development proposed and the value related to that receptor.

Scoping: The process of identifying the issues to be addressed by an EIA. It is a method of ensuring that an EIA focuses on the important issues and avoids those that are considered to be less significant.

Significance: A measure of the importance or gravity of the environmental effect, defined by significance criteria specific to the environmental topic.

Simulations: Two- or three-dimensional depictions of the visual character of a future state. Simulations range from artistic renderings to computer animations.

Stakeholders: The whole constituency of individuals and groups who have an interest in a subject or place.

Strategic Environmental Assessment (SEA): The process of considering the environ-mental effects of certain public plans, programs or strategies at a strategic level.

Susceptibility: The ability of a defined landscape or visual receptor to accommodate the specific proposed development without undue negative consequences.

Temporary Impacts: Impacts resulting from construction or short-term activities that fall within a period of 2 years or less.

Texture: The perceived coarseness of a surface that is created by the light and shadow relationship over the surface of an object. For example, a rough surface texture (e.g., a rocky mountainside) would have many facets resulting in a number of areas in light and shadow and, often, with distinct separations between areas of light and shadow. Conversely, a smooth surface texture (e.g., a beach) would have fewer facets, larger surface areas in light or shadow, and gradual gradations between light and shadow. (U.S. Bureau of Land Management 1980:15; Federal Highway Administration 1988:40).

Threshold of Impact: The limits or bounds used to assess impacts. Impacts can be adverse or beneficial.

Time Depth (Historical Layering): the idea of landscape as a 'palimpsest', a much written-over manuscript.

Townscape: The character and composition of the built environment including the buildings and the relationships between them, the different types of w.-ban open space, including green spaces, and the relationship between buildings and open spaces.

Tranquility: A state of calm and quietude associated with peace, considered to be a significant asset of landscape.

Viewers: Neighbors who can see the proposed project and travelers who would use it.

- **Neighbors:** Viewers who occupy or will occupy land adjacent or visible to the proposed project. For a complex or controversial project, neighbors can be defined by land-use, including residential, retail, commercial, industrial, agricultural, recreational, and civic neighbors.
- **Travelers:** Viewers who use the existing or would use the proposed transportation project. For complex or controversial projects, travelers can be defined by the purpose of traveling, including commuting, hauling, touring, or exercising travelers; or by their mode of travel as motorists, bicyclists, or pedestrians.

- **Viewer Sensitivity:** The degree to which viewers are sensitive to changes in the visual character of visual resources. It is the consequence of two factors, viewer exposure and viewer awareness.
- **Viewer Exposure:** Viewer exposure is a measure of proximity (the distance between viewer and the visual resource being viewed), extent (the number of viewers viewing), and duration (how long of a time visual resources are viewed). The greater the exposure, the more viewers will be concerned about visual impacts.
- **Viewer Awareness:** Viewer awareness is a measure of attention (level of observation based on routine and familiarity), focus (level of concentration), and protection (legal and social constraints on the use of visual resources). The greater the attention, the more viewers will be concerned about visual impacts.

Viewshed: The geographical extent of theoretical visibility of a project or constituent element as determined by computer modelling.

Viewshadow: Locations where theoretical visibility, as shown in Viewshed modelling, is absent due to the screening effect of topography, structural vegetation or built structures between the viewer and the target element or Project.

Visual Amenity: The overall pleasantness of the views people enjoys of their surround-ings, which provides an attractive visual setting or backdrop for the enjoyment of activities of the people living, working, recreating, visiting or travelling through an area.

Visual Effects: Effects on specific views and on the general visual amenity experienced by people.

Visual Change: The degree of which the existing visual resources setting is absorbed within or contrasts against a proposed change. Degree of change is described in context of intactness, harmony and unity (definitions above).

Visual Character: The description of the visible attributes of a scene or object typically using artistic terms such as form, line, color, and texture.

Visual Compatibility: Visual compatibility considers the relationship of the Project with its surroundings and its setting based on the capacity of the visual resources ability to absorb or incorporate the change.

Visual Contrast: Visual contrast is described as the extent to which a project appears different from the surrounding visual environment. It is measured using the four basic visual design elements of form, line, color, and texture (BLM, 1986).

Visual Impacts: Changes to visual resources, viewers, or visual quality.

Visual Quality: What viewers like and dislike about visual resources that compose the visual character of a particular scene. Different viewers may evaluate specific visual resources differently based on their interests in natural harmony, cultural order, and project coherence. Neighbors and travelers may, in particular, have different opinions on what they like and dislike about a scene.

- **Natural Harmony:** What viewer likes and dislikes about the natural environment. The viewer labels the visual resources of the natural environment as being either harmonious or inharmonious. Harmony is considered desirable; disharmony is undesirable.

- **Cultural Order:** What a viewer likes and dislikes about the cultural environment. The viewer labels the visual resources of the cultural environment as being either orderly or disorderly. Orderly is considered desirable; disorderly is undesirable.
- **Project Coherence:** What the viewer likes and dislikes about the project environment. The viewer labels the visual resources of the project environment as being either coherent or incoherent. Coherent is considered desirable; incoherent is undesirable.

Visual Receptors: Individuals and/or defined groups of people who have the potential to be affected by a proposal.

Visual Resources: Components of the natural, cultural, or project environments which are capable of being seen.

- **Natural Visual Resources:** The land, water, vegetation, and animals which compose the natural environment. Although natural resources may have been altered or imported by people, resources which are primarily geological or biological in origin are considered natural. A grassy pasture with rolling terrain, scattered trees, and grazing cows, for example, is considered to be composed of natural visual resources, even though it is a landscape created by people.
- **Cultural Visual Resources:** The buildings, structures, and artifacts which compose the cultural environment. These are resources which were constructed by people.
- **Project Visual Resources:** For highway transportation projects, the geometrics, structures, and fixtures which compose the project environment. These are the constructed resources which were or will be placed in the environment as part of the proposed project.

Visual Sensitivity: Visual sensitivity considers both the viewers and viewer experience along with the sensitivity or susceptibility of the visual resource outside of a viewer experience.

Visualization: A computer simulation, photomontage or other technique illustrating the predicted appearance of a development.

Attachment X-1

Offshore Key Observation Point Summary Table

Attachment X-1 Key Observation Points

KOP ID	Name	Municipality	SLCA	Viewer Group	Distance to nearest WTG	In/Out of Viewshed	Project Visible
MARTHA'S VINEYARD							
KOP-MV01	Aquinnah Cliffs Overlook	Aquinnah	Coastal Bluffs	Tourists, Recreational Users	33 mi (53 km)	In	Yes
KOP-MV02	Edwin D. Vanderhoop Homestead (Aquinnah Cultural Center)	Aquinnah	Fields/Meadows	Tourists	33 mi (53 km)	In	Yes
KOP-MV03	Lucy Vincent Beach	Chilmark	Ocean Beach	Recreational Users	29 mi (47 km)	In	Yes
KOP-MV04	Barn House/Skiff Mayhew- Vincent House	Chilmark	Forests/Woodlands, Low Density Rural Settlement	Tourists, Recreational Users	30 mi (48 km)	In	Yes
KOP-MV05	Long Point Beach	West Tisbury	Ocean Beach	Recreational Users, Tourists	27 mi (43 km)	In	Yes
KOP-MV06	Wilson's Landing	Edgartown	Salt ponds/tidal marsh, Forests/Woodlands	Tourists, Recreational Users	26 mi (42 km)	In	Yes
KOP-MV07	Tissisa Pond Hiking Trail	West Tisbury	Coastal Scrub	Recreational Users	28 mi (45 km)	In	Yes
KOP-MV08	Tissisa Pond Beach	West Tisbury	Salt Ponds/Tidal Marsh	Recreational Users	28 mi (45 km)	In	Yes
KOP-MV09	322 South Road	Chilmark	Forest/Woodlands, Low Density Rural Settlement	Residents	29 mi (47 km)	In	Yes
KOP-MV10	Katama / South Beach	Edgartown	Ocean Beach	Tourists, Recreational Users	24 mi (39 km)	In	Yes
KOP-MV11	Katama Point Public Boat Launch	Edgartown	Salt Ponds/Tidal Marsh, Low Density Rural Settlement	Recreational Users	25 mi (40 km)	In	No; screened by existing vegetation, buildings and vegetated dune - no photograph
KOP-MV12	Gay Head Lighthouse	Aquinnah	Fields/Meadows	Tourists, Recreational Users	33 mi (53 km)	In	Yes
KOP-MV13	Wasque Point Beach	Edgartown	Ocean Beach	Recreational Users, Tourists	24 mi (39 km)	In	Yes
KOP-MV14	Wasque Point Trail Reservation	Edgartown	Coastal Bluff	Tourists, Recreational Users	24 mi (39 km)	In	Yes
KOP-MV15	Wasque Avenue Entry Kiosk	Edgartown	Coastal Scrub	Tourists, Recreational Users	24 mi (39 km)	In	Yes
KOP-MV16	Squibnocket Beach	Aquinnah	Ocean Beach	Tourists, Recreational Users	29 mi (47 km)	In	Yes
KOP-MV17	Philbin Beach	Aquinnah	Ocean Beach	Residents, Tourists	32 mi (51 km)	In	No; screened by landform - no photograph
KOP-MV18	Quammox Road	Edgartown	Village/Town, Low Density Rural Settlement	Residents	25 mi (40 km)	In	No; screened by enclosed vegetation - no photograph
KOP-MV19	Chilmark General Store	Chilmark	Low Density Rural Settlement	Residents, Tourists	30 mi (48 km)	In	No; screened by existing vegetation and residential structures - no photograph
KOP-MV20	Moshup Trail	Aquinnah	Forests/Woodlands, Low Density Rural Settlement, Coastal Scrub	Tourists, Recreational Users	32 mi (51 km)	Out	No; screened by landform - no photograph
KOP-MV21	Aquinnah Town Hall	Aquinnah	Low Density Rural Settlement	Residents, Tourists	32 mi (51 km)	In	No; distance to Project is estimated to be below horizon line - no photograph
KOP-MV22	421 Allen Farm South Rd	Chilmark	Low Density Rural Settlement	Residents, Tourists	29 mi (47 km)	In	No; screened by vegetation and landform - no photograph
KOP-MV23	Chappy Point, Gardner Beach	Edgartown	Village/Town	Tourists, Recreational Users	27 mi (43 km)	In	No; screened by landform and vegetation
KOP-MV24	Edgar Harbor within Edgartown Village Historic District	Edgartown	Village/Town	Residents, Tourists, Recreational Users	27 mi (43 km)	In	No; screened by existing structures, landform, and vegetation - no photograph

KOPs selected for the development of simulations are identified with gray shading.

Attachment X-1 Key Observation Points

KOP ID	Name	Municipality	SLCA	Viewer Group	Distance to nearest WTG	In/Out of Viewshed	Project Visible
KOP-MV25	Wasque Avenue Entry Kiosk Night	Edgartown	Coastal Scrub	Tourists, Recreational Users	24 mi (39 km)	In	Yes
KOP-MV26	Peaked Hill	Chilmark	Forests/Woodlands, Low Density Rural Settlement	Tourists, Recreational Users	30 mi (49 km)	In	Yes
NANTUCKET							
KOP-NA01	Cisco Beach	Nantucket	Ocean Beach	Tourists, Recreational Users	21 mi (34 km)	In	Yes
KOP-NA02	Siasconset Bridge	Nantucket	Village/Town	Residents, Tourists, Recreational Users	28 mi (45 km)	Out	No; not facing direction of Project and screened by vegetation and structures.
KOP-NA03	Sankaty Head Lighthouse	Nantucket	Village/Town	Tourists, Recreational Users	29 mi (47 km)	In	No; screened by vegetation, landform, and distance to Project
KOP-NA04	Tom Nevers Beach	Nantucket	Ocean Beach	Tourists, Recreational Users	26 mi (42 km)	In	Yes
KOP-NA05	Tom Nevers Field	Nantucket	Coastal Bluff	Tourists, Recreational Users	25 mi (40 km)	In	Yes
KOP-NA06	Madequecham 1	Nantucket	Coastal Dunes, Coastal Scrub, Ocean Beach	Tourists, Recreational Users	24 mi (39 km)	In	Yes
KOP-NA07	Nobadeer Beach	Nantucket	Ocean Beach	Tourists, Recreational Users	23 mi (37 km)	In	Yes
KOP-NA08	Surfside Beach	Nantucket	Ocean Beach	Tourists, Recreational Users	22 mi (35 km)	In	Yes
KOP-NA09	Miacomet Beach and Pond	Nantucket	Ocean Beach	Tourists, Recreational Users	21 mi (34 km)	In	Yes
KOP-NA10	Madaket Beach	Nantucket	Ocean Beach	Tourists, Recreational Users	20 mi (32 km)	In	Yes
KOP-NA11	Siasconset Beach	Nantucket	Ocean Beach	Tourists, Recreational Users	28 mi (45 km)	Out	No; screened by landform
KOP-NA12	Hummock Pond Road Bike Path	Nantucket	Coastal Scrub, Low Density Rural Settlement	Tourists, Recreational Users	21 mi (34 km)	In	Yes
KOP-NA13	NCF Sandford Farm Barn Overlook	Nantucket	Fields/Meadows	Tourists, Recreational Users	21 mi (34 km)	In	Yes
KOP-NA14	Low Beach	Nantucket	Ocean Beach	Recreational Users	27 mi (43 km)	In	Yes
KOP-NA15	Alter Rock	Nantucket	Coastal Scrub	Tourists, Recreational Users	26 mi (42 km)	In	No; screened by landform and distance to Project
KOP-NA16	Head of Plains	Nantucket	Ocean Beach	Tourists, Recreational Users	20 mi (32 km)	In	Yes
KOP-NA17	Bartlett's Farm	Nantucket	Light Industrial Land, Field/Meadow	Residents, Tourists	21 mi (34 km)	In	No; view obscured behind coastal dune and topography rises from viewpoint to the dune
KOP-NA18	Ladies Beach	Nantucket	Ocean Beach	Tourists, Recreational Users	21 mi (34 km)	In	Yes
KOP-NA19	Miacomet Golf Club	Nantucket	Parks/developed recreation, Coastal Scrub	Recreational Users	22 mi (35 km)	In	No; screened by vegetation
KOP-NA20	Madequecham 5	Nantucket	Ocean Beach	Tourists, Recreational Users	24 mi (39 km)	In	Yes
KOP-NA21	Madaket Beach (Sunset)	Nantucket	Ocean Beach	Tourists, Recreational Users	20 mi (32 km)	In	Yes
KOP-NA21	Madaket Beach (Night)	Nantucket	Ocean Beach	Tourists, Recreational Users	20 mi (32 km)	In	Yes
KOP-NA22	Eel Point	Nantucket	Coastal Dunes, Ocean Beach, Coastal Scrub	Tourists, Recreational Users	22 mi (35 km)	In	No; screened behind coastal dunes and residential structures - no photograph
KOP-NA23	Low Beach Road Residential Community	Nantucket	Village/Town	Residents	27 mi (43 km)	In	No; enclosed behind coastal vegetation - no photograph
KOP-NA24	Washington Ave and Madaket Road	Nantucket	Low Density Rural Settlement	Tourists, Recreational Users	20 mi (32 km)	In	No; direction of view is directed down the road toward the south west away from the Project - no photograph

KOPs selected for the development of simulations are identified with gray shading.

Attachment X-1 Key Observation Points

KOP ID	Name	Municipality	SLCA	Viewer Group	Distance to nearest WTG	In/Out of Viewshed	Project Visible
KOP-NA25	Siasconset Golf Club	Nantucket	Parks/Developed Recreation	Recreational Users	27 mi (43 km)	In	No; location is set low in the topography with no view of the Project - no photograph
KOP-NA26	New South Road	Nantucket	Coastal Scrub	Residents, Tourists, Recreational Users	25 mi (40 km)	In	No; enclosed behind existing vegetation - no photograph
KOP-NA27	Milestone Rd at South Pasture	Nantucket	Coastal Scrub	Tourists, Recreational Users	25 mi (40 km)	In	No; low in the landscape and enclosed by existing vegetation - no photograph
KOP-NA28	Hyannis/Nantucket Ferry	Nantucket	Village/Town	Tourists, Recreational Users	24 mi (39 km)	In	Yes; visibility towards Project varries depending on location on route. May be visible, but may be blocked by Nantucket land mass - no photograph
KOP-NA29	Cisco Beach Below Sanford Farm Barn	Nantucket	Ocean Beach	Tourists, Recreational Users	20 mi (32 km)	In	Yes; trail link between barn overlook and beach view - no photograph
KOP-NA30	Great Point Lighthouse	Nantucket	Coastal Scrub, Ocean Beach, Coastal Dunes	Tourists, Recreational Users	32 mi (51 km)	In	No; view toward the Project is hidden by topography on opposite side of the island - no photograph
TUCKERNUCK ISLAND							
KOP-T01	Tuckernuck 1	Nantucket	Ocean Beach	Tourists, Recreational Users	21 mi (34 km)	In	Yes
KOP-T02	Tuckernuck 2	Nantucket	Ocean Beach	Tourists, Recreational Users	20 mi (32 km)	In	Yes
ELIZABETH ISLANDS							
KOP-EI01	Cuttyhunk Lookout	Gonsold	Fields/Meadows	Tourists, Recreational Users	40 mi (65 km)	In	Yes
KOP-EI02	Barges Beach	Gonsold	Ocean Beach	Tourists, Recreational Users	40 mi (65 km)	In	Yes
CAPE COD							
KOP-CC01	Dowses Beach	Mashpee	Ocean Beach, Rural/Suburban Residential, Marine Bay	Tourists, Recreational Users	43 mi (69 km)	In	Yes
KOP-CC02	South Cape/Mashpee Town Beach	Barnstable	Ocean Beach	Tourists, Recreational Users	38 mi (62 km)	In	Yes; Martha's Vineyard land mass screens the majority of the Project.
KOP-CC03	Menauhant Beach	Falmouth	Ocean Beach	Tourists, Recreational Users	39 mi (62 km)	In	Yes; Martha's Vineyard land mass screens the majority of the Project.
KOP-CC04	Goodwill Park	Falmouth	Parks/Developed Recreation, Forests/Woodlands	Recreational Users	41 mi (66 km)	Out	No; Project screened by inland vegetation and structures.

KOPs selected for the development of simulations are identified with gray shading.

Attachment X-2

Offshore Visual Simulations

Provided Under Separate Cover

ATTACHMENT X-2 OFFSHORE PHOTO SIMULATION SUMMARY

Attachment X-3

Offshore VIA Rating Forms

MARTHA'S VINEYARD

TABLE 1: VIA RATING FORM KOP-MV01 AQUINNAH CLIFFS OVERLOOK					
Section A. KOP Information					
KOP Reference Number: KOP-MV01	**Name of KOP:** Aquinnah Cliffs Overlook	**KOP Distance from Project:** 33 mi (53 km) **Elevation:** 145.5 ft	**Date visited:** June 17, 2021	**Time of visit:** 4:10 pm	**Weather conditions and visibility during visit:** Sunny, hazy sky

Location:
Aquinnah Cliffs Overlook is a National Natural Landmark and popular tourist destination on the most westerly point of the island of Martha's Vineyard with an expansive view along the coast and out to the sea. The site is known for the clay cliffs, sunset views, lighthouse, and historical and current importance to the native Wampanoag Tribe. The site is developed with recreational trails, viewing platforms, and parking lots, surrounded by the natural coastal scrub bush, cliffs and bluffs, beaches, and an ocean view.

Affected Environment

SLCA Context
The KOP is located in the Coastal Bluffs SCA as described in Table X.5-13 but is subject to the considerable influence of the neighboring Coastal Scrub LCA and OCA.

Visual Impact Receptors (Viewer Groups)
Tourists, Recreational Users. The overlook is popular for photography and sunset and daytime views.

Visual Context
The visual context of this KOP is dynamic and changeable in nature, reflected in tidal patterns, as well as variability in light and atmospheric conditions, as well as patterns of recreational use and the frequency and number of recreational visitors. The scale of the view from this KOP and seaward views across the OCA dominates and forms a crucial aspect of the scenic quality at this KOP, as does its essentially dark condition at night.

Key Characteristics of the SLCA and View at KOP Location

- Situated in a low lying, gently sloping landscape, the topography at the KOP rises to form a local high point.
- Surrounding Coastal Scrub. Wide open views across the OCA.
- Neighboring Coastal Dunes and Ocean Beach SCA contrast with the more vegetated inland at this KOP. Extensive connecting views across the neighboring OCA are provided from the KOP, as well as along the neighboring Coastal Dunes and Ocean Beach.
- During hours of darkness the character of the seascape/landscape at the KOP is influenced by glimpses of scattered lighting associated with onshore elements such as properties, traffic on roads and lighthouses etc., viewed intermittently nearby. It is also influenced by views across the OCA which contains transient lighting from vessels, navigation aids and moonlight reflecting on the water.

Form	Gently sloping. Influenced by low flat horizon OCA.
Line	Strong undulating linear line where coastal tidal edge meets the beach. Cliffs are vertical with height and horizontal due to layering of the clay materials but aren't evident in views from this KOP.
Pattern	Relatively simple but accompanied by some complexity of built forms.
Color	White sand contrasting with mosaic of blues and grays of the neighboring ocean. Colors are, however, highly variable, depending on sea state and weather/atmospheric conditions.
Texture	Coarse, associated with scrubland and built forms.

TABLE 1: VIA RATING FORM KOP-MV01 AQUINNAH CLIFFS OVERLOOK	
Movement	Variable, depending upon frequency and number of recreational users and residents, tidal patterns, and the sea stateof the neighboring ocean.
Perceptual Characteristics	Variable, depending upon frequency and number of recreational users of the beach, tidal patterns, sea state, as well as seasonal and time of day. Ranging from natural, restful, tranquil and peaceful to busy/active, exciting, and stimulating. At night the view at this KOP contains existing artificial light sources and movement associated with residential properties and vessel navigational aids.

B. Contrast, Magnitude of Impact, and Sensitivity [KOP-MV01]

Description of Projects Appearance in the context of the Affected Environment:

155 of the Project turbines would be visible on the distant horizon, offshore, to the southeast and would be framed between the landmasses of Normans Land Island and Martha's Vineyard. Rotor movement, while discernible, is unlikely to be immediately apparent due to the slow rotational speed of turbine blades and the distance at which Project would be viewed. The visibility of the Project would be greatest during periods of particularly good visibility and clear skies, and when the turbines are either highlighted or backlit by the sun (e.g., in late afternoon or during the morning) when the turbines would contrast with the color of the clear sky. The Project would also be apparent at night, introducing new artificial flashing light sources and the uncoordinated nature of the flashing light due to intermittent screening of lights by rotors offshore when aviation lighting on turbine nacelles is triggered.

Aesthetic and Perceptual Characteristics[1]	Rating	Degree of Contrast
Form	2 Small	The proposed Project would introduce vertical elements to the essentially horizontal horizon that is a key determining characteristic of the view at this KOP.
Line	2 Small	The proposed Project would introduce an array of vertical elements to the flat horizon that forms a key aspect of seaward views at this KOP.
Pattern	2 Small	The proposed Project would affect the pattern of landmasses that constitutes the background of the view.
Color	2 Small	The proposed Project's turbine blades, hubs, and nacelles have been rendered at RAL 9010 (Pure White), rendering it relatively recessive against the pale sky. Some contrast is likely, however, during periods of clear visibility when the proposed Project is sunlit or backlit, when color contrast with the sky would be greatest.
Texture	2 Small	The proposed Project would introduce coarser elements to the distant horizon that is an important characteristic of this KOP.
Movement	3 Small to Moderate	The proposed Project would introduce further movement to the distant horizon in views from this KOP in the form of rotor movement. The prominence of this movement would be lessened slightly due to the slow rotor speed anticipated and the distance at which the turbines would be viewed but would still distract from the wider view.

[1] Aesthetic and Perceptual Characteristics ratings are adapted from the BLM Visual Resource Management system (see Table X.6-4 in Section X.6.1.6.2). The rest of the ratings (sensitivity, magnitude, and overall impact) are based on slight derivation of BOEM's SLVIA Guidance ratings matrix.

TABLE 1: VIA RATING FORM KOP-MV01 AQUINNAH CLIFFS OVERLOOK		
Receptor Sensitivity Factor	**Rating**	**Rationale**
Susceptibility	High	Receptors visit this KOP to enjoy the expansive views from the overlook. The cliffs and beach are pristine and the view to the horizon is unobstructed by structural features. The Wampanoag Tribe holds important historical, cultural, and spiritual connection to the area, making them highly susceptible to changes.
Value	High	This is a scenic viewpoint with cultural and historic importance due to the connections to the Wampanoag Tribe. This is a popular and valued destination with many visitors, especially during the summer months. Although the recreation area is developed, the views remain natural.
Overall Sensitivity Rating: High		
Magnitude Factor	**Rating**	**Rationale**
Geographic Extent	Small	The proposed Project is to the left of the horizontal field of view. The principal outlook from this KOP it to the north, looking at the exposed cliffs and out towards Vineyard Sound. The simulation for this KOP is oriented to the southeast away from the principal view. The Project would be seen distantly at over 33 mi (53 km).
Size and Scale	Medium	Aesthetic characteristics including form, line, color, texture, and motion are rated individually above. The Project occupies 23% of the available horizontal field of view provided by the simulation. In this context the Project would be readily apparent after even a brief look and would be visible to most casual observers. The object is clearly evident and represents a prominent new feature within a largely unchanged wider visual context but would not affect the principal outlook from this KOP. As this KOP is an overlook, full views of the proposed Project would be experienced when facing the direction of the Project.
Duration and Reversibility	Fair	Although the proposed Project's lifespan is expected to be 35 years, it will be fully reversible.
Overall Magnitude Rating: Medium		
Overall Impact Level	**Rating**	**Rationale**
Visual Impact Assessment:	Moderate	The proposed Project would form a relatively modest new focal point in a different direction from the principal view from this highly sensitive KOP, its prominence being exacerbated by the simple horizontal form of the horizon on which it would be seen, and its position framed by the Normans Land and Martha's Vineyard landmasses.

TABLE 2: VIA RATING FORM KOP-MV02 EDWIN D. VANDERHOOP HOMESTEAD (AQUINNAH CULTURAL CENTER)					
Section A. KOP Information					
KOP Reference Number: MV02	**Name of KOP:** Edwin D. Vanderhoop Homestead (Aquinnah Cultural Center)	**KOP Distance from Project:** 33 mi (53 km) **Elevation:** 92.5 feet	**Date visited:** March 3, 2022	**Time of visit:** 1:35 pm	**Weather conditions and visibility during visit:** Sunny, hazy sky

Location:
Edwin D. Vanderhoop Homestead (Aquinnah Cultural Center) is a NRHP Historic Property and popular tourist destination near the most westerly point of the island of Martha's Vineyard, the Cliffs Overlook, with an expansive view along the coast and out to the sea. The site is known for sunset views, lighthouse, and historical and current importance to the native Wampanoag Tribe. The site is developed with recreational trails, viewing platforms, and parking lots, surrounded by the natural coastal scrub bush, cliffs and bluffs, beaches, and an ocean view.

Visual Impact Receptors (Viewer Groups)
Tourists. The cultural center is popular for photography and sunset and daytime views.

Visual Context
The visual context of this KOP is dynamic and changeable in nature, reflected in tidal patterns, as well as variability in light and atmospheric conditions, as well as patterns of recreational use and the frequency and number of recreational visitors. The scale of the view from this KOP and seaward views across the OCA dominates and forms a crucial aspect of the scenic quality at this KOP, as does its essentially dark condition at night.

Affected Environment

SLCA Context
The KOP is located in the Fields/Meadows LCA as described in Table X.5-13 but is subject to the considerable influence of the neighboring OCA.

Key Characteristics of the SLCA and View at KOP Location

- Situated on a gently sloping landscape with views of the open fields, the cultural center is situation on the side of the hill with expansive views towards the ocean.
- Coastal Scrub. Wide open views across the neighboring OCA.
- Scenic integrity is high due to the expansive views from the historic property. Although the recreation area is highly developed, the character of the landscape at the KOP is derived from its essentially rural setting that is dominated by an undulating landform, a mosaic of scrub and grassland cover, and the backdrop of beaches and the OCA.
- Neighboring Coastal Dunes and Ocean Beach SCA contrast with the more vegetated inland at this KOP. Extensive connecting views across the neighboring OCA are provided from the KOP, as well as along the neighboring Coastal Dunes and Ocean Beach.
- During hours of darkness the view at the KOP is influenced by glimpses of scattered lighting associatedwith onshore elements such as properties, traffic on roads and lighthouses etc., viewed intermittently nearby. It is also influenced by views across the OCA which contains transient lighting from vessels, navigation aids and moonlight reflecting on the water.

Form	Gently sloping. Influenced by low flat horizon of neighboring OCA.
Line	Strong undulating linear line where coastal tidal edge meets the water tan sandy beach and where the open field meets the vegetated edges. Scattered vertical lines from street light structures.
Pattern	Relatively simple but accompanied by some complexity of built forms.

TABLE 2: VIA RATING FORM KOP-MV02 EDWIN D. VANDERHOOP HOMESTEAD (AQUINNAH CULTURAL CENTER)	
Color	White sand contrasting with mosaic of blues and grays of the neighboring OCA. Colors are, however, highly variable, depending on sea state and weather/atmospheric conditions.
Texture	Coarse, associated with scrubland and built forms.
Movement	Variable, depending upon frequency and number of recreational users and residents, tidal patterns and the sea stateof the neighboring OCA.
Perceptual Characteristics	Variable, depending upon frequency and number of recreational users of the beach, tidal patterns, sea state, as well as seasonal and time of day. Ranging from natural, restful, tranquil and peaceful to busy/active, exciting, and stimulating. At night the view at this KOP contains existing artificial light sources and movement associated with residential properties and vessel navigational aids.

B. Contrast, Magnitude of Impact, and Sensitivity [KOP-MV02]

Description of Projects Appearance in the context of the Affected Environment:

155 of the Project turbines would be visible distantly offshore, to the southeast, and would be framed between and partially screened by the landmasses of Martha's Vineyard and Nomans Land Island. Rotor movement, while discernible, is unlikely to be immediately apparent due to the slow rotational speed ofturbine blades and the distance at which Project would be viewed. The visibility of the Project would be greatest during periods of particularly good visibility and clear skies, and when the turbines are eitherhighlighted or backlit by the sun (e.g., in late afternoon or during the morning) when the turbines would contrast with the color of the clear sky. The Project would also be apparent at night, introducing new offshore artificial flashing light sources and the uncoordinated nature of the flashing light due to intermittent screening of lights by rotors when aviation lighting on turbine nacelles is triggered.

Aesthetic and Perceptual Characteristics[1]	Rating	Degree of Contrast
Form	2 Small	The proposed Project would introduce large scale vertical elements to the essentially horizontal horizon that is a key determining characteristic of the seascape/landscape character at this KOP.
Line	2 Small	The proposed Project would introduce a complex array of large-scale vertical elements to the flat horizon that forms a key aspect of seaward views at this KOP.
Pattern	2 Small	The proposed Project would introduce a complex array of structures on the horizon between Martha's Vineyard and Norman's Island landmasses.
Color	2 Small	The proposed Project's turbine blades, hubs, and nacelles have been rendered at RAL 9010 (Pure White), rendering it relatively recessive against the pale sky . Some contrast is likely, however, during periods of clear visibility when the proposed Project is sunlit or backlit, when color contrast with the sky would be greatest.
Texture	2 Small	The proposed Project would introduce coarser elements to the distant horizon that is an important characteristic of this KOP.

[1] Aesthetic and Perceptual Characteristics ratings are adapted from the BLM Visual Resource Management system (see Table X.6-4 in Section X.6.1.6.2). The rest of the ratings (sensitivity, magnitude, and overall impact) are based on slight derivation of BOEM's SLVIA Guidance ratings matrix.

TABLE 2: VIA RATING FORM KOP-MV02 EDWIN D. VANDERHOOP HOMESTEAD (AQUINNAH CULTURAL CENTER)		
Movement	3 Small to Moderate	The proposed Project would introduce further movement to the distant horizon in views from this KOP in the form of rotor movement. The prominence of this movement would be lessened slightly due to the slow rotor speed anticipated and the distance at which the turbines would be viewed but would still distract from the wider view.
Receptor Sensitivity Factor	**Rating**	**Rationale**
Susceptibility	High	Receptors visit this KOP to enjoy the expansive views from the historic Cultural Center. The cliffs and beach are pristine and the view to the horizon is unobstructed by structural features, making them highly susceptible to changes.
Value	High	This is a scenic viewpoint with cultural and historic importance due to the historical, cultural, and spiritual connection to the Wampanoag Tribe. This is a popular and valued destination with many visitors, especially during the summer months. Although the recreation area is developed, the views remain mostly natural.
Overall Sensitivity Rating: High		
Magnitude Factor	**Rating**	**Rationale**
Geographic Extent	Large	The principal outlook from this KOP is to the southeast into the Atlantic Ocean where the proposed project is located, and the simulation is oriented. The proposed Project would therefore be located toward the center of this outlook. The Project would, however, be seen distantly at over 33 mi (53 km).
Size and Scale	Medium	Aesthetic characteristics including form, line, color, texture, and motion are rated individually above. The Project occupies 27.8% of the available horizontal field of view provided by the simulation. The Cultural Center has a southerly facing deck providing views out toward the ocean, in which full views of the proposed Project would be experienced when facing the direction of the Project. In this context the Project would be readily apparent after even a brief look and would be visible to most casual observers. The object is clearly evident and represents a prominent new feature within a largely unchanged wider visual context.
Duration and Reversibility	Fair	Although the proposed Project's lifespan is expected to be 35 years, it will be fully reversible.
Overall Magnitude Rating: Medium		
Overall Impact Level	**Rating**	**Rationale**
Visual Impact Assessment:	Moderate	The proposed Project would form a relatively modest new focal point in the view from this KOP, its prominence being exacerbated by the simple horizontal form of the horizon on which it would be seen, and its position framed by the Normans Land and Martha's Vineyard landmasses.

TABLE 3: VIA RATING FORM KOP-MV08 TISSISSA POND BEACH					
Section A. KOP Information					
KOP Reference Number: MV08	**Name of KOP:** Tississa Pond Beach	**KOP Distance from Project:** 28 mi (45 km) **Elevation:** 10.5 feet	**Date visited:** June 17, 2021	**Time of visit:** 6:15 pm	**Weather conditions and visibility during visit:** Partly Cloudy

Location:
Tississa Pond Beach is a small, remote beach that is surrounded by multiple coves. A hiking trail goes through the oak forest and opens to a flat expanse of coastal scrub leading up to the beach. This beach looks out across Tisbury Great Pond, to Tisbury Great Pond Beach, which is a barrier beach separating the pond from the ocean.

Visual Impact Receptors (Viewer Groups): Recreational Users

Visual Context
The dominant visual elements are comprised of the flat expanse of water, the blue or gray color reflecting the sky. Thesmooth or choppy texture of the water surface, and the distant barrier beach across the pond and the horizon line. Scenic integrity is high, with natural visual intrusions inducing landform. The distant horizon provides a distinct linearbreak between the ocean and the sky. Ocean evaporation from warm summer temperatures often creates a layer ofhaze between the ocean and blue sky. Conditions of the pond range from flat and smooth to rippling.

The viewer position is located on the beach in front of the hiking trail through the scrub shrub vegetation. The curvingshorelines surrounding the pond view creates an enclosed water body that contrasts with the tan sandy and rocky beach.

Affected Environment

SLCA Context
The KOP is located in the Salt Ponds/Tidal Marsh SLCA as described in Table X.5-13 but is subject to the considerable influence of the neighboring Coastal Scrub and Ocean Beach.

Key Characteristics of the SLCA and View at KOP Location

- Flat, even shrub heathlands with patches of oak forest. An expanse of beach followed by the ocean is visible across the horizon.
- Residential structures are nestled along the edges of the surrounding viewpoint and do not exceed the scale of the underlying SLCAs.
- During hours of darkness the character of the seascape/landscape at the KOP is influenced by glimpses of scattered lighting associated with onshore elements such as properties, viewed distantly and intermittently, are transient lighting from vessels, navigation aids and moonlight reflecting on the water.

Form	Level to slightly sloping sandy beach.
Line	Strong undulating line where coastal tidal edge meets the water.
Pattern	Relatively simple.
Color	Pale tan sand contrasting with the blues and grays of the Salt Ponds/Tidal Marsh waters. Colors are, however, highly variable, depending on sea state and weather/atmospheric conditions.
Texture	Ranging from smooth in respect of the beach and open waters, to coarse in respect of inland scrubland.
Movement	Variable, depending upon frequency and number of recreational users, tidal patterns and the sea state of the tidal pond.

TABLE 3: VIA RATING FORM KOP-MV08 TISSISSA POND BEACH	
Perceptual Characteristics	Variable, depending upon frequency and number of recreational users of the beach, tidal patterns, sea state, as well as seasonal and time of day. Mostly natural, restful, tranquil and peaceful, but dependent on viewer activity, may be active, exciting, and stimulating. At night the view at this KOP contains a small proportion of existing artificial light sources and movement associated with residential properties.

B. Contrast, Magnitude of Impact, and Sensitivity Rating [KOP-MV08]

Description of Projects Appearance in the context of the Affected Environment

133 of the Projects turbines would theoretically be visible on the skyline of the view. Approximately 22 of the Project's turbines would be entirely screened by the curvature of the earth. The proposed Project would be visible on the distant horizon, offshore, to the southeast. The turbines would appear primarily as blade tips (no columns visible) due to the screening effect of intervening topography. Rotor movement, while discernible, is unlikely to be immediately apparent due to the slow rotational speed of turbine blades and the distance at which the Project would be viewed. The visibility of the Project would be greatest during periods of particularly good visibility and clear skies, and when the turbines are either highlighted or backlit by the sun (e.g., late afternoon or during the morning) and would contrast with the color of the clear sky.

Aesthetic and Perceptual Characteristics[1]	**Rating**	**Degree of Contrast**
Form	2 Small	The proposed Project would introduce large scale engineered structures and movement to the essentially horizontal horizon that is a key determining characteristic of the view at this KOP.
Line	2 Small	The proposed Project would affect the simplicity and linear horizon.
Pattern	2 Small	The proposed Project would minorly affect the simple, coherent undeveloped pattern of the view.
Color	2 Small	The proposed Project's turbine blades, hubs, and nacelles have been rendered at RAL 9010 (Pure White), rendering it relatively recessive against the pale sky. Some contrast is likely, however, during periods of clear visibility when the proposed Project is sunlit or backlit, when color contrast with the sky would be greatest (e.g., during the morning and late afternoon).
Texture	2 Small	The proposed Project would introduce coarser elements to the distant horizon that is an important characteristic of this KOP.
Movement	2 Small	The proposed Project would introduce further movement to the distant horizon in views from this KOP in the form of rotor movement. This would be compounded where 'stacking' occurs in the Project array.
Receptor Sensitivity Factor	**Rating**	**Rationale**
Susceptibility	Medium	Receptor susceptibility ranges due to the activity recreationalists are pursuing at the KOP. Community members around the pond may regard these views across the pond towards the ocean as an essential asset, however recreationalists may not be focused on the views out toward the ocean due to the enclosed nature of the pond.

[1] Aesthetic and Perceptual Characteristics ratings are adapted from the BLM Visual Resource Management system (see Table X.6-4 in Section X.6.1.6.2). The rest of the ratings (sensitivity, magnitude, and overall impact) are based on slight derivation of BOEM's SLVIA Guidance ratings matrix.

TABLE 3: VIA RATING FORM KOP-MV08 TISSISSA POND BEACH		
Value	High	Value is high for recreationalists within this community due to the remote location of the beach and seemingly natural setting. The KOP is less obviously accessible than the southern-facing ocean beachfronts directly adjacent to the OCA.
Overall Sensitivity Rating: High		
Magnitude Factor	**Rating**	**Rationale**
Geographic Extent	Medium	The principal outlook from this KOP is to the southeast into the Atlantic Ocean where the proposed project is located, and the simulation is oriented. Consequently, the proposed Project would be located towards the center of the view of the key view from this KOP.
Size and Scale	Small	Aesthetic characteristics including form, line, color, texture, and motion are rated individually above. The Project occupies 12.1% of the available horizontal field of view provided by the simulation. Partial views of the proposed Project would be experienced due to the varying receptor activities at the KOP. In this context the Project would not be readily apparent after a brief look but would eventually be visible to most casual observers. The object is evident above the dunes and represents a new feature within a largely unchanged wider visual context.
Duration and Reversibility	Fair	Although the proposed Project's lifespan is expected to be 35 years, it will be fully reversible.
Overall Magnitude Rating: Small		
Overall Impact Level	**Rating**	**Rationale**
Visual Impact Assessment:	Minor	The proposed Project would form a relatively minor change to the view due to the small magnitude of change to which receptors' sensitivity is high. The proposed Project would lessen the perceived naturalness experienced at the KOP and increase the degree of perceived movement present.

TABLE 4: VIA RATING FORM KOP-MV10 KATAMA/SOUTH BEACH					
Section A. KOP Information					
KOP Reference Number: MV10	**Name of KOP:** Katama/South Beach	**KOP Distance from Project:** 25 mi (40 km) **Elevation:** 13.5 feet	**Date visited:** June 18, 2021	**Time of visit:** 12:25pm	**Weather conditions and visibility during visit:** Sunny Clear Skies

Location:
Katama/South Beach is a popular stretch of beach located southwest of Katama Bay. Behind the sand beach lie dunes with immense vegetation restoration efforts. Facilities include bathroom and shower amenities and a large parking area. Residential homes and Katama Farm are located behind the entrance roadway to the parking area.

Visual Impact Receptors (Viewer Groups): Tourists, Recreational Users

Visual Context
Viewer groups visit Katama/South Beach to relax and recreate, including swimming, sunbathing, socializing, surfing, playing beach games, shell fishing, and birdwatching. The viewer position to the ocean is from the beach in front of the coastal dunes.

Affected Environment

SLCA Context
The KOP is located in the Ocean Beach SCA as described in Table X.5-13 and under considerable influence of the neighboring Coastal Dune and OCA character areas.

Key Characteristics of the SLCA and View at KOP Location

- An expanse of beach is visible followed by the vast ocean across the horizon.
- Fine white sands beach. Above the beach, delicate dunes are being restored with grasses and protected against disturbances including climbing or walking. The beach is part of the 1-mile stretch of South Beach State Park managed by the Massachusetts Department of Conservation and Recreation (DCR). Unimproved roads connect with primitive parking areas that lead to the beaches. During the summer season, this is a very popular beach for tourists.
- The dominant visual elements are comprised of the flat expanse of water, the blue or gray color reflecting the sky, the smooth or choppy texture of the water surface, and the distant horizon line. Scenic integrity is high, with no existing visual intrusions. The dark horizon line provides a distinct linear break between the ocean and the sky. Ocean evaporation from warm summer temperatures often creates a layer of haze between the ocean and the warm blue sky. Conditions range from flat water to choppy to rolling swells. Scenic integrity is high due to the remote location and the beach; the setting remains highly natural.
- During hours of darkness the character of the SLCAs at the KOP is influenced by glimpses of scattered lighting associated with onshore elements such as residential properties, viewed distantly and intermittently are transient lighting from vessels, navigation aids and moonlight reflecting on the water.

Form	Level to slightly sloping sandy beach
Line	Strong undulating line where coastal tidal edge meets the water.
Pattern	Relatively simple.
Color	Pale tan sand contrasting with mosaic of blues and grays of the neighboring open waters. Colors are, however, highly variable, depending on sea state and weather/atmospheric conditions.
Texture	Ranging from smooth in respect of the beach and adjacent open waters, to coarse in respect of inland coastal scrub and choppy in respect of variable ocean conditions.

TABLE 4: VIA RATING FORM KOP-MV10 KATAMA/SOUTH BEACH	
Movement	Variable, depending upon frequency and number of recreational users and residents, tidal patterns and the sea state of the neighboring OCA.
Perceptual Characteristics	Variable, depending upon frequency and number of recreational users of the beach, tidal patterns, sea state, as well as seasonal and time of day. Ranging from natural, restful, tranquil and peaceful to busy/active, exciting, and stimulating. At night the view at this KOP contains a small proportion of existing artificial light sources and movement associated with residential properties and vessel navigational aids.

Description of Projects Appearance in the context of the Affected Environment

140 of the Project turbines would be visible on the skyline from this KOP. The proposed Project would be visible on the distant horizon, offshore, to the southeast. Approximately 15 of the Project's turbines would be entirely screened by the curvature of the earth. Rotor movement, while discernible, is unlikely to be immediately apparent due to the slow rotational speed of turbine blades and the distance at which Project would be viewed. The visibility of the Project would be greatest during periods of particularly good visibility and clear skies, and when the turbines are backlit by the sun and would contrast with the color of the clear sky (i.e., during morning and later afternoon). The Project would also be apparent at night, introducing new artificial flashing light sources and the uncoordinated nature of the flashing light due to intermittent screening of lights by rotors offshore. However, such effects would be infrequent and of limited duration. However, such lighting impacts would be infrequent and of short duration.

B. Contrast, Magnitude of Impact, and Sensitivity Rating [KOP-MV10]		
Aesthetic and Perceptual Characteristics[1]	**Rating**	**Degree of Contrast**
Forms	2 Small	The proposed Project would introduce large scale vertical elements to the essentially horizontal horizon that is a key determining characteristic of the landscape at this KOP.
Line	2 Small	The proposed Project would introduce a complex array of large-scale vertical elements to the flat horizon that forms a key aspect of seaward views at this KOP.
Pattern	2 Small	The proposed Project would represent a departure from the current pattern of elements offshore that form a critical context and influence the perception of the seascape at this KOP.
Color	2 Small	The proposed Project's turbine blades, hubs, and nacelles have been rendered at RAL 9010 (Pure White), rendering it relatively recessive against the pale sky. Some contrast is likely, however, during periods of clear visibility when the proposed Project is sunlit or backlit, when color contrast with the sky would be greatest.
Texture	2 Small	The proposed Project would introduce coarser elements to the distant horizon that is an important characteristic of this KOP.
Movement	2 Small	While the proposed Project would introduce further movement to the distant horizon in views from this KOP in the form of rotor movement, this would not be immediately apparent due to the slow rotor speed anticipated and the distance at which the turbines would be viewed.
Receptor Sensitivity Factor	**Rating**	**Rationale**

[1] Aesthetic and Perceptual Characteristics ratings are adapted from the BLM Visual Resource Management system (see Table X.6-4 in Section X.6.1.6.2). The rest of the ratings (sensitivity, magnitude, and overall impact) are based on slight derivation of BOEM's SLVIA Guidance ratings matrix.

TABLE 4: VIA RATING FORM KOP-MV10 KATAMA/SOUTH BEACH		
Susceptibility	High	Receptor susceptibility is high at this KOP due to the expansive views out towards the vast OCA with no current intrusions, which is a major attraction to this beach.
Value	High	This is a very busy beach filled with recreational users and tourists, especially during the summer months. This beach is one of the main publicly accessible beaches nearby the popular villages on the eastern side of the island.
Overall Sensitivity Rating: High		
Magnitude Factor	**Rating**	**Rationale**
Geographic Extent	Large	The principal outlook from this KOP is to the southeast into the Atlantic Ocean where the proposed project is located, and the simulation is oriented. Consequently, the proposed Project would occupy the center of the horizontal field of view. However, the Project would be seen distantly at over 24 mi (39 km).
Size and Scale	Medium	Aesthetic characteristics including form, line, color, texture, and motion are rated individually above. The Project occupies 21.4% of the available horizontal field of view provided by the simulation. In this context the Project would be readily apparent after even a brief look and would be visible to most casual observers. The object is clearly evident and represents a prominent new feature within a largely unchanged wider visual context. Full views of the proposed Project would be experienced when facing the direction of the Project.
Duration and Reversibility	Fair	Although the proposed Project's lifespan is expected to be 35 years, it will be fully reversible.
Overall Magnitude Rating: Medium to Large		
Overall Impact Level	**Rating**	**Rationale**
Visual Impact Assessment:	Moderate	The proposed Project would form a relatively modest impact to the receptor at this KOP as it would introduce a new focal point on the principal view from this highly sensitive KOP, its prominence being exacerbated by the simple horizontal form of the horizon on which it would be seen. The Project would also lessen the perceived naturalness experienced at the KOP and increase the degree of perceived activity present.

TABLE 5: VIA RATING FORM KOP-MV12 GAY HEAD LIGHTHOUSE					
Section A. KOP Information					
KOP Reference Number: MV12	**Name of KOP:** Gay Head Lighthouse	**KOP Distance from Project:** 33 mi (53 km) **Elevation:** 135.5 feet	**Date visited:** March 3, 2022	**Time of visit:** 2:00pm	**Weather conditions and visibility during visit:** Partly cloudy

Location:
Gay Head Light is a NHRP Historic Property and popular tourist destination located on the elevated Aquinnah Cliffs on the westernmost portion of the island. As with other light stations, maritime setting and unobstructed ocean views to the north and west are a character-defining feature of Gay Head Light.

Visual Impact Receptors (Viewer Groups): Tourists and Recreational Users

Visual Context
The visual context of this KOP is dynamic and changeable in nature, reflected in tidal patterns, as well as variability in light and atmospheric conditions, as well as patterns of recreational use and the frequency and number of tourists and recreational visitors. The scale of the view from this KOP and seaward views across the OCA dominates and forms a crucial aspect of the scenic quality at this KOP, as does its essentially dark condition at night.

Affected Environment

SLCA Context
The KOP is located in the Fields/Meadows LCA as described in Table X.5-13 but is subject to the considerable influence of the neighboring Coastal Scrub, Low-Density Rural Settlement, Coastal Bluff, and the OCA SLCAs.

Key Characteristics of the SLCA and View at KOP Location

- Situated in a flat grassy landscape, the topography at the KOP rises to form a local high point.
- Surrounded by Coastal Scrub, trees, structural buildings, and walking paths.
- Some open views out towards the ocean while others are obstructed by small trees and shrubs.
- During hours of darkness the character of the seascape/landscape at the KOP is influenced by the lighthouse activity along with glimpses of scattered lighting associated with onshore elements such as residential properties, traffic on roads, etc., viewed intermittently nearby. It is also influenced by views across the ocean which contains transient lighting from vessels, navigation aids and moonlight reflecting on the water.

Form	Gently sloping. Influenced by low flat horizon OCA.
Line	Strong undulating linear line where coastal tidal edge meets the beach. Strong linear horizontal and vertical lines from existing fences and infrastructure.
Pattern	Complex patterns due to built forms in foreground and middle ground.
Color	Tan sand and brown treetops contrasting with mosaic of blues of the neighboring ocean. Colors are, however, highly variable, depending on foliage, sea state, and weather/atmospheric conditions.
Texture	Coarse, associated with scrubland, small trees, and built forms.
Movement	Variable, depending upon frequency and number of tourists and recreational users, vehicular traffic, tidal patterns, and the sea state of the neighboring ocean.

TABLE 5: VIA RATING FORM KOP-MV12 GAY HEAD LIGHTHOUSE		
Perceptual Characteristics	Variable, depending upon frequency and number of tourists and recreational visitors, tidal patterns, sea state, as well as seasonal and time of day. Ranging from natural, restful, tranquil, and peaceful to busy/active, exciting, and stimulating. At night the LCA at this KOP contains existing artificial light sources and movement associated with the lighthouse and nearby residential properties and vessel navigational aids.	
B. Contrast, Magnitude of Impact, and Sensitivity Rating [KOP-MV12]		
Description of Projects Appearance in the context of the Affected Environment 155 of the Project turbines would be visible on the distant horizon, offshore, to the southeast. However, during different times of the year and exact positioning, foliage will obstruct partial views towards the proposed project. Rotor movement, while discernible, is unlikely to be immediately apparent due to the slow rotational speed of turbine blades and the distance at which Project would be viewed. The visibility of the Project would be greatest during periods of particularly good visibility and clear skies, and when the turbines are either highlighted or backlit by the sun (e.g., in late afternoon or during the morning) when the turbines would contrast with the color of the clear sky. The Project would also be apparent at night, introducing new artificial flashing light sources and the uncoordinated nature of the flashing light due to intermittent screening of lights by rotors offshore when aviation lighting on turbine nacelles is activated.		
Aesthetic and Perceptual Characteristics[1]	**Rating**	**Degree of Contrast**
Forms	4 Moderate	The proposed Project would not affect the form of the view that dominate the principal outlook from this KOP but would introduce large scale vertical elements to the essentially horizontal form of the skyline that is a key determining characteristic of the visual context to the south and south-east of the KOP.
Line	2 Small	The proposed Project would introduce a complex array of large-scale vertical elements to the flat horizon that forms a key aspect of southern seaward views at this KOP.
Pattern	2 Small	The proposed Project would represent a departure from the current pattern of elements offshore that form a critical context and influence the perception of the seascape at this KOP.
Color	2 Small	The proposed Project's turbine blades, hubs, and nacelles have been rendered at RAL 9010 (Pure White), rendering it relatively recessive against the pale sky. Some contrast is likely, however, during periods of clear visibility when the proposed Project is sunlit or backlit, when color contrast with the sky would be greatest.
Texture	4 Moderate	The proposed Project would introduce coarser elements to the distant horizon that is an important characteristic of this KOP.
Movement	3 Small to Moderate	Whilst the proposed Project would introduce further movement off the distant horizon in views from this KOP in the form of rotor movement, this would not be immediately apparent due to the slow rotor speed anticipated and the distance at which the turbines would be viewed.

[1] Aesthetic and Perceptual Characteristics ratings are adapted from the BLM Visual Resource Management system (see Table X.6-4 in Section X.6.1.6.2). The rest of the ratings (sensitivity, magnitude, and overall impact) are based on slight derivation of BOEM's SLVIA Guidance ratings matrix.

TABLE 5: VIA RATING FORM KOP-MV12 GAY HEAD LIGHTHOUSE		
Receptor Sensitivity Factor	**Rating**	**Rationale**
Susceptibility	High	Receptors are susceptible to changes at this KOP due to the nature of the destination. Viewers come to this location to appreciate the scenic and expansive views from this historic lighthouse. However, there are some obstructions due to trees and the surrounding complexities of built forms.
Value	High	This is a highly valued viewpoint in which receptors visit to appreciate the historic value and expansive views. During the summer months, many tourists visit this lighthouse as a destination.
Overall Sensitivity Rating: High		
Magnitude Factor	**Rating**	**Rationale**
Geographic Extent	Medium	The principal outlook from this KOP is to the northwest into the Vineyard Sound towards the distant Elizabeth Islands The proposed Project would be seen to the southeast, away from the principal view and would be seen distantly, at over 33 mi (53 km).
Size and Scale	Medium	Aesthetic characteristics including form, line, color, texture, and motion are rated individually above. The Project occupies 47.1% of the available horizontal field of view provided by the simulation. In this context the Project would be readily apparent after even a brief look and would be visible to most casual observers. The object is clearly evident and represents a prominent new feature within a largely unchanged wider visual context but would not affect the principal outlook from this KOP.
Duration and Reversibility	Fair	Although the Project's lifespan is expected to be 35 years, the project will be fully reversible.
Overall Magnitude Rating: Medium		
Overall Impact Level	**Rating**	**Rationale**
Visual Impact Assessment:	Moderate	The proposed Project, by implication of the KOP's position to the principal outlook, distance and consequent reduced prominence would represent a relatively modest impact to the receptor at this KOP based on the character, visual amenity, and sensitivity associated with this KOP.

TABLE 6: VIA RATING FORM KOP-MV14 WASQUE POINT TRAIL RESERVATION					
Section A. KOP Information					
KOP Reference Number: KOP-MV14	**Name of KOP:** Wasque Point Trail Reservation	**KOP Distance from Project:** 24 mi (39 km) **Elevation:** 27.5 feet	**Date visited:** June 18, 2021	**Time of visit:** 10:14 am	**Weather conditions and visibility during visit:** Sunny, Clear Skies

Location:
Wasque Point is part of a 200-acre nature reserved located on the south-eastern end of Chappaquidick Island. Long winding trails and dirt roads follow the top of the vegetated bluff through the scrub vegetation and dunes with vast views of the ocean.

Visual Impact Receptors (Viewer Groups): Tourists and Recreational Users

Visual Context
Viewer groups visit Wasque Point to recreate and explore the natural setting of Chappaquiddick Island. Recreation includes surf cast fishing, hunting, swimming, hiking, mountain biking, horseback riding,and photography.

Affected Environment

SLCA Context
The KOP is located on top of a vegetated Coastal Bluff and is under considerable influence of Ocean Beach, OCA, and Coastal Scrub SLCAs, as described in Table X.5-13.

Key Characteristics of the SLCA and View at KOP Location

- Wasque Point is comprised of terraced sandy beaches connected to shifting sandbars that are constantly changing due to strong wind and ocean currents. Above the beach dry soils support pine oak forests, sandplain grasslands, and heathlands. The area is owned and managed by the one of five preservation trusts called the Trustees of Reservations. Lands are managed as ecological preserves and recreation areas supporting residents and seasonal tourists. Unimproved roads connect with primitive parking areas that lead to trails with staircases leading to the beaches. Summer season requires visitors to purchase seasonal or day passes to park and access the trails and beaches.
- The dominant visual elements are comprised of the flat expanse of water, the blue or gray color reflecting the sky, the smooth or choppy texture of the water surface, and the distant horizon line. Scenic integrity is high, with no existing visual intrusions. The dark horizon line provides a distinct linear break between the ocean and the sky. Ocean evaporation from warm summer temperatures often creates a layer of haze between the ocean and the warm blue sky. Conditions range from flat water to choppy to rolling swells. During hours of darkness the character of the seascape/landscape at the KOP is influenced by glimpses of scattered lighting associated with onshore elements such as properties, viewed distantly and intermittently are transient lighting from vessels, navigation aids and also moonlight reflecting on the water.

Form	Level to slightly sloping exposed sandy earthy soils. Steep, eroding vertical cliff dune.
Line	Strong undulating line where coastal tidal edge meets the water and tan sandy beach.
Pattern	Relatively simple.
Color	Pale tan sand contrasting with mosaic of blues and grays of the neighboring open waters. Colors are, however, highly variable, depending on sea state and weather/atmospheric conditions.
Texture	Ranging from smooth in respect of the beach and adjacent open waters, to coarse in respect of inland coastal scrub and forests/woodlands.
Movement	Variable, depending upon frequency and number of recreational users and residents, tidal patterns and the sea state of the neighboring OCA.

TABLE 6: VIA RATING FORM KOP-MV14 WASQUE POINT TRAIL RESERVATION	
Perceptual Characteristics	Variable, depending upon frequency and number of recreational users of the beach, tidal patterns, sea state, as well as seasonal and time of day. Ranging from natural, restful, tranquil and peaceful to busy/active, exciting, and stimulating. At night the view at this KOP contains a small proportion of existing artificial light sources and movement associated with marine navigational aids.

B. Contrast, Magnitude of Impact, and Sensitivity Rating [KOP-MV014)

Description of Projects Appearance in the context of the Affected Environment

145 of the Project turbines would be visible on the distant horizon, offshore, to the southeast. Approximately 10 of the Project's turbines would be entirely screened by the curvature of the earth. Rotor movement, while discernible, is unlikely to be immediately apparent due to the slow rotational speed of turbine blades and the distance at which Project would be viewed. The visibility of the Project would be greatest during periods of particularly good visibility and clear skies, and when the turbines are backlitby the sun and would contrast with the color of the clear sky. The Project would also be apparent at night, introducing new artificial flashing light sources and the uncoordinated nature of the flashing light due to intermittent screening of lights by rotors offshore when aviation lighting on turbinenacelles is triggered. Such effects would, however, be of limited frequency and duration.

Aesthetic and Perceptual Characteristics[1]	**Rating**	**Degree of Contrast**
Forms	2 Small	The proposed Project would introduce large scale vertical elements to the essentially horizontal horizon that is a key determining characteristic of the landscape at this KOP.
Line	2 Small	The proposed Project would introduce a complex array of large-scale vertical elements to the flat horizon that forms a key aspect of seaward views out of the view at this KOP.
Pattern	2 Small	The proposed Project would affect the pattern of characteristic elements offshore, thereby influencing the perception of the seascape pattern from this KOP.
Color	2 Small	The proposed Project's turbine blades, hubs, and nacelles have been rendered at RAL 9010 (Pure White), rendering it relatively recessive against the pale sky. Some contrast is likely, however, during periods of clear visibility when the proposed Project is sunlit or backlit, when color contrast with the sky would be greatest.
Texture	2 Small	The proposed Project would introduce coarser elements to the distant horizon that is an important characteristic of this KOP.
Movement	2 Small	While the proposed Project would introduce further movement to the distant horizon in views from this KOP in the form of rotor movement, this would not be immediately apparent due to the slow rotor speed anticipated and the distance at which the turbines would be viewed.
Receptor Sensitivity Factor	**Rating**	**Rationale**
Susceptibility	High	Receptor susceptibility is high at this KOP due to the expansive views out towards the vast OCA with no current intrusions, which is a major attraction to this trail.
Value	High	This walking trail is valued for its tranquil and remote location with pristine views. It is a popular walking area for tourists and recreational users and is part of the Trustees of Reservation.

[1] Aesthetic and Perceptual Characteristics ratings are adapted from the BLM Visual Resource Management system (see Table X.6-4 in Section X.6.1.6.2). The rest of the ratings (sensitivity, magnitude, and overall impact) are based on slight derivation of BOEM's SLVIA Guidance ratings matrix.

TABLE 6: VIA RATING FORM KOP-MV14 WASQUE POINT TRAIL RESERVATION		
Overall Sensitivity Rating: High		
Magnitude Factor	**Rating**	**Rationale**
Geographic Extent	Large	The proposed Project is located towards the center of the horizontal field of view. The principal outlook from this KOP is to the south into the Atlantic Ocean where the proposed project is located, and the simulation is oriented. The Project would be seen distantly at over 24 mi (39 km).
Size and Scale	Medium	Aesthetic characteristics including form, line, color, texture, and motion are rated individually above. The Project occupies 20.2% of the available horizontal field of view provided by the simulation. In this context the Project would be apparent after a brief look and would be visible to most casual observers. The object is clearly evident and represents a prominent new feature within a largely unchanged wider visual context. Full views of the proposed Project would be experienced when facing the direction of the Project.
Duration and Reversibility	Fair	Although the proposed Project's lifespan is expected to be 35 years, it will be fully reversible.
Overall Magnitude Rating: Medium		
Overall Impact Level	**Rating**	**Rationale**
Visual Impact Assessment:	Moderate	The proposed Project would form a relatively modest impact to the receptor at this KOP as it would introduce a new focal point on the principal view from this highly sensitive KOP, its prominence being exacerbated by the simple horizontal form of the horizon on which it would be seen. The Project would also lessen the perceived naturalness experienced at the KOP and increase the degree of perceived activity present.

TABLE 7: VIA RATING FORM KOP-MV15 WASQUE AVENUE ENTRY KIOSK					
Section A.KOP Information					
KOP Reference Number: MV15	**Name of KOP:** Wasque Avenue Entry Kiosk	**KOP Distance from Project:** 24 mi (39 mi) **Elevation:** 42.5 feet	**Date visited:** June 18, 2021	**Time of visit:** 11:20 am	**Weather conditions and visibility during visit:** Sunny, Clear Skies
Location: Wasque Avenue viewpoint is located just before the kiosk at the entry to Wasque Point Beach on Chappaquiddick Island.					
Visual Impact Receptors (Viewer Groups): Tourists and Recreational Users					
Visual Context Viewer groups visit Wasque Point to recreate and experience the natural and remote character of Chappaquiddick Island. Recreation includes surf cast fishing, hunting, swimming, hiking, mountain biking, horseback riding, and photography.					
Affected Environment					
SLCA Context The KOP is located in the Coastal Scrub Bush LCA as described in Table X.5-13.					
Key Characteristics of the SLCA and View at KOP Location • The view across the coastal scrub abruptly ends at the top of steep eroding dunes above the beach. Dirt access roads cut through the scrub shrub leading to recreation trails and beach access parking areas. Ocean trails area located at the top of the dune and run horizontally across the landscape. The area is owned and managed by the one of five preservation trusts called the Trustees of Reservations. Lands are managed as ecological preserves and recreation area supporting residents and seasonal tourists. Unimproved roads connect with primitive parking areas that lead to trails with staircases leading to the beaches. During the summer season, visitors are required to purchase season or day passes to park and access the trails and beaches. • The dominant visual elements include pine oak forest, scrub shrub and brown, tan roads cuts through the vegetation. The background comprises a low horizontal horizon formed by the OCA, the blue or gray color reflecting the sky. Seen at distance, the ocean texture has a generally smooth texture in contrast with the coarser vegetation in the foreground and middle ground of the view from the KOP. Setting is mostly natural. Residential structures are set within the forested areas, do not exceed the scale of the existing forest vegetation, and are mostly hidden from the roadways. The coastal scrub, beach, and eroding dunes are pristine. View to the horizon is partially obstructed by coastal vegetation.					
Form	Level/gently undulating.				
Line	Strong level, horizontal				
Pattern	Relatively simple.				
Color	Pale tan sand contrasting with mosaic of greens of the heath and forest cover and the blues and grays of the neighboring open waters of the OCA. Colors are, however, highly variable, depending on sea state and weather/atmospheric conditions.				
Texture	Ranging from coarse in respect of coastal scrub and inland forests and woodlands, to smooth in respect of the adjacent open waters.				
Movement	Variable, depending upon frequency and number of recreational users and residents, tidal patterns and the sea state of the neighboring OCA.				

TABLE 7: VIA RATING FORM KOP-MV15 WASQUE AVENUE ENTRY KIOSK	
Perceptual Characteristics	Variable, depending upon frequency and number of recreational users, tidal patterns, sea state, as well asseasonal and time of day. Ranging from natural, restful, tranquil and peaceful to busy/active, exciting, and stimulating. At night the view at this KOP contains a small proportion of existing artificial light sources and movement associated with nearby residential properties and vessel navigational aids.

B. Contrast, Magnitude of Impact, and Sensitivity Rating [KOP-MV15]

Description of Projects Appearance in the context of the Affected Environment

151 of the Project turbines would be visible on the distant horizon, offshore, to the south. Approximately 4 of the Project's turbines would be entirely screened by the curvature of the earth. The view towards the Project is partially screened by a stand of pine trees. Rotor movement, while discernible, is unlikely to be immediately apparent due to the slow rotational speed of turbine blades and the distance at which Project would be viewed. The visibility of the Project would be greatest during periods of particularly good visibility and clear skies, and when the turbines are backlit by the sun and would contrast with the color of the clear sky (i.e., during the morning and late afternoon). The Project would also be apparent at night, introducing new artificial flashing light sources and the uncoordinated nature of the flashing light due to intermittent screening of lights by rotors offshore. However, this lighting would be illuminated infrequently and for short durations.

Aesthetic and Perceptual Characteristics[1]	Rating	Degree of Contrast
Form	3 Small to Moderate	The proposed Project would introduce large scale vertical elements to the essentially horizontal horizon that is a key characteristic of the view at this KOP.
Line	4 Moderate	The proposed Project would introduce a complex array of large-scale vertical elements to the flat horizon that forms a key aspect of seaward views at this KOP.
Pattern	3 Small to Moderate	The proposed Project would affect the pattern of characteristic elements offshore, thereby influencing the perception of the seascape pattern from this KOP.
Color	2 Small	The proposed Project's turbine blades, hubs, and nacelles have been rendered at RAL 9010 (Pure White), rendering it relatively recessive against the sky. Some contrast is likely, however, during periods of clear visibility when the proposed Project is sunlit or backlit, when color contrast with the sky would be greatest (i.e., during the morning and in late afternoon).
Texture	3 Small to Moderate	The proposed Project would not alter the texture of the SLCA at this KOP but would introduce coarser elements to the distant horizon that is an important characteristic of this KOP.
Movement	3 Small to Moderate	While the proposed Project would introduce further movement to the distant horizon in views from this KOP in the form of rotor movement, this would not be immediately apparent due to the slow rotor speed anticipated and the distance at which the turbines would be viewed.

[1] Aesthetic and Perceptual Characteristics ratings are adapted from the BLM Visual Resource Management system (see Table X.6-4 in Section X.6.1.6.2). The rest of the ratings (sensitivity, magnitude, and overall impact) are based on slight derivation of BOEM's SLVIA Guidance ratings matrix.

TABLE 7: VIA RATING FORM KOP-MV15 WASQUE AVENUE ENTRY KIOSK		
Receptor Sensitivity Factor	**Rating**	**Rationale**
Susceptibility	High	Receptor susceptibility is high at this KOP due to the expansive views out across the coastal scrub landscape towards the vast OCA, which is a major attraction to this remote location.
Value	High	This KOP is valued for its tranquil and remote location with pristine views. It is a popular walking area for tourists and recreational users and is part of the Trustees of Reservation. This KOP is located at the entryway where a lot of vehicular and foot traffic must occur to enter the reservation.
Overall Sensitivity Rating: High		
Magnitude Factor	**Rating**	**Rationale**
Geographic Extent	Medium	The proposed Project is located in the center of the horizontal field of view, however a large portion of the central extent of the turbines is obstructed by pine trees. The principal outlook from this KOP is to the south towards the Atlantic Ocean where the proposed Project is located, and the simulation is oriented. The Project would be seen distantly at over 24 mi (39 km).
Size and Scale	Medium	Aesthetic characteristics including form, line, color, texture, and motion are rated individually above. The Project occupies 23.1% of the available horizontal field of view provided by the simulation. In this context the Project would be visible to most casual observers. The object is clearly evident and represents a prominent new feature within a largely unchanged wider visual context. Partial views of the proposed Project would be experienced due to the varying receptor activities at the KOP. Some receptors may pull off for the view while others may be driving by and only take in this view for a short duration of time.
Duration and Reversibility	Fair	Although the proposed Project's lifespan is expected to be 35 years, it will be fully reversible.
Overall Magnitude Rating: Medium		
Overall Impact Level	**Rating**	**Rationale**
Visual Impact Assessment:	Moderate	The proposed Project would form a relatively modest impact to the receptor at this KOP as it would introduce a new focal point on the principal view from this highly sensitive and remote KOP, its prominence being exacerbated by the simple flat form of the horizon on which it would be seen and the movement of turbine rotors, but partially screened by existing stand of trees.

TABLE 8: VIA RATING FORM MV16 SQUIBNOCKET BEACH					
Section A. KOP Information					
KOP Reference Number: MV16	**Name of KOP:** Squibnocket Beach	**KOP Distance from Project:** 29 mi (47 km) **Elevation:** 14.5 feet	**Date visited:** June 17, 2021	**Time of visit:** 5:05 pm	**Weather conditions and visibility during visit:** Sunny, Partly Cloudy
Location: Squibnocket Beach is located towards the west end of the island of Martha's Vineyard, just east of Squibnocket Pond. The beach is partially sandy with an abundance of pebbles and rocks. Residential homes are set back and up from the beach area. Beside the stretchof beach are the Nashaquitsa Cliffs, providing a dramatic transition from land to ocean. Public trails lead above the beach and on to the tops of the cliffs, eventually connecting to private backyards.					
Visual Impact Receptors (Viewer Groups): Recreational Users and Tourists					
Visual Context Viewers will experience the scene from the beach. Residences are behind the beach looking out towards the ocean. Recreational users come to this beach to surf, swim, fish, relax, and enjoying the views.					
Affected Environment					
SLCA Context The KOP is located in the Ocean Beach SCA as described in Table X.5-13 and is under considerable influence of the OCA, Salt Pond/Tidal Marsh, Forests/Woodlands, and Low-Density Rural Settlement.					
Key Characteristics of the SLCA and View at KOP Location • Squibnocket Beach comprises coarse sands, pebbles and rocks. It is known for its good surfing conditions. The beach is neighbored by the Squibnocket Pond and salt marsh on one side and cliffs and hiking trails on the other. Paved roads lead to the large parking area. • A dominant visual element that exerts a considerable influence on the view at this KOP is the 'flat', open expanse of the neighboring Squibnocket Pond and OCA SLCA, the blue or gray color reflecting the sky, the smooth or choppy texture of the water surface, and the distant horizon line. Ocean evaporation from warm summer temperatures often creates a layer of haze between the ocean and the warm blue sky. Conditions range from flat water to choppy to rolling swells.					
Form	Level to slightly sloping, rocky beach.				
Line	Strong level, horizontal.				
Pattern	Relatively simple.				
Color	Pale tan sand and a multiplicity of colored pebbles and rocks contrast with mosaic of blues and grays of the neighboring open waters of the ocean. Colors are, however, highly variable, depending on sea state and weather/atmospheric conditions.				
Texture	Ranging from smooth in respect of the adjacent open waters, to coarse in respect of rocky beach and inland forests and woodlands.				
Movement	Variable, depending upon frequency and number of recreational users and residents, tidal patterns and the sea state of the neighboring OCA.				

TABLE 8: VIA RATING FORM MV16 SQUIBNOCKET BEACH			
Perceptual Characteristics	Variable, depending upon frequency and number of recreational users of the beach, tidal patterns, sea state, as well as seasonal and time of day. Ranging from natural, restful, tranquil and peaceful to busy/active, exciting, and stimulating. At night the view at this KOP contains a small proportion of existing artificial light sources and movement associated with nearby residential properties and vessel navigational aids.		
B. Contrast, Magnitude of Impact, and Sensitivity Rating [KOP-MV16]			
Description of Projects Appearance in the context of the Affected Environment 153 of the Project turbines would be visible on the distant horizon, offshore, to the south. Approximately 2 of the Project's turbines would be entirely screened by the curvature of the earth. Rotor movement, while discernible, is unlikely to be immediately apparent due to the slow rotational speed of turbine blades and thedistance at which Project would be viewed. The visibility of the Project would be greatest during periods of particularly good visibility and clear skies, and when the turbines are backlitby the sun and would contrast with the color of the clear sky. The Project would also be apparent at night, introducing new artificial flashing light sources and the uncoordinated nature of the flashing light due to intermittent screening of lights by rotors offshore on the nacelle of the proposed turbines in seaward views when the lights are activated. Such lighting impacts would be infrequent and of short duration.			
Aesthetic and Perceptual Characteristics[1]	**Rating**	**Degree of Contrast**	
Form	2 Small	The proposed Project would introduce large scale vertical elements to the essentially horizontal horizon that is a key determining characteristic of the landscape at this KOP.	
Line	2 Small	The proposed Project would introduce a complex array of large-scale vertical elements to the flat horizon that forms a key aspect of seaward views out of the SLCA at this KOP.	
Pattern	2 Small	The proposed Project would represent a change to the development pattern in the vicinity an introduce engineered forms to an essentially undeveloped backdrop to the SLCA.	
Color	2 Small	The proposed Project's turbine blades, hubs, and nacelles have been rendered at RAL 9010 (Pure White), rendering it relatively recessive against the pale sky. Some contrast is likely, however, during periods of clear visibility when the proposed Project is sunlit or backlit, when color contrast with the sky would be greatest.	
Texture	2 Small	The proposed Project would introduce coarser elements to the distant horizon that is an important characteristic of this KOP.	
Movement	2 Small	While the proposed Project would introduce further movement to the distant horizon in views from this KOP in the form of rotor movement, this would not be immediately apparent due to the slow rotor speed anticipated and the distance at which the turbineswould be viewed.	
Receptor Sensitivity Factor	**Rating**	**Rationale**	
Susceptibility	High	Receptor susceptibility is high at this KOP due to the expansive views out towards the vast OCA with no current intrusions, which is a major attraction to this beach.	

[1] Aesthetic and Perceptual Characteristics ratings are adapted from the BLM Visual Resource Management system (see Table X.6-4 in Section X.6.1.6.2). The rest of the ratings (sensitivity, magnitude, and overall impact) are based on slight derivation of BOEM's SLVIA Guidance ratings matrix.

TABLE 8: VIA RATING FORM MV16 SQUIBNOCKET BEACH		
Value	High	This is a busy beach filled with recreational users, especially during the summer months. This beach is one of the main publicly accessible beaches on the western side of the island and is greatly valued and utilized by the residential community set behind the beach, between Squibnocket Pond and Menemsha Pond.
Overall Sensitivity Rating: High		
Magnitude Factor	**Rating**	**Rationale**
Geographic Extent	Small	The proposed Project is located towards the right side of the horizontal field of view. The principal outlook from this KOP is to the southeast into the Atlantic Ocean where the proposed project is located, and the simulation is oriented. The Project would, however, be seen distantly at over 29 mi (47 km).
Size and Scale	Medium	Aesthetic characteristics including form, line, color, texture, and motion are rated individually above. The Project occupies 26.9% of the available horizontal field of view provided by the simulation. In this context the Project would be readily apparent after even a brief look and would be visible to most casual observers. The object is evident and represents a prominent new feature within a largely unchanged wider visual context.
Duration and Reversibility	Fair	Although the proposed Project's lifespan is expected to be 35 years, it will be fully reversible.
Overall Magnitude Rating: Small		
Overall Impact Level	**Rating**	**Rationale**
Visual Impact Assessment:	Moderate	The proposed Project would form a relatively modest impact to the receptor at this KOP as it would introduce a new focal point on the principal view from this highly sensitive KOP and medium magnitude. Its prominence would be exacerbated by the simple horizontal form of the horizon on which it would be seen. The Project would lessen the perceived naturalness experienced at the KOP and increase the degree of perceived activity present.

TABLE 9: VIA RATING FORM KOP-MV25 WASQUE AVENUE ENTRY KIOSK NIGHT					
Section A. KOP Information					
KOP Reference Number: MV25	**Name of KOP:** Wasque Avenue Entry Kiosk Night	**KOP Distance from Project:** 24 mi (39 mi) **Elevation:** 42.5 feet	**Date visited:** March 3, 2022	**Time of visit:** 6:45 pm	**Weather conditions and visibility during visit:** Partly Cloudy

Location:
Wasque Avenue viewpoint is located just before the kiosk at the entry to Wasque Point Beach on Chappaquiddick Island.

Visual Impact Receptors (Viewer Groups): Recreational Users and Tourists

Visual Context
Viewer groups visit Wasque Point to recreate and experience the natural character of Chappaquiddick Island.Recreation includes surf cast fishing, hunting, ice-skating on inland ponds, swimming, hiking, mountain biking,horseback riding, and photography.

Affected Environment

SLCA Context
The KOP is located in the Coastal Scrub Bush LCA as described in Table X.5-13.

Key Characteristics of the SLCA and View at KOP Location
During daytime hours, the key characteristics of the landscape character at this KOP are as described below.

- The view across the coastal scrub abruptly ends at the top of steep eroding dunes above the beach. Dirt access roads cut through the scrub shrub leading to recreation trails and beach access parking areas. Ocean trails area located at the top of the dune and run horizontally across the landscape. The area is owned and managed by the one of five preservation trusts called the Trustees of Reservations. Lands are managed as ecological preserves and recreation area supporting residents and seasonal tourists. Unimproved roads connect with primitive parking areas that lead to trails with staircases leading to the beaches. During the summer season, visitors are required to purchase season or day passes to park and access the trails and beaches.
- The dominant visual elements include pine oak forest, scrub shrub and brown, tan roads cuts through the vegetation. The background comprises a low horizontal horizon formed by the OCA, the blue or gray color reflecting the sky. Seen at distance, the ocean texture has a generally smooth texture in contrast with the coarser vegetation in the foreground and middle ground of the view from the KOP. Scenic integrity is high due to the remote location of the reservation land. Setting is mostly natural. Residential structuresare set within the forested areas, do not exceed the scale of the existing forest vegetation, and are mostly hidden from the roadways. The coastal scrub, beach, and eroding dunes are pristine. View to the horizon is partially obstructed by coastal vegetation.
- As daylight fades and after dark the foregoing aspects become less apparent and can be entirely obscured leaving the key characteristic of the seascape/landscape at this KOP as an essentially dark environment with few prominent sources of artificial lighting. In this context the outlook is essentially dark apart from any ambient light/residual light in the sky.

Form	Level/gently undulating.
Line	Strong level, horizontal
Pattern	Relatively simple.
Color	Uniform dark blue/black color of the foreground and sky after the sun sets with Ombre sky towards the west from dark blue/black to medium blue.

TABLE 9: VIA RATING FORM KOP-MV25 WASQUE AVENUE ENTRY KIOSK NIGHT	
Texture	Ranging from smooth in respect of the beach and adjacent open waters, to coarse in respect of inland forests and woodlands.
Movement	Variable, depending upon frequency and number of recreational users and residents, tidal patterns and the sea state of the neighboring OCA.
Perceptual Characteristics	Variable, depending upon frequency and number of recreational users of the beach, tidal patterns, sea state, as well as seasonal and time of day. Ranging from natural, restful, tranquil and peaceful to busy/active, exciting, and stimulating. At night the SLCA at this KOP contains a small proportion of existing artificial light sources and movement associated with nearby residential properties.

B. Contrast, Magnitude of Impact, and Sensitivity Rating [KOP-MV25]

Description of Projects Appearance in the context of the Affected Environment
151 of the Project turbines would be visible on the distant horizon, offshore, to the south. Approximately 4 of the Project's turbines would be entirely screened by the curvature of the earth. The view towards the Project is partially screened by a stand of pine trees. The key aspect of the proposed Project that would be apparent after dark would be 'flickering' of turbine lighting when this is activated. Whilst the sequence of 'blinking' would be coordinated, rotor movement could serve to randomize how the lights would be seen as blades pass in front of the lights. The incidence of this would be dependent upon the direction of the wind and whether rotors are oriented towards the KOP.

Aesthetic and Perceptual Characteristics[1]	Rating	Degree of Contrast
Form	3 Small to Moderate	After dark, key characteristic forms in the SLCA at this KOP would be obscured. However, the prominent horizontal form of the Ocean may still be evident due to illumination by moonlight or ambient light. The lights on the proposed Project's turbines would not alter this but would detract from the horizon.
Line	4 Moderate	The proposed Project would not alter the line of the SLCA itself but would introduce a complex assemblage of flickering lights above the flat horizon that forms a key aspect of seaward views out of the SLCA at this KOP.
Pattern	3 Small to Moderate	The proposed Project would not affect the pattern of elements within the OceanBeach SCA.
Color	2 Small	The lights on the proposed Project's turbines would introduce prominent points of red into a night seascape that is generally dominated by more recessive/muted colors. However, during moonlit evenings the lights are likely to appear more recessive than the light reflected off the sea's surface.
Texture	3 Small to Moderate	The proposed Project would not alter the texture of the SLCA at this KOP.

[1] Aesthetic and Perceptual Characteristics ratings are adapted from the BLM Visual Resource Management system (see Table X.6-4 in Section X.6.1.6.2). The rest of the ratings (sensitivity, magnitude, and overall impact) are based on slight derivation of BOEM's SLVIA Guidance ratings matrix.

TABLE 9: VIA RATING FORM KOP-MV25 WASQUE AVENUE ENTRY KIOSK NIGHT		
Movement	3 Small to Moderate	Rotor movement would not be evident after dark but would be experienced as randomized flickering of turbine lights when they are activated.
Receptor Sensitivity Factor	**Rating**	**Rationale**
Susceptibility	High	Receptor susceptibility is high at this KOP due to the expansive views out across the coastal scrub landscape towards the vast OCA, which is a major attraction to this remote location.
Value	High	This KOP is valued for its tranquil and remote location with pristine views. It is a popular walking area for tourists and recreational users and is part of the Trustees of Reservation. This KOP is located at the entryway where a lot of vehicular and foot traffic must occur to enter the reservation.
Overall Sensitivity Rating: High		
Magnitude Factor	**Rating**	**Rationale**
Geographic Extent	Medium	The principal outlook from this KOP is to the south towards the Atlantic Ocean where the proposed Project is located, and the simulation is oriented. The proposed Project is located in the center of the view, however a large portion of the central extent of the turbines is obstructed by pine trees. The Project would be seen distantly at over 24 mi (39 km).
Size and Scale	Medium	Aesthetic characteristics including form, line, color, texture, and motion are rated individually above. The Project occupies 23.1% of the available horizontal field of view provided by the simulation. In this context the Project would be visible to most casual observers. The object is clearly evident and represents a prominent new feature within a largely unchanged wider visual context. Partial views of the proposed Project would be experienced due to the varying receptor activities at the KOP. Some receptors may pull off for the view while others may be driving by and only take in this view for a short duration of time.
Duration and Reversibility	Fair	Although the proposed Project's lifespan is expected to be 35 years, it will be fully reversible.
Overall Magnitude Rating: Medium		
Overall Impact Level	**Rating**	**Rationale**
Visual Impact Assessment:	Moderate	The proposed Project would form a relatively modest impact to the receptor at this KOP as it would introduce a new focal point on the principal view from this highly sensitive and remote KOP, its prominence being exacerbated by the simple flat form of the horizon on which it would be seen and the movement of turbine rotors, but partially screened by existing stand of trees.

TABLE 10: VIA RATING FORM KOP-MV26 PEAKED HILL					
Section A. KOP Information					
KOP Reference Number: MV26	**Name of KOP:** Peaked Hill	**KOP Distance from Project:** 30 mi (49 mi) **Elevation:** 306.5 feet	**Date visited:** March 3, 2022	**Time of visit:** 12:10 pm	**Weather conditions and visibility during visit:** Clear skies, sunny, windy
Location: Peaked Hill is the highest elevation point on Martha's Vineyard. Surrounding the viewpoint there are many hiking trails, trees, farmland, and a radio tower. This summit provides panoramic views of the southern coastline and remnants of old military bunkers. Peaked Hill Reservation is part of the Martha's Vineyard Land Bank.					
Visual Impact Receptors (Viewer Groups): Recreational Users and Tourists					
Visual Context Viewer groups visit Peaked Hill to hike and experience the natural character and highest viewpoint on Martha's Vineyard.					
Affected Environment					
SLCA Context The KOP is located in the Forests/Woodlands and Low Density Rural Settlement LCA as described in Table X.5-13.					
Key Characteristics of the SLCA and View at KOP Location • Woodlands dominated the view out towards the ocean, with only a sliver of open waters visible between the tree tops and horizon line. Dirt recreational walking paths cut through the woodlands leading to viewpoints and picnic benches. Occasional open fields are present between woodlands where residential homes are scattered throughout the area. The area is owned and managed by the Martha's Vineyard Land Bank. Lands are managed as recreation areas for the public enjoyment of nature. Unimproved roads connect with primitive parking areas that lead to trails with staircases leading to the beaches. • The dominant visual elements include pine oak forest, scrub shrub and brown, tan roads cuts through the vegetation. The background comprises a low horizontal horizon formed by the OCA, the blue or gray color reflecting the sky. Seen at distance, the ocean texture has a generally smooth texture in contrast with the coarser vegetation in the foreground and middle ground of the view from the KOP. Setting is mostly natural. Residential structures set within the forested areas do not exceed the scale of the existing forest vegetation and are mostly hidden from the viewpoint. View to the horizon is partially obstructed by coastal vegetation.					
Form	Mounded (viewpoint) to sloping landform.				
Line	Strong level, horizontal				
Pattern	Relatively simple.				
Color	Brown and tan shades of trees against the crispy blue sky.				
Texture	Mostly coarse in respect of inland forests and woodlands.				
Movement	Some movement of the treetops with the wind. Variable, depending upon tidal patterns and the sea state of the neighboring OCA.				
Perceptual Characteristics	Variable, depending upon wind, tidal patterns, sea state, as well asseasonal and time of day. Ranging from natural, restful, tranquil and peaceful to somewhat busy destination. At night the SLCA at this KOP contains a small proportion of existing artificial light sources and movement associated with nearby residential properties.				

TABLE 10: VIA RATING FORM KOP-MV26 PEAKED HILL		
B. Contrast, Magnitude of Impact, and Sensitivity Rating [KOP-MV26]		
Description of Projects Appearance in the context of the Affected Environment 155 of the Project turbines would be visible on the distant horizon, offshore, to the south. However, views towards the proposed Project are partially screened by trees. Rotor movement, while discernible, is unlikely to be immediately apparent due to the slow rotational speed of turbine blades and the distance at which Project would be viewed. The visibility of the Project would be greatest during periods of particularly good visibility and clear skies, and when the turbines are backlit by the sun and would contrast with the color of the clear sky (i.e., during the morning and late afternoon). The Project would also be apparent at night, introducing new artificial flashing light sources and the uncoordinated nature of the flashing light due to intermittent screening of lights by rotors offshore. However, this lighting would be illuminated infrequently and for short durations.		
Aesthetic and Perceptual Characteristics[1]	**Rating**	**Degree of Contrast**
Form	3 Small to Moderate	The proposed Project would introduce large scale vertical elements to the essentially horizontal horizon that is a key characteristic of the landscape at this KOP.
Line	4 Moderate	The proposed Project would introduce a complex array of large-scale vertical elements to the flat horizon that forms a key aspect of seaward views at this KOP.
Pattern	3 Small to Moderate	The proposed Project would not affect the pattern of elements of the views of the Forests/Woodlands and Low Density Rural Settlement.
Color	2 Small	The proposed Project's turbine blades, hubs, and nacelles have been rendered at RAL 9010 (Pure White), rendering it relatively recessive against the sky. Some contrast is likely, however, during periods of clear visibility when the proposed Project is sunlit or backlit, when color contrast with the sky would be greatest (i.e., during the morning and in late afternoon).
Texture	3 Small to Moderate	The proposed Project would not alter the texture of the SLCA at this KOP but would introduce coarser elements to the distant horizon that is an important characteristic of this KOP.
Movement	3 Small to Moderate	While the proposed Project would introduce further movement to the distant horizon in views from this KOP in the form of rotor movement, this would not be immediately apparent due to the slow rotor speed anticipated and the distance at which the turbines would be viewed.
Receptor Sensitivity Factor	**Rating**	**Rationale**
Susceptibility	High	Receptors visit this KOP as the highest point on Martha's Vineyard, making them highly susceptible to changes to the views from this hilltop as they are focused on the views. The views are expansive out across the woodlands towards the OCA.
Value	High	Value is high as Peaked Hill is associated with the Martha's Vineyard Land Bank and the highest point on the island. There is a significant amount of foot traffic, especially from those community members that reside nearby.

[1] Aesthetic and Perceptual Characteristics ratings are adapted from the BLM Visual Resource Management system (see Table X.6-4 in Section X.6.1.6.2). The rest of the ratings (sensitivity, magnitude, and overall impact) are based on slight derivation of BOEM's SLVIA Guidance ratings matrix.

TABLE 10: VIA RATING FORM KOP-MV26 PEAKED HILL		
Overall Sensitivity Rating: High		
Magnitude Factor	**Rating**	**Rationale**
Geographic Extent	Small	The proposed Project is located towards the right side of the horizontal field of view. The principal outlook from this KOP ranges from the east to the west, where views to the OCA across treetops are present. The simulation for this KOP is oriented southeast, part of the principal view. The Project would be seen distantly at over 30 mi (49 km).
Size and Scale	Medium	Aesthetic characteristics including form, line, color, texture, and motion are rated individually above. The Project occupies 21.3% of the available horizontal field of view provided by the simulation. In this context the Project would be readily apparent after even a brief look and would be visible to most casual observers. The object is clearly evident and represents a prominent new feature within a largely unchanged wider visual context but would not affect the principal outlook from this KOP as views extent very wide. As this KOP is a highpoint, full views of the proposed Project would be experienced when facing the direction of the Project.
Duration and Reversibility	Fair	Although the proposed Project's lifespan is expected to be 35 years, it will be fully reversible.
Overall Magnitude Rating: Medium		
Overall Impact Level	**Rating**	**Rationale**
Visual Impact Assessment:	Moderate	The proposed Project, by implication of the KOP's position to the principal outlook, distance, elevation, and prominence would represent a relatively modest impact to the sensitive receptors at this KOP.

NANTUCKET

TABLE 11: VIA RATING FORM KOP-NA01: CISCO BEACH, NANTUCKET					
Section A. KOP Information					
KOP Reference Number: NA01	**Name of KOP:** Cisco Beach	**KOP Distance from Project:** 20.56 mi (33.01 km) **Elevation:** 13 ft AMSL	**Date visited:** September 17, 2020	**Time of visit:** 1:22 PM	**Weather conditions and visibility during visit:** Sunny, clear skies
Location: Cisco Beach is an expanse of beach located on the southwestern end of Nantucket. The dunes rise above the beach behind the photo location. The form of Cisco Beach changes seasonally based on strong tides and currents and as the dunes erode overtime. Beach amenities include a large parking area, surfboard rental station, food cart, and temporary toilets with hand washing stations. This is a developed recreation area and popular destination by recreational users and tourists looking to sunbathe, surf, socialize, picnic, and view the sunset. Behind the beach and grassy dunes lies the Cisco residential neighborhood east of a saltwater Hummock Pond.					
Visual Impact Receptors (Viewer Groups): Recreational Users and Tourists.					
Visual Context The visual context of this KOP is dynamic and changeable in nature, reflected in tidal patterns, as well as variability in light and atmospheric conditions, and patterns of recreational use and the frequency and number of recreational visitors. The scale of the view from this KOP and seaward views across the OCA dominates and forms a crucial aspect of the scenic quality at this KOP, as does its essentially dark condition at night.					
Affected Environment					
SLCA Context The KOP is located in the Ocean Beach SCA as described in Table X.5-13, but also subject to the considerable influence of the neighboring OCA.					
Key Characteristics of the SLCA and View at KOP Location • The dominant visual impressions are the broad, flat expanse of water, the blue or gray color reflecting the sky, the smooth or choppy texture of the water surface, and the distant horizon line. Scenic integrity is high, with few or no visual intrusions. Commercial fishing and recreational boats are seen crossing by the viewing area, and views of the Project can be from any point on the ocean surface on the south and west sides of the islands. Conditions range from flat water to choppy to rolling swells. Ferry boats are limited to inland waters on the opposite side of the islands away from the Project. • Key elements of the view are open water, white and reflective color, and a dark, strong horizon line. Water breaks on the beach. There are no visual intrusions other than people surfing and swimming. • Cisco beach has a slight curvilinear form, tan color, and strong variable edge where the ocean tide meets the beach. During hours of darkness the view at the KOP is influenced by glimpses of scattered lighting associated with onshore elements such as properties and traffic on roads viewed intermittently through the dune system. It is also influenced by views across the OCA which contains transient lighting from vessels, navigation aids, and moonlight reflecting on the water.					

TABLE 11: VIA RATING FORM KOP-NA01: CISCO BEACH, NANTUCKET	
Form	Essentially flat/gently sloping. Influenced by low flat horizon of neighboring OCA.
Line	Strong line where beach meets sea, but variable, depending upon tidal action and water state. Key aspect of character is also derived from dominance of low flat line of the horizon on the neighboring OCA , which is a key influence on the Ocean Beach.
Pattern	Simple unified linear configuration.
Color	White sand contrasting with mosaic of blues and grays of the neighboring OCA. Colors are, however, highly variable, depending on sea state and weather/atmospheric conditions.
Texture	Smooth, but with some variation associated with the neighboring OCA which can present rougher textures in rough sea states.
Movement	Variable, depending upon frequency and number of recreational users of the beach, tidal patterns and the sea state of the neighboring OCA.
Perceptual Characteristics	Variable, depending upon frequency and number of recreational users of the beach, tidal patterns, sea state, as well as seasonal and time of day. Ranging from natural, restful, tranquil and peaceful to busy/active, exciting, stimulating and dangerous. At night the quieter and essential dark conditions experienced at this KOP emphasize the sense of naturalness and tranquility.

B. Contrast, Magnitude of Impact, and Sensitivity Rating (KOP-NA01]

Description of Projects Appearance in the context of the Affected Environment

The proposed Project would be visible on the distant horizon, offshore, to the southwest. 130 of the Project turbines would be visible. Approximately 25 of the Project's turbines would be entirely screened by the curvature of the earth. Rotor movement, while discernible, is unlikely to be immediately apparent due to the slow rotational speed of turbine blades and thedistance at which Project would be viewed. The visibility of the Project would be greatest during periods of particularly good visibility and clear skies, and when the turbines are backlitby the sun and would contrast with the color of the clear sky. The Project would also be apparent at night, introducing new artificial flashing light sources and the uncoordinated nature of the flashing light due to intermittent screening of lights by rotors offshore when turbine lights are triggered.However, such effects would be infrequent and of short duration.

Aesthetic and Perceptual Characteristics[1]	Rating	Degree of Contrast
Forms	3 Small to Moderate	The proposed Project would introduce large scale vertical elements to the essentially horizontal horizon that is a key determining characteristic of the landscape at this KOP.
Line	3 Small to Moderate	The proposed Project would introduce a complex array of large-scale vertical elements to the flat horizon that forms a key aspect of seaward views from this KOP.
Pattern	3 Small to Moderate	The proposed Project would introduce a large-scale development offshore where there is currently none.

[1] Aesthetic and Perceptual Characteristics ratings are adapted from the BLM Visual Resource Management system (see Table X.6-4 in Section X.6.1.6.2). The rest of the ratings (sensitivity, magnitude, and overall impact) are based on slight derivation of BOEM's SLVIA Guidance ratings matrix.

TABLE 11: VIA RATING FORM KOP-NA01: CISCO BEACH, NANTUCKET		
Color	2 Small	The proposed Project's turbine blades, hubs, and nacelles have been rendered at RAL 9010 (Pure White), rendering it relatively recessive against the pale sky. Some contrast is likely, however, during periods of clear visibility when the proposed Project is sunlit or backlit (during the morning, afternoon and early evening) when color contrast with the sky would be greatest.
Texture	3 Small to Moderate	The proposed Project would introduce coarser elements to the distant horizon that is an important characteristic of this KOP.
Movement	3 Small to Moderate	While the proposed Project would introduce further movement to the distant horizon in views from this KOP in the form of rotor movement, this would not be immediately apparent to the casual observer due to the slow rotor speed anticipated and the distance at which the turbines would be viewed.
Receptor Sensitivity Factor	**Rating**	**Rationale**
Susceptibility	High	Receptor susceptibility is high at this KOP due to the expansive views out towards the vast OCA with no current intrusions, which is a major attraction to the recreational users and tourists that visit this beach.
Value	High	This is one of the most popular beaches on Nantucket with an abundance of recreational users and tourists, especially during the summer months. This beach is one of the main publicly accessible beaches with parking, surf rental trucks, and food trucks.
Overall Sensitivity Rating: High		
Magnitude Factor	**Rating**	**Rationale**
Geographic Extent	Large	The proposed Project is located towards the center of the horizontal field of view. The principal outlook from this KOP is to the south/southwest into the Atlantic Ocean where the proposed project is located, and the simulation is oriented. The Project would be seen distantly at over 21 mi (34 km).
Size and Scale	Medium	Aesthetic characteristics including form, line, color, texture, and motion are rated individually above. The Project occupies 12.7% of the available horizontal field of view provided by the simulation, due to curvature of the earth. In this context the Project would be readily apparent after even a brief look and would be visible to most casual observers. The object is clearly evident and represents a prominent new feature within a largely unchanged wider visual context. Full views of the proposed Project would be experienced when facing the direction of the Project.
Duration and Reversibility	Fair	Although the proposed Project's lifespan is expected to be 35 years, it will be fully reversible.
Overall Magnitude Rating: Medium		
Overall Impact Level	**Rating**	**Rationale**
Visual Impact Assessment:	Moderate	The proposed Project would form a relatively modest impact to the receptor at this KOP as it would introduce a new focal point on the principal view from this highly sensitive KOP, its prominence being exacerbated by the simple horizontal form of the horizon on which it would

TABLE 11: VIA RATING FORM KOP-NA01: CISCO BEACH, NANTUCKET		
		be seen. The Project would also lessen the perceived naturalness experienced at the KOP and increase the degree of perceived activity present.

TABLE 12: VIA RATING FORM KOP-NA04: TOM NEVERS BEACH, NANTUCKET					
Section A. KOP Information					
KOP Reference Number: NA04	**Name of KOP:** Tom Nevers Beach	**KOP Distance from Project:** 26.12 mi (40.03 km) **Elevation:** 6 ft AMSL	**Date visited:** June 16, 2021	**Time of visit:** 1:01 pm	**Weather conditions and visibility during visit:** Sunny Clear Skies

Location:
Tom Nevers Beach is a mile-long beach owned and managed by the Nantucket Conservation Foundation (NCF). The beach is easily accessible from undeveloped dirt roads and walking trails through shrub scrub vegetation communities and grassy dunes. The beach is known for being remote with striking views of the ocean. Behind the beach around the parking area are abandoned recreation buildings, old basketball courts and baseball fields, and grassy fields for hosting event such as the Nantucket Island Fair.

The coarse tan sandy beach begins at the base of the steep, eroding dune edge, transitioning to sloping and angled beach intersecting with the ocean edge. The strong angle causes heavy surf beach break, and unpredictable currents and undertow. The beach is accessed primarily by residents and tourists residing or staying within the Tom Nevers community. The beach is used for walking, sunbathing, ocean viewing, and surf casting.

Visual Impact Receptors (Viewer Groups): Recreational Users and Tourists.

Visual Context
The visual context of this KOP is dynamic and changeable in nature, reflected in tidal patterns, as well as variability in light and atmospheric conditions, and patterns of recreational use and the frequency and number of recreational visitors. The scale of the view from this KOP and seaward views across the OCA dominates and forms a crucial aspect of the scenic quality at this KOP, as does its essentially dark condition at night.

Affected Environment

SLCA Context
The KOP is located in the Ocean Beach SCA as described in Table X.5-13, but also subject to the considerable influence of the neighboring OCA SLCA.

Key Characteristics of the SLCA and View at KOP Location
The dominant visual impression is the broad, flat expanse of OCA against the blue and gray color of the sky. The dark blue gray ocean surface stretches to the distant horizon line. Scenic integrity is high with no visual intrusions. The dark horizon line is providing a distinct linear break between the ocean and the white clouds in the sky. Ocean conditions range from flat water to choppy to rolling swells.
The viewer position to the ocean ranges from slightly elevated at the top of the dune at Tom Nevers Field to level along the beach. The elevated position provides an expansive field of view of the entire ocean along the horizon degree. During hours of darkness the character of the seascape/landscape at the KOP is influenced by glimpses of scattered lighting associated with onshore elements such as properties, traffic on roads and light houses etc., viewed intermittently through the dune system. It is also influenced by views across the OCA which contains transient lighting from vessels, navigation aids, and moonlight reflecting on the water.

Form	Principally flat and horizontal
Line	Strong line where beach meets sea, but variable, depending upon tidal action and water state. Key aspect of character is also derived from dominance of low flat line of the horizon on the neighboring OCA, which is a key influence on the Ocean Beach.

TABLE 12: VIA RATING FORM KOP-NA04: TOM NEVERS BEACH, NANTUCKET	
Pattern	Simple unified linear configuration.
Color	White sand contrasting with mosaic of blues and grays of the neighboring OCA. Colors are, however, highly variable, depending on sea state and weather/atmospheric conditions.
Texture	Smooth, but with some variation associated with the neighboring OCA which can present rougher textures in rough sea states.
Movement	Variable, depending upon frequency and number of recreational users of the beach, tidal patterns and the sea state of the neighboring OCA.
Perceptual Characteristics	Variable, depending upon frequency and number of recreational users of the beach, tidal patterns, sea state, as well as seasonal and time of day. Ranging from natural, restful, tranquil and peaceful to busy/active, exciting, stimulating and dangerous. At night the quieter and essential dark conditions experienced at this KOP emphasize the sense of naturalness and tranquility.

B. Contrast, Magnitude of Impact, and Sensitivity Rating [KOP-NA04]

Description of Projects Appearance in the context of the Affected Environment

The proposed Project would be visible on the distant horizon, offshore, to the southwest. 95 of the Project turbines would be visible. Approximately 60 of the Project's turbines would be entirely screened by the curvature of the earth. Rotor movement, while discernible, is unlikely to be immediately apparent due to the slow rotational speed of turbine blades and the distance at which Project would be viewed. The visibility of the Project would be greatest during periods of particularly good visibility and clear skies, and when the turbines are backlit by the sun and would contrast with the color of the clear sky. The Project would also be apparent at night, introducing new artificial flashing light sources and the uncoordinated nature of the flashing light due to intermittent screening of lights by rotors offshore when turbine lights are triggered. However, such effects would be infrequent and of short duration.

Aesthetic and Perceptual Characteristics[1]	Rating	Degree of Contrast
Forms	2 Small	The proposed Project would introduce large scale vertical elements to the essentially horizontal horizon that is a key determining characteristic of the landscape at this KOP.
Line	2 Small	The proposed Project would introduce a complex array of large-scale vertical elements to the flat horizon that forms a key aspect of seaward views from SLCA at this KOP.
Pattern	2 Small	The proposed Project would introduce complex forms to an area of the view that is currently notable for its simple patterns.
Color	2 Small	The proposed Project's turbine blades, hubs, and nacelles have been rendered at RAL 9010 (Pure White), rendering it relatively recessive against the pale sky. Some contrast is likely, however, during periods of clear visibility when the proposed Project is sunlit or backlit, when color contrast with the sky would be greatest.
Texture	2 Small	The proposed Project would introduce coarser elements to the distant horizon that is an important characteristic of this KOP.

[1] Aesthetic and Perceptual Characteristics ratings are adapted from the BLM Visual Resource Management system (see Table X.6-4 in Section X.6.1.6.2). The rest of the ratings (sensitivity, magnitude, and overall impact) are based on slight derivation of BOEM's SLVIA Guidance ratings matrix.

TABLE 12: VIA RATING FORM KOP-NA04: TOM NEVERS BEACH, NANTUCKET		
Movement	2 Small	While the proposed Project would introduce further movement to the distant horizon in views from this KOP in the form of rotor movement, this would not be immediately apparent due to the slow rotor speed anticipated and the distance at which the turbines would be viewed.
Receptor Sensitivity Factor	**Rating**	**Rationale**
Susceptibility	High	Receptor susceptibility is high at this KOP due to the expansive views out towards the vast OCA with no current intrusions, which is a major attraction to the recreational users and tourists that visit this beach.
Value	High	This is a popular beach on Nantucket with an abundance of recreational users and tourists, especially during the summer months. Behind the beach lies recreational fields and an undeveloped parking area atop a bluff adding high value to the KOP.
Overall Sensitivity Rating: High		
Magnitude Factor	**Rating**	**Rationale**
Geographic Extent	Large	The proposed Project is located towards the far right of the horizontal field of view. The principal outlook from this KOP is to the south into the Atlantic Ocean, and the proposed project and simulation are oriented southwest. The Project would be seen distantly at over 26 mi (42 km).
Size and Scale	Small	Aesthetic characteristics including form, line, color, texture, and motion are rated individually above. The Project occupies 9.1% of the available horizontal field of view provided by the simulation, due to curvature of the earth. In this context the Project appears very small, but when the observer scans the horizon, it can be detected without prolonged viewing. Full views of the proposed Project would be experienced when facing the direction of the Project.
Duration and Reversibility	Fair	Although the proposed Project's lifespan is expected to be 35 years, it will be fully reversible.
Overall Magnitude Rating: Medium		
Overall Impact Level	**Rating**	**Rationale**
Visual Impact Assessment:	Moderate	The proposed Project would form a relatively modest impact to the receptor at this KOP as it would introduce a small new element along the horizon line from this highly sensitive KOP, its prominence being exacerbated by the simple horizontal form of the horizon on which it would be seen. The Project would also lessen the perceived naturalness experienced at the KOP and increase the degree of perceived activity present.

TABLE 13: VIA RATING FORM KOP-NA07: NOBADEER BEACH, NANTUCKET					
Section A. KOP Information					
KOP Reference Number: NA07	**Name of KOP:** Nobadeer Beach	**KOP Distance from Project:** 22.59 mi (36.36 km) **Elevation:** 11.5 ft AMSL	**Date visited:** June 16, 2021	**Time of visit:** 5:20 pm	**Weather conditions and visibility during visit:** Sunny, Clear Skies
Location: Nobadeer Beach access is located at the eastern edge of the Nobadeer residential community at the edge of the Nantucket Airport Runway. The residential neighborhood is located within the scrub shrub vegetation community that leads to a steep eroding cliff edge above the beach. The beach is defined by the long linear edge at the base of the cliff and the irregular intermittent line of the beach breach at the top of tide. The beach is level and wide and allows for vehicle access. This beach is very popular for young people driving, parking, socializing, and surfing. Recreational users and tourists use the beach for walking, sunbathing, sunset viewing, ocean viewing, surf casting. The beach break is very strong with a strong undertow and current.					
Visual Impact Receptors (Viewer Groups): Recreational Users and Tourists.					
Visual Context The visual context of this KOP is dynamic and changeable in nature, reflected in tidal patterns, as well as variability in light and atmospheric conditions, and patterns of recreational use and the frequency and number of recreational visitors. The scale of the view from this KOP and seaward views across the OCA dominates and forms a crucial aspect of the scenic quality at this KOP, as does its essentially dark condition at night.					
Affected Environment					
SLCA Context The KOP is located in the Ocean Beach SCA as described in Table X.5-13, but also subject to the considerable influence of the neighboring OCA and Rural/Suburban Residential LCA.					
Key Characteristics of the SLCA and View at KOP Location The dominant visual impression is the broad, flat expanse of OCA against the blue and gray color of the sky. The dark blue gray ocean surface stretches to the distant horizon line. Scenic integrity is high with no visual intrusions. The dark horizon line is providing a distinct linear break between the ocean and the white clouds in the sky. Ocean conditions range from flat water to choppy to rolling swells. The viewer position to the ocean ranges from slightly elevated at the top of the dune to level along the beach. The elevated position provides an expansive field of view of the entire ocean along the horizon degree. During hours of darkness the character of the seascape/landscape at the KOP is influenced by glimpses of scattered lighting associated with onshore elements such as properties, traffic on roads and light houses etc., viewed intermittently through the dune system. It is also influenced by views across the OCA which contains transient lighting from vessels, navigation aids, and moonlight reflecting on the water.					
Form	Principally flat and horizontal upper terrace but with some steep eroding cliff faces.				
Line	Strong formal line at top of dune cliff and at the margin of where cliff meets the beach. An irregular and ever-changing line where beach meets the sea.				
Pattern	Simple unified linear configuration.				
Color	Tan sand contrasting with mosaic of blues and grays of the neighboring OCA. Colors are, however, highly variable, depending on sea state and weather/atmospheric conditions.				

TABLE 13: VIA RATING FORM KOP-NA07: NOBADEER BEACH, NANTUCKET	
Texture	Smooth, but with some variation associated with the neighboring OCA which can present rougher textures in rough sea states.
Movement	Variable, depending upon frequency and number of recreational users of the beach, tidal patterns and the sea state of the neighboring OCA.
Perceptual Characteristics	Variable, depending upon frequency and number of recreational users of the beach, tidal patterns, sea state, as well as seasonal and time of day. Ranging from natural, restful, tranquil and peaceful to busy/active, exciting, stimulating and dangerous. At night the quieter and essential dark conditions experienced at this KOP emphasize the sense of naturalness and tranquility.

B. Contrast, Magnitude of Impact, and Sensitivity Rating [KOP-NA07]

Description of Projects Appearance in the context of the Affected Environment

The proposed Project would be visible on the distant horizon, offshore, to the southwest. 120 of the Project turbines would be visible. Approximately 35 of the Project's turbines would be entirely screened by the curvature of the earth. Rotor movement, while discernible, is unlikely to be immediately apparent due to the slow rotational speed of turbine blades and the distance at which Project would be viewed. The visibility of the Project would be greatest during periods of particularly good visibility and clear skies, and when the turbines are backlit by the sun and would contrast with the color of the clear sky. Where 'stacking' of turbines is evident the prominence of the Project is also exacerbated. The Project would also be apparent at night, introducing new artificial flashing light sources and the uncoordinated nature of the flashing light due to intermittent screening of lights by rotors offshore when turbine lights are triggered. However, such effects would be infrequent and of short duration.

Aesthetic and Perceptual Characteristics[1]	Rating	Degree of Contrast
Forms	2 Small	The proposed Project would introduce large scale vertical elements to the essentially horizontal horizon that is a key determining characteristic of the view at this KOP.
Line	2 Small	The proposed Project would introduce a complex array of large-scale vertical elements to the flat horizon that forms a key aspect of seaward views at this KOP.
Pattern	0 No impact	The proposed Project would not affect the pattern of elements within the Ocean Beach OCA.
Color	2 Small	The proposed Project's turbine blades, hubs, and nacelles have been rendered at RAL 9010 (Pure White), rendering it relatively recessive against the pale sky. Some contrast is likely, however, during periods of clear visibility when the proposed Project is sunlit or backlit, when color contrast with the sky would be greatest.
Texture	2 Small	The proposed Project would introduce coarser elements to the distant horizon that is an important characteristic of this KOP.

[1] Aesthetic and Perceptual Characteristics ratings are adapted from the BLM Visual Resource Management system (see Table X.6-4 in Section X.6.1.6.2). The rest of the ratings (sensitivity, magnitude, and overall impact) are based on slight derivation of BOEM's SLVIA Guidance ratings matrix.

TABLE 13: VIA RATING FORM KOP-NA07: NOBADEER BEACH, NANTUCKET		
Movement	2 Small	While the proposed Project would introduce further movement to the distant horizon in views from this KOP in the form of rotor movement, this would not be immediately apparent due to the slow rotor speed anticipated and the distance at which the turbineswould be viewed.
Receptor Sensitivity Factor	**Rating**	**Rationale**
Susceptibility	High	Receptor susceptibility is high at this KOP due to the expansive views out towards the vast OCA with no current intrusions, which is a major attraction to the recreational users and tourists that visit this beach.
Value	High	This is one of the most popular beaches on Nantucket with an abundance of recreational users and tourists, especially during the summer months. This beach is well known for its good surfing conditions and vehicle access ways onto the beach.
Overall Sensitivity Rating: High		
Magnitude Factor	**Rating**	**Rationale**
Geographic Extent	Large	The proposed Project is located towards the right of the horizontal field of view. The principal outlook from this KOP is to the south into the Atlantic Ocean. The proposed project and simulation are oriented to the southeast. The Project would be seen distantly at over 23 mi (37 km).
Size and Scale	Medium	Aesthetic characteristics including form, line, color, texture, and motion are rated individually above. The Project occupies 11.7% of the available horizontal field of view provided by the simulation, due to curvature of the earth. In this context the Project would be readily apparent after even a brief look and would be visible to most casual observers. The object is clearly evident and represents a prominent new feature within a largely unchanged wider visual context. Full views of the proposed Project would be experienced when facing the direction of the Project.
Duration and Reversibility	Fair	Although the proposed Project's lifespan is expected to be 35 years, it will be fully reversible.
Overall Magnitude Rating: Medium		
Overall Impact Level	**Rating**	**Rationale**
Visual Impact Assessment:	Moderate	The proposed Project would form a relatively modest impact to the receptor at this KOP as it would introduce a new focal point on the principal view from this highly sensitive KOP, its prominence being exacerbated by the simple horizontal form of the horizon on which it would be seen. The Project would also lessen the perceived naturalness experienced at the KOP and increase the degree of perceived activity present.

TABLE 14: VIA RATING FORM KOP-NA08: SURFSIDE BEACH, NANTUCKET					
Section A. KOP Information					
KOP Reference Number: NA08	**Name of KOP:** Surfside Beach	**KOP Distance from Project:** 21.9 mi (35.24 km) **Elevation:** 6.5 ft AMSL	**Date visited:** June 16, 2021	**Time of visit:** 10:15 am	**Weather conditions and visibility during visit:** Partly Cloudy

Location:
Surfside Beach access is located at the southern edge of the Surfside residential community to the east of the Nantucket Airport Runway. The residential neighborhood is set back from the beach expanse with a stretch of scrub shrub vegetation community and dunes separating the neighborhood from the beach. The beach is defined by the long linear edge of the dunes and the irregular intermittent line of the beach breach at the top of tide. This beach is very popular for young people and families to socialize and grab a bite to eat at the take-out shack accompanied by picnic tables and umbrellas set behind the beach, dunes, and scrub shrub vegetation community. The beach is also accessed by residents of Surfside and used for beach walking, sunbathing, ocean viewing, and surf casting.

Visual Impact Receptors (Viewer Groups): Recreational Users and Tourists.

Visual Context
The visual context of this KOP is dynamic and changeable in nature, reflected in tidal patterns, as well as variability in light and atmospheric conditions, and patterns of recreational use and the frequency and number of recreational visitors. The scale of the view from this KOP and seaward views across the OCA dominates and forms a crucial aspect of the scenic quality at this KOP, as does its essentially dark condition at night.

Affected Environment

SLCA Context
The KOP is located in the Ocean Beach SCA as described in Table X.5-13, but also subject to the considerable influence of the neighboring OCA, and Coastal Scrub and Rural/Suburban Residential LCAs.

Key Characteristics of the SLCA and View at KOP Location
The dominant visual impression is the broad, flat expanse of OCA against a partly blue sky and haze, periodically reducing visual acuity. The ocean color varies from turquoise to gray to dark blue. The expanse of ocean stretches to a distant horizon line differentiating the transition between the ocean and the sky. Scenic integrity is high as the setting is not interrupted by any visual intrusions. Ocean conditions range from flat stippled and reflective in the background to water to rolling swells and strong beach break.

Form	Flat rolling upper terrace to sandy dune. Flat wide beach to sharply angled slope to intersection with ocean edge
Line	Strong line at top of dune cliff and at the margin of where cliff meets the beach. An irregular and ever-changing line where beach meets the sea.
Pattern	Simple unified linear configuration.
Color	Tan sand contrasting with mosaic of blues and grays of the neighboring OCA. Colors are, however, highly variable, depending on sea state and weather/atmospheric conditions.
Texture	Smooth, but with some variation associated with the neighboring OCA which can present rougher textures inrough sea states.
Movement	Variable, depending upon frequency and number of recreational users of the beach, tidal patterns and the sea state of the neighboring OCA.

TABLE 14: VIA RATING FORM KOP-NA08: SURFSIDE BEACH, NANTUCKET	
Perceptual Characteristics	Variable, depending upon frequency and number of recreational users of the beach, tidal patterns, sea state, as well as seasonal and time of day. Ranging from natural, restful, tranquil and peaceful to busy/active, exciting, stimulating and dangerous. At night the quieter and essential dark conditions experienced at this KOP emphasize the sense of naturalness and tranquility.

B. Contrast, Magnitude of Impact, and Sensitivity Rating [KOP-NA08]

Description of Projects Appearance in the context of the Affected Environment

119 of the Project turbines would be visible. The proposed Project would be visible on the distant horizon, offshore, to the southwest. Approximately 36 of the Project's turbines would be entirely screened by the curvature of the earth. Rotor movement, while discernible, is unlikely to be immediately apparent due to the slow rotational speed of turbine blades and the distance at which Project would be viewed. The visibility of the Project would be greatest during periods of particularly good visibility and clear skies, and when the turbines are backlit by the sun and would contrast with the color of the clear sky. Where 'stacking' of turbines is evident the prominence of the project is also exacerbated. The Project would also be apparent at night, introducing new artificial flashing light sources and the uncoordinated nature of the flashing light due to intermittent screening of lights by rotors offshore when turbine lights are triggered. However, such effects would be infrequent and of short duration.

Aesthetic and Perceptual Characteristics[1]	Rating	Degree of Contrast
Forms	3 Small to Moderate	The proposed Project would introduce large scale vertical elements to the essentially horizontal horizon that is a key determining characteristic of the landscape at this KOP.
Line	3 Small to Moderate	The proposed Project would introduce a complex array of large-scale vertical elements to the flat horizon that forms a key aspect of seaward views from SLCA at this KOP.
Pattern	0 No Impact	The proposed Project would not affect the pattern of elements within the Ocean Beach SCA.
Color	3 Small to Moderate	The proposed Project's turbine blades, hubs, and nacelles have been rendered at RAL 9010 (Pure White), rendering it relatively recessive against the pale sky. Some contrast is likely, however, during periods of clear visibility when the proposed Project is sunlit or backlit, when color contrast with the sky would be greatest.
Texture	3 Small to Moderate	The proposed Project would introduce coarser elements to the distant horizon that is an important characteristic of this KOP.
Movement	3 Small to Moderate	While the proposed Project would introduce further movement to the distant horizon in views from this KOP in the form of rotor movement, this would not be immediately apparent due to the slow rotor speed anticipated and the distance at which the turbines would be viewed.

[1] Aesthetic and Perceptual Characteristics ratings are adapted from the BLM Visual Resource Management system (see Table X.6-4 in Section X.6.1.6.2). The rest of the ratings (sensitivity, magnitude, and overall impact) are based on slight derivation of BOEM's SLVIA Guidance ratings matrix.

TABLE 14: VIA RATING FORM KOP-NA08: SURFSIDE BEACH, NANTUCKET		
Receptor Sensitivity Factor	**Rating**	**Rationale**
Susceptibility	High	Receptor susceptibility is high at this KOP due to the expansive views out towards the vast OCA with no current intrusions, which is a major attraction to the recreational users and tourists that visit this beach.
Value	High	This is a very popular beach in the Surfside community on Nantucket with an abundance of recreational users and tourists, especially during the summer months. This beach is very family oriented with a large parking area, restroom facilities, and a food shack.
Overall Sensitivity Rating: High		
Magnitude Factor	**Rating**	**Rationale**
Geographic Extent	Large	The proposed Project is located towards the right of the horizontal field of view. The principal outlook from this KOP is to the south into the Atlantic Ocean. The proposed project and simulation are oriented to the southwest. The Project would be seen distantly at over 22 mi (35 km).
Size and Scale	Small	Aesthetic characteristics including form, line, color, texture, and motion are rated individually above. The Project occupies 9.4% of the available horizontal field of view provided by the simulation, due to curvature of the earth, distance, and angle to the Project. In this context the Project would appear very small, but then the observer is scanning the horizon, it can be detected without prolonged viewing. The object provides a new feature within a largely unchanged wider visual context. Full views of the proposed Project would be experienced when facing the direction of the Project.
Duration and Reversibility	Fair	Although the proposed Project's lifespan is expected to be 35 years, it will be fully reversible.
Overall Magnitude Rating: Medium		
Overall Impact Level	**Rating**	**Rationale**
Visual Impact Assessment:	Moderate	The proposed Project would form a relatively modest impact to the receptor at this KOP as it would introduce a new focal point on the view from this highly sensitive KOP, its prominence being exacerbated by the simple horizontal form of the horizon on which it would be seen. The Project would also lessen the perceived naturalness experienced at the KOP and increase the degree of perceived activity present.

TABLE 15: VIA RATING FORM KOP-NA09: MIACOMET BEACH AND POND, NANTUCKET					
Section A.KOP Information					
KOP Reference Number: NA09	**Name of KOP:** Miacomet Beach and Pond	**KOP Distance from Project:** 21.11 mi (33.97 km) **Elevation:** 6.5 ft AMSL	**Date visited:** June 17, 2021	**Time of visit:** 9:40 am	**Weather conditions and visibility during visit:** Partly Cloudy
Location: Miacomet Beach is located behind the large eroding bluffs providing a backdrop to the ocean setting. The sparse residential homes are located within the scrub shrub vegetation community. The dunes rise above the beach behind the photo location. Behind the beach also lies Miacomet Pond and a small parking area and paths along the dunes. Miacomet Beach is a lightly developed recreation area and popular destination by residents and tourists looking to sunbathe, swim, and surf in a quiet environment. Recreation users are seen fishing within the pond.					
Visual Impact Receptors (Viewer Groups): Recreational Users and Tourists.					
Visual Context The visual context of this KOP is intrinsically dynamic and changeable in nature, reflected erosion patterns as well as variability in light and atmospheric conditions, and patterns of recreational use and the frequency and number of recreational visitors. The scale of the view from this KOP and seaward views across the OCA dominates and forms a crucial aspect of the scenic quality at this KOP, as does its essentially dark condition at night.					
Affected Environment					
SLCA Context The KOP is located in the Ocean Beach SCA as described in Table X.5-13, but also subject to the considerable influence of the Coastal Scrub, Low Density Rural Settlement, OCA , and Salt Pond/Tidal Marsh SLCAs.					
Key Characteristics of the SLCA and View at KOP Location The visual conditions include a flat expanse of OCA and distinct horizon line separating the sky from the ocean. The reflective darkblue-gray ocean surface stretches along the horizon line. Scenic integrity is high, with no existing structures or disruption to the ocean view.The movement of the ocean ranges from slight ripples to rolling swells to small surf waves and strong beach break. Miacomet Beach is seasonally visited with people recreating, surfing, fishing, socializing, and enjoying the beach setting.					
Form	Rolling sandy dune descending to flat wide beach to sharply angled slope to intersection with ocean edge				
Line	Strong line at top of dune cliff and at the margin of where cliff meets the beach. An irregular and ever-changing line where beach meets the sea.				
Pattern	Simple unified linear configuration.				
Color	Tan sand contrasting with mosaic of blues and grays of the neighboring OCA. Colors are, however, highly variable, depending on sea state and weather/atmospheric conditions.				
Texture	Smooth, but with some variation associated with the neighboring OCA which can present rougher textures in rough sea states.				
Movement	Variable, depending upon frequency and number of recreational users of the beach, tidal patterns and the sea state of the neighboring OCA.				

TABLE 15: VIA RATING FORM KOP-NA09: MIACOMET BEACH AND POND, NANTUCKET	
Perceptual Characteristics	Variable, depending upon frequency and number of recreational users of the beach, tidal patterns, sea state, as well as seasonal and time of day. Ranging from natural, restful, tranquil and peaceful to busy/active. At night the quieter and essential dark conditions experienced at this KOP emphasize the sense of naturalness and tranquility.

B. Contrast, Magnitude of Impact, and Sensitivity Rating [KOP-NA09]

Description of Projects Appearance in the context of the Affected Environment

The proposed Project would be visible on the distant horizon, offshore, to the southwest. 124 of the Project turbines would be visible. Approximately 31 of the Project's turbines would be entirely screened by the curvature of the earth. Rotor movement, while discernible, is unlikely to be immediately apparent due to the slow rotational speed of turbine blades and thedistance at which Project would be viewed. The visibility of the Project would be greatest during periods of particularly good visibility and clear skies, and when the turbines are backlit by the sun and would contrast with the color of the clear sky. Where 'stacking' of turbines is evident the prominence of the project is also exacerbated. The Project would also be apparent at night, introducing new artificial flashing light sources and the uncoordinated nature of the flashing light due to intermittent screening of lights by rotors offshore when turbine lights are triggered.However, such effects would be infrequent and of short duration.

Aesthetic and Perceptual Characteristics[1]	Rating	Degree of Contrast
Forms	3 Small to Moderate	The proposed Project would introduce largescale vertical elements to the essentially horizontal horizon that is a key determining characteristic of the landscape at this KOP.
Line	3 Small to Moderate	The proposed Project would introduce a complex array of large-scale vertical elements to the flat horizon that forms a key aspectof seaward views from SLCA at this KOP.
Pattern	3 Small to Moderate	The proposed Project would introduce a prominent contrasting element into the simple OCA that forms the backdrop context to the Ocean Beach.
Color	3 Small to Moderate	The proposed Project's turbine blades, hubs, and nacelles have been rendered at RAL 9010 (Pure White), rendering it relatively recessive against the pale sky. Some contrast is likely, however, during periods of clear visibility when the proposed Project is sunlit or backlit, when color contrast with the sky would begreatest.
Texture	3 Small to Moderate	The proposed Project would introduce coarser elements to the distant horizon that is an important characteristic of this KOP.
Movement	3 Small to Moderate	While the proposed Project would introduce further movement to the distant horizon in views from this KOP in the form of rotor movement, this would not be immediately apparent due to the slow rotor speed anticipated and the distance at which the turbineswould be viewed.

[1] Aesthetic and Perceptual Characteristics ratings are adapted from the BLM Visual Resource Management system (see Table X.6-4 in Section X.6.1.6.2). The rest of the ratings (sensitivity, magnitude, and overall impact) are based on slight derivation of BOEM's SLVIA Guidance ratings matrix.

TABLE 15: VIA RATING FORM KOP-NA09: MIACOMET BEACH AND POND, NANTUCKET		
Receptor Sensitivity Factor	**Rating**	**Rationale**
Susceptibility	High	Receptor susceptibility is high at this KOP due to the expansive views out towards the vast OCA with no current intrusions, which is a major attraction to the recreational users and tourists that visit this beach.
Value	High	This is a popular beach in the Miacomet community on Nantucket with an abundance of recreational users and tourists, especially during the summer months. There is vehicle access on the beach.
Overall Sensitivity Rating: High		
Magnitude Factor	**Rating**	**Rationale**
Geographic Extent	Large	The proposed Project is located towards the right of the horizontal field of view. The principal outlook from this KOP is to the southwest into the Atlantic Ocean, where the proposed project and simulation are oriented. The Project would be seen distantly at over 21 mi (34 km).
Size and Scale	Medium	Aesthetic characteristics including form, line, color, texture, and motion are rated individually above. The Project occupies 13.7% of the available horizontal field of view provided by the simulation, due to curvature of the earth. In this context the Project would be readily apparent after even a brief look and would be visible to most casual observers. The object is clearly evident and represents a prominent new feature within a largely unchanged wider visual context. Full views of the proposed Project would be experienced when facing the direction of the Project.
Duration and Reversibility	Fair	Although the proposed Project's lifespan is expected to be 35 years, it will be fully reversible.
Overall Magnitude Rating: Medium		
Overall Impact Level	**Rating**	**Rationale**
Visual Impact Assessment:	Moderate	The proposed Project would form a relatively modest impact to the receptor at this KOP as it would introduce a new focal point on the principal view from this highly sensitive KOP, its prominence being exacerbated by the simple horizontal form of the horizon on which it would be seen. The Project would also lessen the perceived naturalness experienced at the KOP and increase the degree of perceived activity present.

TABLE 16: VIA RATING FORM KOP-NA10: MADAKET BEACH, NANTUCKET					
Section A. KOP Information					
KOP Reference Number: NA10	**Name of KOP:** Madaket Beach	**KOP Distance from Project:** 20 mi (32 km) **Elevation:** 9.5 ft AMSL	**Date visited:** August 20, 2020	**Time of visit:** 6:37 am	**Weather conditions and visibility during visit:** Clear, excellent visibility

Location:
The KOP is located on the western end of the island of Nantucket between Madaket Harbor and the saltwater marsh of Long Pond. The KOP is located within the Public Beach Access area at the top of tide. Markers delineate the transition between public and private beach access. Madaket is known for its pristine sandy beaches and sunsets. Elevated eroding dunes and the variable irregular edge of tide are parallel to the long linear tan stretch of beach. Public beach access is confined to a large parking area with restrooms. Split rail fence delineates the upland edge of the access area and cement barriers blocking vehicle access to the beach. On either side of the parking area, residential homes rest behind and on top of the elevated dunes. The recreation area is a popular destination with residents and tourists looking to sunbathe and enjoy the beach setting during the day and the sunset over the OCA during the evening. The parking area is undersized for the level of summer visitation and cars are often parked along the roadway edge.

Visual Impact Receptors (Viewer Groups): Recreational Users and Tourists.

Visual Context
The visual context of this KOP is dynamic and changeable in nature, reflected in tidal patterns, as well as variability in light and atmospheric conditions, and patterns of recreational use and the frequency and number of recreational visitors. The scale of the view from this KOP and seaward views across the OCA dominates and forms a crucial aspect of the scenic quality at this KOP, as does its essentially dark condition at night.

Affected Environment

SLCA Context
The KOP is located in the Ocean Beach SCA as described in Table X.5-13, but also subject to the considerable influence of the Coastal Dunes, Low Density Rural Settlement, Coastal Scrub, and OCA.

Key Characteristics of the SLCA and View at KOP Location

- A low lying, virtually flat/gently sloping landscape.
- Predominantly long, uninterrupted fine textured sandy beach.
- Wide open views across the neighboring OCA.
- A dynamic environment that is influenced by the ebb and flow of the tide.
- Variable numbers of recreational tourists and residents present, resulting in differing extents of movement and activity and consequent effects on the sense of tranquility and naturalness of the view at the KOP.
- Recreational activity associated with both formal and informal recreational opportunities (i.e., sports games, sunbathing).
- Strong sense of space, light and exposure, and extensive visibility on the larger and more open stretches of sandy beach.
- Neighboring Coastal Dunes provides separation the beach from inland areas. Due to this, there is a contrast in the experience within the Ocean Beach. In parts, the neighboring dune systems constrain and direct views out to open water from the sandy beaches.
- During hours of darkness the character of the seascape/landscape at the KOP is influenced by glimpses of scattered lighting associated with onshore elements such as properties, traffic on roads and light houses etc., viewed intermittently through the dune

TABLE 16: VIA RATING FORM KOP-NA10: MADAKET BEACH, NANTUCKET	
system. It is also influenced by views across the OCA which contains transient lighting from vessels, navigation aids, and moonlight reflecting on the water.	
Form	Essentially flat/gently sloping. Influenced by low flat horizon of neighboring OCA.
Line	Strong line where beach meets sea, but variable, depending upon tidal action and water state. Key aspect of character is also derived from dominance of low flat line of the horizon on the neighboring OCA, which is a key influence on the Ocean Beach.
Pattern	Simple unified linear configuration.
Color	White sand contrasting with mosaic of blues and grays of the neighboring OCA. Colors are, however, highly variable, depending on sea state and weather/atmospheric conditions.
Texture	Smooth, but with some variation associated with the neighboring OCA which can present rougher textures inrough sea states.
Movement	Variable, depending upon frequency and number of recreational users of the beach, tidal patterns and the sea state of the neighboring OCA.
Perceptual Characteristics	Variable, depending upon frequency and number of recreational users of the beach, tidal patterns, sea state, as well asseasonal and time of day. Ranging from natural, restful, tranquil and peaceful to busy/active, exciting, stimulating and dangerous. At night the quieter and essential dark conditions experienced at this KOP emphasize the sense of naturalness and tranquility.

B. Contrast, Magnitude of Impact, and Sensitivity Rating [KOP-NA10]

Description of Projects Appearance in the context of the Affected Environment

The proposed Project would be visible on the distant horizon, offshore, to the southwest. 141 of the Project turbines would be visible. Approximately 14 of the Project's turbines would be entirely screened by the curvature of the earth. Rotor movement, while discernible, is unlikely to be immediately apparent due to the slow rotational speed of turbine blades and the distance at which Project would be viewed. The visibility of the Project would be greatest during periods of particularly good visibility and clear skies, and when the turbines are backlit by the sun and would contrast with the color of the clear sky. The Project would also be apparent at night, introducing new artificial flashing light sources and the uncoordinated nature of the flashing light due to intermittent screening of lights by rotors offshore when turbine lights are triggered. However, such effects would be infrequent and of short duration.

Aesthetic and Perceptual Characteristics[1]	Rating	Degree of Contrast
Forms	3 Small to Moderate	The proposed Project would introduce large scale vertical elements to the essentially horizontal horizon that is a key determining characteristic of the landscape at this KOP.
Line	3 Small to Moderate	The proposed Project would introduce a complex array of large-scale vertical elements to the flat horizon that forms a key aspect of seaward views from SLCA at this KOP.

[1] Aesthetic and Perceptual Characteristics ratings are adapted from the BLM Visual Resource Management system (see Table X.6-4 in Section X.6.1.6.2). The rest of the ratings (sensitivity, magnitude, and overall impact) are based on slight derivation of BOEM's SLVIA Guidance ratings matrix.

TABLE 16: VIA RATING FORM KOP-NA10: MADAKET BEACH, NANTUCKET		
Pattern	3 Small to Moderate	The proposed Project would introduce a prominent contrasting element into the simple OCA that forms the backdrop context to the Ocean Beach.
Color	3 Small to Moderate	The proposed Project's turbine blades, hubs, and nacelles have been rendered at RAL 9010 (Pure White), rendering it relatively recessive against the pale sky. Some contrast is likely, however, during periods of clear visibility when the proposed Project is sunlit or backlit, when color contrast with the sky would be greatest.
Texture	3 Small to Moderate	The proposed Project would introduce coarser elements to the distant horizon that is an important characteristic of this KOP.
Movement	3 Small to Moderate	While the proposed Project would introduce further movement to the distant horizon in views from this KOP in the form of rotor movement, this would not be immediately apparent due to the slow rotor speed anticipated and the distance at which the turbines would be viewed.
Receptor Sensitivity Factor	**Rating**	**Rationale**
Susceptibility	High	Receptor susceptibility is high at this KOP due to the expansive views out towards the vast OCA with no current intrusions, which is a major attraction to the recreational users and tourists that visit this beach.
Value	High	This is a very popular beach in the Madaket community on Nantucket with an abundance of recreational users and tourists, especially during the summer months. This is an iconic spot for sunset viewing.
Overall Sensitivity Rating: High		
Magnitude Factor	**Rating**	**Rationale**
Geographic Extent	Large	The proposed Project is located in the center of the horizontal field of view. The principal outlook from this KOP is to the southwest into the Atlantic Ocean, where the proposed project and simulation are oriented. The Project would be seen distantly at over 20 mi (32 km).
Size and Scale	Medium	Aesthetic characteristics including form, line, color, texture, and motion are rated individually above. The Project occupies 17.2% of the available horizontal field of view provided by the simulation. In this context the Project would be readily apparent after even a brief look and would be visible to most casual observers. The object is clearly evident and represents a prominent new feature within a largely unchanged wider visual context. Full views of the proposed Project would be experienced when facing the direction of the Project.
Duration and Reversibility	Fair	Although the proposed Project's lifespan is expected to be 35 years, it will be fully reversible.
Overall Magnitude Rating: Medium		
Overall Impact Level	**Rating**	**Rationale**
Visual Impact Assessment:	Moderate	The proposed Project would form a relatively modest impact to the receptor at this KOP as it would introduce a new focal point on the principal view from this highly sensitive KOP, its prominence being exacerbated by the simple horizontal form of the horizon on which it would

TABLE 16: VIA RATING FORM KOP-NA10: MADAKET BEACH, NANTUCKET		
		be seen. The Project would also lessen the perceived naturalness experienced at the KOP and increase the degree of perceived activity present.

TABLE 17: VIA RATING FORM KOP-NA12: HUMMOCK POND ROAD BIKE PATH, NANTUCKET					
Section A. KOP Information					
KOP Reference Number: NA12	**Name of KOP:** Hummock Pond Road Bike Path	**KOP Distance from Project:** 20.79 mi (33.46 km) **Elevation:** 25.5 ft AMSL	**Date visited:** June 17, 2021	**Time of visit:** 9:03 am	**Weather conditions and visibility during visit:** Sunny, hazy sky
Location: The Hummock Pond Road Bike Path opened in the Spring of 2013 to provide safe pedestrian and bicycle transportation to the residents and visitors of Nantucket. It runs for 2.3 miles along Hummock Pond Road through mostly rural, wooded landscapes. The bike path ends at the access road to Cisco Beach. The bike path is mostly situated behind mature coastal shrub scrub vegetation, residential housing, and pasture. The ocean view opens at the Cisco Beach entryway providing view across the low growing native scrub. The parcel of land behind the Cisco Beach access area is owned and managed by the Nantucket Conservation Foundation. The coastal shrub scrub vegetation community integrates many textures and colors, and contrasts with the blue ocean setting in the background. The Cisco neighborhood is primarily comprised of angular, gray, Cape Cod style homes.					
Visual Impact Receptors (Viewer Groups): Recreational Users and Tourists.					
Visual Context The visual context of this KOP is dynamic and changeable in nature, reflected in variability in light and atmospheric conditions, and patterns of recreational use and the frequency and number of recreational visitors. The scale of the view from this KOP and seaward views across Coastal Scrub and low-density homes towards the OCA that forms the backdrop to the SLCA, and which forms a crucial aspect of the scenic quality at this KOP, as does its essentially dark condition at night.					
Affected Environment					
SLCA Context The KOP is located in the Coastal Scrub Bush and Low-Density Rural Settlement LCA as described in Table X.5-13, but also subject to the influence of the neighboring OCA.					
Key Characteristics of the SLCA and View at KOP Location Rising to the east of Hummock Pond is the residential community of Cisco. The Cisco community is considered a newer development on the island. The houses are large in stature and reflect the Cape Cod style with gray shingle siding and angular sloped roofs. The ocean is visible, with the multiple colors and textures found within the foreground vegetation. The dark horizon line is distinct, defining the break between the ocean edge and the sky. Scenic integrity is high, due to the condition, diversity, and texture of the shrub scrub vegetation and the ocean setting. After being enclosed along the bike path behind tall vegetation, topography and structures, the receptor is given an inland opening to the ocean.					
Form	Level to slightly sloping, landform is not exposed covered in scrub shrub vegetation. Underlying form interrupted by verticality of residential properties and power and telephone lines.				
Line	Irregular, formed by the mosaic of scrub/shrub cover which contrasts with the geometry of buildings and roads nearby				
Pattern	Varied, and irregular, but land use is clearly divided between the scrub/shrub cover area south of this KOP, and the residential area to the north.				
Color	Ranging from muted greens and browns within the scrubland, to brighter grays and whites of residential properties. of blues and grays of the neighboring OCA.				

TABLE 17: VIA RATING FORM KOP-NA12: HUMMOCK POND ROAD BIKE PATH, NANTUCKET	
Texture	Smooth, but with some variation associated with the neighboring OCA which can present rougher textures inrough sea states.
Movement	Variable, depending upon frequency and number of recreational users of the beach, tidal patterns and the sea state of the neighboring OCA.
Perceptual Characteristics	Variable, depending upon frequency and number of recreational users, as well as seasonal and time of day. Ranging from natural, restful, tranquil and peaceful to busy/active, the influence of adjacent residential areas is apparent both during the day and after dark.

B. Contrast, Magnitude of Impact, and Sensitivity Rating [KOP-NA12]

Description of Projects Appearance in the context of the Affected Environment

The proposed Project would be visible on the distant horizon, offshore, to the southwest. 144 of the Project turbines would be visible but would be partially obscured by intervening vegetation and residential structures. Moreover, 11 of the Project's turbines would be entirely screened by the curvature of the earth. Rotor movement, while discernible, is unlikely to be immediately apparent due to the slow rotational speed of turbine blades and the distance at which Project would be viewed. The visibility of the Project would be greatest during periods of particularly good visibility and clear skies, and when the turbines are backlit by the sun and would contrast with the color of the clear sky. The Project would also be apparent at night, introducing new artificial flashing light sources and the uncoordinated nature of the flashing light due to intermittent screening of lights by rotors offshore when turbine lights are triggered. However, such effects would be infrequent and of short duration.

Aesthetic and Perceptual Characteristics[1]	Rating	Degree of Contrast
Forms	2 Small	The proposed Project would introduce small scale vertical elements to the essentially horizontal horizon that is a key determining characteristic of the view at this KOP.
Line	2 Small	The proposed Project would introduce an array of small-scale vertical elements to the flat horizon that forms a key aspect of seaward views from this KOP.
Pattern	2 Small	The proposed Project would introduce new elements to the pattern of existing characteristic elements on the skyline of this view.
Color	2 Small	The proposed Project's turbine blades, hubs, and nacelles have been rendered at RAL 9010 (Pure White), rendering it relatively recessive against the pale sky. Some contrast is likely, however, during periods of clear visibility when the proposed Project is sunlit or backlit, when color contrast with the sky would be greatest.
Texture	2 Small	The proposed Project would introduce more coarse elements to the distant horizon but are similar to those existing textures set within the landscape from existing infrastructure.
Movement	2 Small	While the proposed Project would introduce further movement to the distant horizon in views from this KOP in the form of rotor movement, this would not be immediately apparent due to the slow rotor speed anticipated and the distance at which the turbines would be viewed.

[1] Aesthetic and Perceptual Characteristics ratings are adapted from the BLM Visual Resource Management system (see Table X.6-4 in Section X.6.1.6.2). The rest of the ratings (sensitivity, magnitude, and overall impact) are based on slight derivation of BOEM's SLVIA Guidance ratings matrix.

TABLE 17: VIA RATING FORM KOP-NA12: HUMMOCK POND ROAD BIKE PATH, NANTUCKET		
Receptor Sensitivity Factor	**Rating**	**Rationale**
Susceptibility	Low	Receptor susceptibility is low on the path because receptors are not focused on views, especially towards the ocean as views are limited, and more focused on their activity as they move along the path.
Value	High	This is a highly utilized walking/biking/running path with high value used by recreationalist users and tourists that has connections to Cisco Beach.
Overall Sensitivity Rating: Medium		
Magnitude Factor	**Rating**	**Rationale**
Geographic Extent	Small	The proposed Project is located in the center-right of the horizontal field of view. The principal outlook from this KOP depends on the direction the receptor is moving on the path. The proposed project and simulation are oriented southwest and would be seen distantly at over 21 mi (34 km).
Size and Scale	Small	Aesthetic characteristics including form, line, color, texture, and motion are rated individually above. The Project occupies 15.2% of the available horizontal field of view provided by the simulation. In this context the Project would appear very small, but when the observer is scanning the horizon, it can be detected without prolonged viewing. Partial views of the proposed Project would be experienced due to the movement, and less often static nature of the activity of receptors on the bike path.
Duration and Reversibility	Fair	Although the proposed Project's lifespan is expected to be 35 years, it will be fully reversible.
Overall Magnitude Rating: Small		
Overall Impact Level	**Rating**	**Rationale**
Visual Impact Assessment:	Minor	The proposed Project would form a relatively minor impact to the receptor at this KOP as it would introduce a new element to the view, however recreationalists and tourists on the bike path are not focused on this view. The prominence of the project is exacerbated by the simple horizontal form of the horizon on which it would be seen.

TABLE 18: VIA RATING FORM KOP-NA13: NCF SANDFORD FARM BARN OVERLOOK, NANTUCKET					
Section A. KOP Information					
KOP Reference Number: NA13	**Name of KOP:** NCF Sanford Farm Barn Overlook	**KOP Distance from Project:** 21.43 mi (34.49 km) **Elevation:** 50.5 ft AMSL	**Date visited:** October 3, 2020	**Time of visit:** 2:43 pm	**Weather conditions and visibility during visit:** Sunny, clear skies
Location: The Sanford Farm Barn KOP is located along the Barn Walk Trail within the Sanford Farm. Ram Pasture and The Woods properties contain 780 acres of grasslands, shrub thickets, and woodlands. The site contains an extensive cultural history and habitat for rare plants and animals. The properties are owned and managed by the Nantucket Conservation Foundation, a membership-supported, nonprofit organization that is dedicated to permanently conserving, maintaining and managing natural areas and habitats and encouraging an appreciation of and interest in the island's natural resources (Sanford Trail Guide 2018). The overlook is popular for hiking to, picnicking and watching the sunset.					
Visual Impact Receptors (Viewer Groups): Recreational Users and Tourists.					
Visual Context The visual context of this KOP is dynamic and changeable in nature, reflected in tidal patterns, as well as variability in light and atmospheric conditions, and patterns of recreational use and the frequency and number of recreational visitors. The scale of the view from this KOP and seaward views across Coastal Scrub bush towards the OCA that forms the backdrop to the view, and which forms a crucial aspect of the scenic quality at this KOP, as does its essentially dark condition at night.					
Affected Environment					
SLCA Context The KOP is located in the Fields/Meadows LCA as described in Table X.5-13, but also subject to the considerable influence of the neighboring Coastal Scrub, Salt Pond/Tidal Marsh, and Low-Density Rural Settlement SLCAs.					
Key Characteristics of the SLCA and View at KOP Location Sanford Barn is a stopping point along the 3.1-mile Barn Walk Trail within the Sanford Farm Preserve. The dominant visual impressions include the diversity of color and texture within the vegetation and contrast with the strong linear edge along the inland tidal pond in the foreground view. Rising behind Hummock Pond is the residential community of Cisco, a newer development on the island. The houses are large but reflect the traditional Cape Code style with gray shingle siding and steeply sloped roofs. The ocean is visible through the housing development and provides a flat blue-gray back drop to the multiple colors and textures found within the middle ground features. The color of the ocean is reflective of the sky. The dark distant horizon line defines the break between the ocean edge and the sky. Scenic integrity is high, particularly from the location of the photo point within the historic Sanford Farm property at the barn site. According to locals, this viewpoint is one of the few inland locations that allows a view the ocean from a slightly elevated inland position. It includes the experience of multiple natural features including the scrub shrub, inland tidal pond, dunes, and OCA setting in one view. The sunset can also be viewed from the trail and viewpoint to the southwest over Madaket on the southern end of the island. Scenic integrity is high due to the setting remaining mostly natural. Residential structures are set within the context of the setting.					
Form	Level to slightly sloping, rolling terrain.				
Line	Irregular, formed by the mosaic of scrub/shrub cover. Overwhelmingly horizontal however, reflecting low flat skyline formed by the distant sea surface.				
Pattern	Simple pattern of land use.				

TABLE 18: VIA RATING FORM KOP-NA13: NCF SANDFORD FARM BARN OVERLOOK, NANTUCKET	
Color	Ranging from muted greens and browns within the scrubland, to blues and grays of the neighboring OCA and sky.
Texture	Relatively coarse, the scrubland contrasting with the smoother texture of the adjoining sea.
Movement	Variable, depending upon frequency and number of recreational users of the beach, tidal patterns and the sea state of the neighboring OCA.
Perceptual Characteristics	Variable, depending upon frequency and number of recreational users, as well as seasonal and time of day. Ranging from natural, restful, tranquil and peaceful to busy/active, the influence of adjacent residential areas is apparent both during the day and after dark.

B. Contrast, Magnitude of Impact, and Sensitivity Rating [KOP-NA13]

Description of Projects Appearance in the context of the Affected Environment

The proposed Project would be visible on the distant horizon, offshore, to the southwest. 152 of the Project turbines would be visible from this KOP. Approximately 3 of the Project's turbines would be entirely screened by the curvature of the earth. Rotor movement, while discernible, is unlikely to be immediately apparent due to the slow rotational speed of turbine blades and the distance at which Project would be viewed. The visibility of the Project would be greatest during periods of particularly good visibility and clear skies, and when the turbines are backlit by the sun and would contrast with the color of the clear sky. The Project would also be apparent at night, introducing new artificial flashing light sources and the uncoordinated nature of the flashing light due to intermittent screening of lights by rotors offshore when turbine lights are triggered. However, such effects would be infrequent and of short duration.

Aesthetic and Perceptual Characteristics[1]	Rating	Degree of Contrast
Forms	2 Small	The proposed Project would introduce small scale vertical elements to the essentially horizontal horizon that is a key determining characteristic of the landscape at this KOP.
Line	2 Small	The proposed Project would introduce an array of small-scale vertical elements to the flat horizon that forms a key aspect of seaward views from this KOP.
Pattern	2 Small	The proposed Project would introduce new features to a currently simple horizontal horizon, thereby altering the pattern of characteristic elements in the background to the view.
Color	2 Small	The proposed Project's turbine blades, hubs, and nacelles have been rendered at RAL 9010 (Pure White), rendering it relatively recessive against the pale sky. Some contrast is likely, however, during periods of clear visibility when the proposed Project is sunlit or backlit, when color contrast with the sky would be greatest.
Texture	2 Small	The proposed Project would introduce coarser elements to the distant horizon that is an important characteristic of this KOP.
Movement	2 Small	While the proposed Project would introduce further movement to the distant horizon in views from this KOP in the form of rotor movement, this would not be immediately apparent due to the slow rotor speed anticipated and the distance at which the turbines would be viewed.

[1] Aesthetic and Perceptual Characteristics ratings are adapted from the BLM Visual Resource Management system (see Table X.6-4 in Section X.6.1.6.2). The rest of the ratings (sensitivity, magnitude, and overall impact) are based on slight derivation of BOEM's SLVIA Guidance ratings matrix.

TABLE 18: VIA RATING FORM KOP-NA13: NCF SANDFORD FARM BARN OVERLOOK, NANTUCKET		
Receptor Sensitivity Factor	**Rating**	**Rationale**
Susceptibility	Medium	Receptor susceptibility is medium due to the variability in the intent of the receptor. This overlook provides expansive views across the Coastal Scrub and Salt Pond landscape which is an attraction to the KOP, however some recreational users may be using the associated path simply for walking/running and are not focused on the view.
Value	High	This is a highly utilized path with high scenic value and historic significance used by recreationalist users and tourists.
Overall Sensitivity Rating: Medium		
Magnitude Factor	**Rating**	**Rationale**
Geographic Extent	Medium	The proposed Project is located in the center-left of the horizontal field of view. The principal outlook from this KOP depends on the direction the receptor is moving on the path but is mostly southwest facing towards the project. The Project would be seen distantly at over 21 mi (34 km).
Size and Scale	Small	Aesthetic characteristics including form, line, color, texture, and motion are rated individually above. The Project occupies 15.0% of the available horizontal field of view provided by the simulation. In this context the Project would appear very small, but when the observer is scanning the horizon, it can be detected without prolonged viewing. Partial views of the proposed Project would be experienced due to the varying receptor activities and the possible movement of the recreational receptor.
Duration and Reversibility	Fair	Although the proposed Project's lifespan is expected to be 35 years, it will be fully reversible.
Overall Magnitude Rating: Medium		
Overall Impact Level	**Rating**	**Rationale**
Visual Impact Assessment:	Moderate	The proposed Project would form a relatively modest impact to the receptor at this KOP as it would introduce a new element to the sensitive view, however recreationalists and tourists on the path may not be focused on this view. The prominence of the project is exacerbated by the simple horizontal form of the horizon on which it would be seen but is partially interrupted by existing vegetation.

TABLE 19: VIA RATING FORM KOP-NA20: MADEQUECHAM 5, NANTUCKET					
Section A. KOP Information					
KOP Reference Number: NA20	**Name of KOP:** Madequacham 5	**KOP Distance from Project:** 24.32 mi (39.14 km) **Elevation**: 13.5 ft AMSL	**Data visited:** June 16, 2021	**Time of visit:** 12:06 pm	**Weather conditions and visibility duringvisit:** Sunny, clear skies
Location: Madaquecham is a mix of large private estates and conservation land owned by the Nantucket Conservation Foundation. Residential development is sited within the coastal scrub shrub community and is located mostly along the top of the steep bluff above the beach with ocean views. The long narrow beach is remote and is accessible by traveling on unimproved roads to small, remote, and undeveloped parking areas.					
Visual Impact Receptors (Viewer Groups): Recreational Users and Tourists.					
Visual Context The visual context of this KOP is dynamic and changeable in nature, reflected in tidal patterns, as well as variability in light and atmospheric conditions, and patterns of recreational use and the frequency and number of recreational visitors. The scale of the view from this KOP and seaward views across the OCA dominates and forms a crucial aspect of the scenic quality at this KOP, as does its essentially dark condition at night.					
Affected Environment					
SLCA Context The KOP is located in the Ocean Beach SCA as described in Table X.5-13, but also subject to the considerable influence of the neighboring OCA.					
Key Characteristics of the SLCA and View at KOP Location The dominant visual impression is the broad, flat expanse of OCA against a blue sky creating a distinct horizon line. The ocean color varies from turquoise to gray to dark blue. The expanse of ocean stretches to a distant horizon line differentiating the transition between the ocean and the sky. Scenic integrity is high as the setting is not interrupted by any visual intrusions and is mostly natural. Ocean conditions range from flat stippled and reflective in the background to water to rolling swells and strong beach break.					
Form	Flat rolling upper terrace to steep eroding sandy dune. Flat narrow beach to sharply angled slope to intersection with ocean edge				
Line	Strong formal line at top of dune. Irregular, dynamic line where beach meets the top of tide				
Pattern	Simple pattern of land use.				
Color	Tan of open beach contrasts with greens of neighboring dunes and blues and grays of the neighboring OCA and sky.				
Texture	Smooth, fine textured.				
Movement	Variable, depending upon frequency and number of recreational users of the beach, tidal patterns and the sea state ofthe neighboring OCA.				
Perceptual Characteristics	Variable, depending upon frequency and number of recreational users, as well as seasonal and time of day. Ranging from natural, restful, tranquil and peaceful to busy/active.				

TABLE 19: VIA RATING FORM KOP-NA20: MADEQUECHAM 5, NANTUCKET		
B. Contrast, Magnitude of Impact, and Sensitivity Rating [KOP-NA20]		
Description of Projects Appearance in the context of the Affected Environment The proposed Project would be visible on the distant horizon, offshore, to the southwest. 115 of the Project turbines would be visible from this KOP, while 40 structures would potentially not be visible. Rotor movement, while discernible, is unlikely to be immediately apparent due to the slow rotational speed of turbine blades and the distance at which Project would be viewed. The visibility of the Project would be greatest during periods of particularly good visibility and clear skies, and when the turbines are backlit by the sun and would contrast with the color of the clear sky. The Project would also be apparent at night, introducing new artificial flashing light sources and the uncoordinated nature of the flashing light due to intermittent screening of lights by rotors offshore when turbine lights are triggered. However, such effects would be infrequent and of short duration.		
Aesthetic and Perceptual Characteristics[1]	**Rating**	**Degree of Contrast**
Forms	2 Small	The proposed Project would introduce large scale vertical elements to the essentially horizontal horizon that is a key determining characteristic of the view at this KOP.
Line	2 Small	The proposed Project would introduce a complex array of large-scale vertical elements to the flat horizon that forms a key aspect of seaward views from this KOP.
Pattern	2 Small	The proposed Project would introduce uncharacteristic elements to the backdrop to the SLCA and the view from this KOP.
Color	2 Small	The proposed Project's turbine blades, hubs, and nacelles have been rendered at RAL 9010 (Pure White), rendering it relatively recessive against the pale sky. Some contrast is likely, however, during periods of clear visibility when the proposed Project is sunlit or backlit, when color contrast with the sky would begreatest.
Texture	2 Small	The proposed Project would introduce coarser elements to the distant horizon that is an important characteristic ofthis KOP.
Movement	2 Small	While the proposed Project would introduce further movement to the distant horizon in views from this KOP in the form of rotor movement, this would not be immediately apparent due to the slow rotor speed anticipated and the distance at which the turbineswould be viewed.
Receptor Sensitivity Factor	**Rating**	**Rationale**
Susceptibility	High	Receptor susceptibility is high at this KOP due to the expansive views out towards the vast OCA with no current intrusions, which is a major attraction to the recreational users and tourists that visit this beach.
Value	High	This is a popular beach in the Madequacham community that is part of the Nantucket Conservation Foundation, with an abundance of recreational users and tourists, especially during the summer months.
Overall Sensitivity Rating: High		

[1] Aesthetic and Perceptual Characteristics ratings are adapted from the BLM Visual Resource Management system (see Table X.6-4 in Section X.6.1.6.2). The rest of the ratings (sensitivity, magnitude, and overall impact) are based on slight derivation of BOEM's SLVIA Guidance ratings matrix.

TABLE 19: VIA RATING FORM KOP-NA20: MADEQUECHAM 5, NANTUCKET		
Magnitude Factor	**Rating**	**Rationale**
Geographic Extent	Large	The proposed Project is located in the center of the horizontal field of view. The principal outlook from this KOP is to the south into the Atlantic Ocean. The proposed project and simulation are oriented to the southwest. The Project would be seen distantly at over 24 mi (39 km).
Size and Scale	Medium	Aesthetic characteristics including form, line, color, texture, and motion are rated individually above. The Project occupies 11.7% of the available horizontal field of view provided by the simulation, due to curvature of the earth and distance. In this context the Project would be readily apparent after even a brief look and would be visible to most casual observers. The object is clearly evident and represents a prominent new feature within a largely unchanged wider visual context. Full views of the proposed Project would be experienced when facing the direction of the Project.
Duration and Reversibility	Fair	Although the proposed Project's lifespan is expected to be 35 years, it will be fully reversible.
Overall Magnitude Rating: Medium		
Overall Impact Level	**Rating**	**Rationale**
Visual Impact Assessment:	Moderate	The proposed Project would form a relatively modest impact to the receptor at this KOP as it would introduce a new focal point on the principal view from this highly sensitive KOP, its prominence being exacerbated by the simple horizontal form of the horizon on which it would be seen. The Project would also lessen the perceived naturalness experienced at the KOP and increase the degree of perceived activity present.

TABLE 20: VIA RATING FORM KOP-NA21: MADAKET BEACH (AT SUNSET), NANTUCKET					
Section A. KOP Information					
KOP Reference Number: NA21	**Name of KOP:** Madaket Beach (Sunset)	**KOP Distance from Project:** 20.37 mi (32.78 km) **Elevation:** 10.5 ft AMSL	**Date visited:** June 16, 2021	**Time of visit:** 7:55 pm	**Weather conditions and visibility during visit:** Partly cloudy
Location: The neighborhood of Madaket is located on the western end of the island of Nantucket between Madaket Harbor and saltwater marsh of Long Pond. Madaket is known for its pristine sandy beaches and sunsets. The long curvilinear beach is sandwiched between elevated eroding dunes and the variable irregular edge of tide. Public beach access is confined to a small parking area with restrooms, and split rail fence delineates the upland edge of the access area and cement barriers blocking vehicle access to the beach. Residential homes are located behind and on top of the dunes facing the ocean. The recreation area is a very popular destination by residents and tourists looking to sunbathe and enjoy the beach setting during the day and the sunset over the OCA during the evening. The parking area is undersized for the level of visitation and cars are often parked along the roadway edge. The KOP is located within the Public Beach Access on the beach in front of the parking area and access ramp. The photo point location was chosen by identifying where most people congregate to experience the sunset.					
Visual Impact Receptors (Viewer Groups): Recreational Users and Tourists.					
Visual Context The visual context of this KOP is dynamic and changeable in nature, reflected in tidal patterns, as well as variability in light and atmospheric conditions, and patterns of recreational use and the frequency and number of recreational visitors. The scale of the view from this KOP and seaward views across the OCA dominates and forms a crucial aspect of the scenic quality at this KOP, as does its essentially dark condition at night.					
Affected Environment					
SLCA Context The KOP is located in the Ocean Beach SCA as described in Table X.5-13, but also subject to the considerable influence of the Coastal Dunes, Low Density Rural Settlement, Coastal Scrub, and OCA.					
Key Characteristics of the SLCA and View at KOP Location The dominant visual impression is the broad, flat expanse of dark blue water contrasting the smooth light blue of the sky and brightness of the setting sun. The horizon line is very strong due to the time of day and light conditions. Scenic integrity is high, with no existing visual intrusions other than beach activity. Madaket Beach has a long linear horizontal line form, tan color, and strong variable edge where the ocean tide meets the beach.					
Form	Flat to gently sloped beach				
Line	Strongly linear, but somewhat irregular, dynamic line where beach meets the top of tide.				
Pattern	Simple pattern of land use.				
Color	Tan of Open Beach contrasts with greens of neighboring dunes and blues and grays of the neighboring OCA and sky.				
Texture	Smooth, fine textured.				
Movement	Variable, depending upon frequency and number of recreational users of the beach, tidal patterns and the sea state of the neighboring OCA.				

TABLE 20: VIA RATING FORM KOP-NA21: MADAKET BEACH (AT SUNSET), NANTUCKET	
Perceptual Characteristics	Variable, depending upon frequency and number of recreational users, as well as seasonal and time of day. Ranging from natural, restful, tranquil and peaceful to busy/active.

B. Contrast, Magnitude of Impact, and Sensitivity Rating [KOP-NA21]

Description of Projects Appearance in the context of the Affected Environment

The proposed Project would be visible on the distant horizon, offshore, to the southwest. 134 of the Project turbines would be visible from this KOP. Approximately 21 of the Project's turbines would be entirely screened by the curvature of the earth. Rotor movement, while discernible, is unlikely to be immediately apparent due to the slow rotational speed of turbine blades and the distance at which Project would be viewed. The visibility of the Project would be greatest during periods of particularly good visibility and clear skies, and when the turbines are backlit by the sun and would contrast with the color of the clear sky. The Project would also be apparent at night, introducing new artificial flashing light sources and the uncoordinated nature of the flashing light due to intermittent screening of lights by rotors offshore when turbine lights are triggered. However, such effects would be infrequent and of short duration.

Aesthetic and Perceptual Characteristics[1]	**Rating**	**Degree of Contrast**
Forms	3 Small to Moderate	The proposed Project would introduce large scale vertical elements to the essentially horizontal horizon that is a key determining characteristic of the landscape at this KOP.
Line	3 Small to Moderate	The proposed Project would introduce a complex array of large-scale vertical elements to the flat horizon that forms a key aspect of seaward views from SLCA at this KOP.
Pattern	3 Small to Moderate	The proposed Project would introduce a prominent contrasting element into the simple OCA that forms the backdrop context to the Ocean Beach.
Color	3 Small to Moderate	The proposed Project's turbine blades, hubs, and nacelles have been rendered at RAL 9010 (Pure White), rendering it relatively recessive against the pale sky. Some contrast is likely, however, during periods of clear visibility when the proposed Project is sunlit or backlit, when color contrast with the sky would be greatest.
Texture	3 Small to Moderate	The proposed Project would introduce coarser elements to the distant horizon that is an important characteristic of this KOP.
Movement	3 Small to Moderate	While the proposed Project would introduce further movement to the distant horizon in views from this KOP in the form of rotor movement, this would not be immediately apparent due to the slow rotor speed anticipated and the distance at which the turbineswould be viewed.
Receptor Sensitivity Factor	**Rating**	**Rationale**
Susceptibility	High	Receptor susceptibility is high at this KOP due to the expansive views out towards the vast OCA with no current intrusions, which is a major attraction to the recreational users and tourists that visit this beach.

[1] Aesthetic and Perceptual Characteristics ratings are adapted from the BLM Visual Resource Management system (see Table X.6-4 in Section X.6.1.6.2). The rest of the ratings (sensitivity, magnitude, and overall impact) are based on slight derivation of BOEM's SLVIA Guidance ratings matrix.

TABLE 20: VIA RATING FORM KOP-NA21: MADAKET BEACH (AT SUNSET), NANTUCKET		
Value	High	This is a very popular beach in the Madaket community on Nantucket with an abundance of recreational users and tourists, especially during the summer months. This is an iconic spot for sunset viewing.
Overall Sensitivity Rating: High		
Magnitude Factor	**Rating**	**Rationale**
Geographic Extent	Large	The proposed Project is located in the center of the horizontal field of view. The principal outlook from this KOP is to the southwest into the Atlantic Ocean, where the proposed project and simulation are oriented. The Project would be seen distantly at over 20 mi (32 km).
Size and Scale	Medium	Aesthetic characteristics including form, line, color, texture, and motion are rated individually above. The Project occupies 14.4% of the available horizontal field of view provided by the simulation. In this context the Project would be readily apparent after even a brief look and would be visible to most casual observers. The object is clearly evident and represents a prominent new feature within a largely unchanged wider visual context. Full views of the proposed Project would be experienced when facing the direction of the Project.
Duration and Reversibility	Fair	Although the proposed Project's lifespan is expected to be 35 years, it will be fully reversible.
Overall Magnitude Rating: Medium		
Overall Impact Level	**Rating**	**Rationale**
Visual Impact Assessment:	Moderate	The proposed Project would form a relatively modest impact to the receptor at this KOP as it would introduce a new focal point on the principal view from this highly sensitive KOP, its prominence being exacerbated by the simple horizontal form of the horizon on which it would be seen. The Project would also lessen the perceived naturalness experienced at the KOP and increase the degree of perceived activity present.

TABLE 21: VIA RATING FORM NA21: MADAKET BEACH (AT NIGHT), NANTUCKET					
Section A. KOP Information					
KOP Reference Number: NA21	**Name of KOP:** Madaket Beach (Night)[1]	**KOP Distance from Project:** 20.37 mi (32.78 km) **Elevation:** 10.5 ft AMSL	**Date visited:** June 16, 2021	**Time of visit:** 7:55 pm	**Weather conditions and visibility during visit:** Clear skies
Location: The neighborhood of Madaket is located on the western end of the island of Nantucket between Madaket Harbor and saltwater marsh of Long Pond. Madaket is known for its pristine sandy beaches and OCA sunsets. The long curvilinear beach is sandwiched between elevated eroding dunes and the variable irregular edge of tide. Public beach access is confined to a small parking area with restrooms, and split rail fence delineates the upland edge of the access area and cement barriers blocking vehicle access to the beach. Residential homes are located behind and on top of the dunes facing the ocean. The recreation area is a very popular destination by residents and tourists looking to sunbathe and enjoy the beach setting during the day and the sunset over the OCA during the evening. The parking area is undersized for the level of visitation and cars are often parked along the roadway edge. The KOP is located within the Public Beach Access on the beach in front of the parking area and access ramp. The photo point location was chosen by identifying where most people congregate to experience the sunset.					
Visual Impact Receptors (Viewer Groups): Recreational Users and Tourists.					
Visual Context The visual context of this KOP is dynamic and changeable in nature, reflected in tidal patterns, as well as variability in light and atmospheric conditions, and patterns of recreational use and the frequency and number of recreational visitors. The scale of the view from this KOP and seaward views across the OCA dominates and forms a crucial aspect of the scenic quality at this KOP, as does its essentially dark condition at night.					
Affected Environment					
SLCA Context The KOP is located in the Ocean Beach SCA as described in Table X.5-13, but also subject to the considerable influence of the Coastal Dunes, Low Density Rural Settlement, Coastal Scrub, and OCA.					
Key Characteristics of the SLCA and View at KOP Location During the day, the dominant daytime visual impression is the broad, flat expanse of dark blue water contrasting the smooth medium blue of the sky and brightness of the setting sun. The horizon line is strong due to the time of day and light conditions. Scenic integrity is high, with no existing visual intrusions other than beach activity. Madaket Beach has a long linear horizontal line form, tan color, and strong variable edge where the ocean tide meets the beach. As daylight fades and after dark the foregoing aspects become less apparent and can be entirely obscured leaving the key characteristic of the seascape/landscape at this KOP as an essentially dark environment with few prominent sources of artificial lighting. In this context the outlook is essentially dark apart from any ambient light/residual light in the sky.					
Form	Flat to gently sloped beach				
Line	Strongly linear, but somewhat irregular, dynamic line where beach meets the top of tide				

[1] KOP-NA21 Madaket Beach (at Sunset) was used, and nighttime conditions were simulated onto this photo due to the weather issues in the field capturing a second real nighttime photo. The night sky from the Wasque Avenue Entry Kiosk Night photo was used to display real stars and a real night sky.

TABLE 21: VIA RATING FORM NA21: MADAKET BEACH (AT NIGHT), NANTUCKET	
Pattern	Simple pattern of land use.
Color	Dark blue and dark brown of the Ocean Beach and OCA contrasts with the slightly lit, medium blue sky.
Texture	Smooth, fine textured.
Movement	Variable, depending upon frequency and number of recreational users of the beach, tidal patterns and the sea state ofthe neighboring OCA.
Perceptual Characteristics	Variable, depending upon frequency and number of recreational users, as well as seasonal and time of day. Ranging from natural, restful, tranquil and peaceful to busy/active. At night the SLCA at this KOP contains a small proportion of existing artificial light sources and movement associated with nearby residential properties, inland.

B. Contrast, Magnitude of Impact, and Sensitivity Rating [KOP-NA21]

Description of Projects Appearance in the context of the Affected Environment

The proposed Project would be visible on the distant horizon, offshore, to the southwest. 134 of the Project turbines would be visible from this KOP. Approximately 21 of the Project's turbines would be entirely screened by the curvature of the earth. Rotor movement, while discernible, is unlikely to be immediately apparent due to the slow rotational speed of turbine blades and the distance at which Project would be viewed. The visibility of the Project would be greatest during periods of particularly good visibility and clear skies, and when the turbines are backlit by the sun and would contrast with the color of the clear sky. The Project would also be apparent at night, introducing new artificial flashing light sources and the uncoordinated nature of the flashing light due to intermittent screening of lights by rotors offshore when turbine lights are triggered. However, such effects would be infrequent and of short duration.

Aesthetic and Perceptual Characteristics[2]	Rating	Degree of Contrast
Forms	3 Small to Moderate	The proposed Project would introduce large scale vertical elements to the essentially horizontal horizon that is a key determining characteristic of the landscape at this KOP.
Line	3 Small to Moderate	The proposed Project would introduce a complex array of large-scale vertical elements to the flat horizon that forms a key aspect of seaward views from SLCA at this KOP.
Pattern	3 Small to Moderate	The proposed Project would introduce a prominent contrasting element into the simple OCA that forms the backdrop context to the Ocean Beach.
Color	3 Small to Moderate	The proposed Project's turbine blades, hubs, and nacelles have been rendered at RAL 9010 (Pure White), rendering it relatively recessive against the pale sky. Some contrast is likely, however, during periods of clear visibility when the proposed Project is sunlit or backlit, when color contrast with the sky would be greatest.
Texture	3 Small to Moderate	The proposed Project would introduce coarser elements to the distant horizon that is an important characteristic of this KOP.

[2] Aesthetic and Perceptual Characteristics ratings are adapted from the BLM Visual Resource Management system (see Table X.6-4 in Section X.6.1.6.2). The rest of the ratings (sensitivity, magnitude, and overall impact) are based on slight derivation of BOEM's SLVIA Guidance ratings matrix.

TABLE 21: VIA RATING FORM NA21: MADAKET BEACH (AT NIGHT), NANTUCKET		
Movement	3 Small to Moderate	While the proposed Project would introduce further movement to the distant horizon in views from this KOP in the form of rotor movement, this would not be immediately apparent due to the slow rotor speed anticipated and the distance at which the turbines would be viewed.
Receptor Sensitivity Factor	**Rating**	**Rationale**
Susceptibility	High	Receptor susceptibility is high at this KOP due to the expansive views out towards the vast OCA with no current intrusions, which is a major attraction to the recreational users and tourists that visit this beach.
Value	High	This is a very popular beach in the Madaket community on Nantucket with an abundance of recreational users and tourists, especially during the summer months. This is an iconic spot for sunset viewing.
Overall Sensitivity Rating: High		
Magnitude Factor	**Rating**	**Rationale**
Geographic Extent	Large	The proposed Project is located in the center of the horizontal field of view. The principal outlook from this KOP is to the southwest into the Atlantic Ocean, where the proposed project and simulation are oriented. The Project would be seen distantly at over 20 mi (32 km).
Size and Scale	Medium	Aesthetic characteristics including form, line, color, texture, and motion are rated individually above. The Project occupies 14.4% of the available horizontal field of view provided by the simulation. In this context the Project would be readily apparent after even a brief look and would be visible to most casual observers. The object is clearly evident and represents a prominent new feature within a largely unchanged wider visual context. Full views of the proposed Project would be experienced when facing the direction of the Project.
Duration and Reversibility	Fair	Although the proposed Project's lifespan is expected to be 35 years, it will be fully reversible.
Overall Magnitude Rating: Medium		
Overall Impact Level	**Rating**	**Rationale**
Visual Impact Assessment:	Moderate	The proposed Project would form a relatively modest impact to the receptor at this KOP as it would introduce a new focal point on the principal view from this highly sensitive KOP, its prominence being exacerbated by the simple horizontal form of the horizon on which it would be seen. The Project would also lessen the perceived naturalness experienced at the KOP and increase the degree of perceived activity present.

TUCKERNUCK ISLAND

TABLE 22: VIA RATING FORM KOP-T01: TUCKERNUCK 1					
Section A.KOP Information					
KOP Reference Number: KOP-T01	**Name of KOP:** Tuckernuck 1	**KOP Distance from Project:** 20 mi (32.19 km) **Elevation:** 10.5 ft AMSL	**Date visited:** June 16, 2021	**Time of visit:** 7:55 pm	**Weather conditions and visibility during visit:** Sunny clear skies

Location:
Tuckernuck Island is a small island with an area of about 500 acres off the west coast of Nantucket Island. This island is only accessible by boat and the highest point on the island is about 50 feet. Tuckernuck Island is known for its pristine remote beaches and lightly developed land with only very few residential homes. Elevated eroding dunes and the variable irregular edge of tide are parallel to the long linear tan stretch of beach. Public beach access is by multiple sandy roads. Residential homes are set behind the beach and dunes within the scrub-shrub landscape.

Visual Impact Receptors (Viewer Groups): Recreational Users and Tourists.

Visual Context
The visual context of this KOP is dynamic and changeable in nature, reflected in tidal patterns, as well as variability in light and atmospheric conditions, and patterns of recreational use and the frequency and number of recreational visitors. The scale of the view from this KOP and seaward views across the OCA dominates and forms a crucial aspect of the scenic quality at this KOP, as does its essentially dark condition at night.

Affected Environment

SLCA Context
The KOP is located in the Ocean Beach SCA as described in Table X.5-13, but also subject to the considerable influence of the neighboring OCA and Coastal Scrub.

Key Characteristics of the SLCA and View at KOP Location
The dominant visual characteristics are the broad, flat expanse of water, the blue color reflecting the sky, the smooth to rippling texture of the water surface, and the distant horizon line. Scenic integrity is high, with no existing visual intrusions. The dark horizon line is predominantly visible providing a distinct linear break between the ocean and the sky. Ocean evaporation from warm summer temperatures often creates a grayish white band of haze between the ocean and the warm blue sky. Commercial fishing and recreational boats are seen seasonally in the waters of the area, and views of the Project can be from any point on the ocean surface on the south and east sides of the islands. Ocean conditions range from flat water to rippling to rolling swells.

Form	Flat to gently sloped beach
Line	Strongly linear, but somewhat irregular, dynamic line where beach meets the top of tide.
Pattern	Simple pattern of land use.
Color	Tan of open beach contrasts with greens of neighboring dunes and blues and grays of the neighboring OCA and sky.
Texture	Smooth, fine textured.
Movement	Variable, depending upon frequency and number of recreational users of the beach, tidal patterns and the sea state of the neighboring OCA.

TABLE 22: VIA RATING FORM KOP-T01: TUCKERNUCK 1	
Perceptual Characteristics	Variable, depending upon frequency and number of recreational users, as well as seasonal and time of day. Rangingfrom natural, restful, tranquil and peaceful to busy/active.

B. Contrast, Magnitude of Impact, and Sensitivity Rating [KOP-T01]

Description of Projects Appearance in the context of the Affected Environment

The proposed Project would be visible on the distant horizon, offshore, to the southwest. 129 of the Project turbines would be visible from this KOP. Approximately 26 of the Project's turbines would be entirely screened by the curvature of the earth. Rotor movement, while discernible, is unlikely to be immediately apparent due to the slow rotational speed of turbine blades and the distance at which Project would be viewed. The visibility of the Project would be greatest during periods of particularly good visibility and clear skies, and when the turbines are backlit by the sun and would contrast with the color of the clear sky. The Project would also be apparent at night, introducing new artificial flashing light sources and the uncoordinated nature of the flashing light due to intermittent screening of lights by rotors offshore when turbine lights are triggered. However, such effects would be infrequent and of short duration.

Aesthetic and Perceptual Characteristics[1]	**Rating**	**Degree of Contrast**
Forms	2 Small	The proposed Project would introduce small scale vertical elements to the essentially horizontal horizon that is a key determining characteristic of the landscape at this KOP.
Line	2 Small	The proposed Project would introduce an array of small-scale vertical elements to the flat horizon that forms a key aspect of seaward views from this KOP.
Pattern	0 No Impact	The proposed Project would not affect the pattern of elements within the Ocean Beach .
Color	2 Small	The proposed Project's turbine blades, hubs, and nacelles have been rendered at RAL 9010 (Pure White), rendering it relatively recessive against the pale sky. Some contrast is likely, however, during periods of clear visibility when the proposed Project is sunlit or backlit, when color contrast with the sky would be greatest.
Texture	2 Small	The proposed Project would introduce coarser elements to the distant horizon that is an important characteristic of this KOP.
Movement	2 Small	While the proposed Project would introduce further movement to the distant horizon in views from this KOP in the form of rotor movement, this would not be immediately apparent due to the slow rotor speed anticipated and the distance at which the turbines would be viewed.
Receptor Sensitivity Factor	**Rating**	**Rationale**
Susceptibility	High	Receptor susceptibility is high at this KOP due to the expansive views out towards the vast OCA with no current intrusions, which is a major attraction to the recreational users and tourists that visit this beach.
Value	High	The value at this beach remains high due to the remote location of Tuckernuck Island. The beaches and views are natural with no existing intrusions and limited access.

Overall Sensitivity Rating: High

[1] Aesthetic and Perceptual Characteristics ratings are adapted from the BLM Visual Resource Management system (see Table X.6-4 in Section X.6.1.6.2). The rest of the ratings (sensitivity, magnitude, and overall impact) are based on slight derivation of BOEM's SLVIA Guidance ratings matrix.

TABLE 22: VIA RATING FORM KOP-T01: TUCKERNUCK 1		
Magnitude Factor	**Rating**	**Rationale**
Geographic Extent	Large	The proposed Project is located in the center of the horizontal field of view. The principal outlook from this KOP is to the southwest into the Atlantic Ocean where the proposed project and simulation are oriented. The Project would be seen distantly at over 21 mi (34 km).
Size and Scale	Medium	Aesthetic characteristics including form, line, color, texture, and motion are rated individually above. The Project occupies 19.6% of the available horizontal field of view provided by the simulation. In this context the Project would be readily apparent after even a brief look and would be visible to most casual observers. The object is clearly evident and represents a prominent new feature within a largely unchanged wider visual context. Full views of the proposed Project would be experienced when facing the direction of the Project.
Duration and Reversibility	Fair	Although the proposed Project's lifespan is expected to be 35 years, it will be fully reversible.
Overall Magnitude Rating: Medium		
Overall Impact Level	**Rating**	**Rationale**
Visual Impact Assessment:	Moderate	The proposed Project would form a relatively modest impact to the receptor at this KOP as it would introduce a new focal point on the principal view from this highly sensitive KOP, its prominence being exacerbated by the simple horizontal form of the horizon on which it would be seen. The Project would also lessen the perceived naturalness experienced at the KOP and increase the degree of perceived activity present.

ELIZABETH ISLANDS

TABLE 23: VIA RATING FORM KOP-EI01: CUTTYHUNK LOOKOUT					
Section A.KOP Information					
KOP Reference Number: KOP-EI01	**Name of KOP:** Cuttyhunk Lookout	**KOP Distance from Project:** 40 mi (65 km) **Elevation:** 163.5 ft AMSL	**Date visited:** March 4, 2022	**Time of visit:** 11:00 am	**Weather conditions:** Sunny, clear skies
Location: Cuttyhunk Island is the outermost island of the Elizabeth Islands in Massachusetts, with a land area of about 580 acres. The island is only accessible by boat and has an occasional ferry that goes two and from New Bedford, MA. The island is within the town of Gosnold. Cuttyhunk Island was originally settled by the native Wampanoag tribe, and later on known for its World War II bunkers and former Coast Guard station. It now has only about three dozen full time residents and remains remote and serene with lightly developed land.					
Visual Impact Receptors (Viewer Groups): Recreational Users and Tourists.					
Visual Context The visual context of this KOP is dynamic and changeable in nature, reflected in seasonal changes in vegetation,as well as variability in light and atmospheric conditions, and patterns of recreational use and the frequency and number of recreational visitors. The scale of the view from this KOP and seaward views across the OCA dominates and forms a crucial aspect of the scenic quality at this KOP, as does its essentially dark condition at night.					
Affected Environment					
SLCA Context The KOP is located in the Coastal Scrub Bush LCA as described in Table X.5-13, but also subject to the considerable influence of the neighboring OCA and Rural/Suburban Residential SLCAs.					
Key Characteristics of the SLCA and View at KOP Location The dominant visual characteristics comprise a gently undulating area of native scrub with views of scattered dwellings, set against a backdrop of the open waters of Vineyard Sound, beyond which Martha's Vineyard and Nomans Land Island are seen on the horizon. The OCA is characterized by 'flat' open expanse of water, the blue color reflecting the sky, the smooth to rippling texture of the water surface. Scenic integrity is high, due to the remoteness of the island. The dark horizon line is predominantly visible providing a distinct linear break between the ocean and the sky. Ocean evaporation from warm summer temperatures often creates a grayish white band of haze between the ocean and the warm blue sky. Barges are seen year-round in the waters of the area. Ocean conditions range from flat water to rippling to rolling swells.					
Form	Curving island top, which gently undulates.				
Line	irregular, gently curving lines, interrupted in places by rectilinear forms associated with dwellings. A low horizontal form of the OCA that forms a straight skyline.				
Pattern	Simple pattern of land use.				
Color	Highly variable depending on light and weather conditions. Browns, tans, greys and greens of scrub and grasses, to tan and brown beaches and landmasses, to blue/gray ocean against the blue sky.				
Texture	The scrub has a coarse texture that gives way to the smoother, more uniform OCA waters.				

TABLE 23: VIA RATING FORM KOP-EI01: CUTTYHUNK LOOKOUT	
Movement	Variable, depending upon frequency and number of recreational receptors and residents of nearby dwellings, tidal patterns and the sea state of the neighboring OCA. Some movement also preset in the form of ferries travelling between the mainland and Martha's Vineyard and Nantucket.
Perceptual Characteristics	Variable, depending upon frequency and number of recreational and residential receptors, as well as seasonal and time of day. Rangingfrom natural, restful, tranquil and peaceful to busy/active.

B. Contrast, Magnitude of Impact, and Sensitivity Rating [KOP-EI01]

Description of Projects Appearance in the context of the Affected Environment

The proposed Project would be visible on the distant horizon, offshore, to the southeast. 155 of the Project turbines would theoretically be visible from this KOP but would be partially screened by the intervening landmass of Martha's Vineyard and Nomans Land Island. Rotor movement, while theoretically discernible, is unlikely to be immediately apparent due to the slow rotational speed of turbine blades and the distance at which Project would be viewed. The visibility of the Project would be greatest during periods of particularly good visibility and clear skies, and when the turbines are backlitby the sun and would contrast with the color of the clear sky. The Project would also be apparent at night, introducing new artificial flashing light sources and the uncoordinated nature of the flashing light due to intermittent screening of lights by rotors offshore when turbine lights are triggered.However, such effects would be infrequent and of short duration.

Aesthetic and Perceptual Characteristics[1]	**Rating**	**Degree of Contrast**
Forms	2 Small	The proposed Project would introduce small scale vertical elements to the essentially horizontal horizon that is a key determining characteristic of the landscape at this KOP.
Line	2 Small	The proposed Project would introduce an array of small-scale vertical elements to the flat horizon that forms a key aspect of seaward views from SLCA at this KOP.
Pattern	0 No Impact	The proposed Project would not affect the pattern of elements within the view.
Color	2 Small	The proposed Project's turbine blades, hubs, and nacelles have been rendered at RAL 9010 (Pure White), rendering it relatively recessive against the pale sky. Some contrast is likely, however, during periods of clear visibility when the proposed Project is sunlit or backlit, when color contrast with the sky would be greatest.
Texture	2 Small	The proposed Project would introduce coarser elements to the distant horizon that is an important characteristic of this KOP.
Movement	2 Small	While the proposed Project would introduce further movement to the distant horizon in views from this KOP in the form of rotor movement, this would not be immediately apparent due to the slow rotor speed anticipated and the distance at which the turbines would be viewed.
Receptor Sensitivity Factor	**Rating**	**Rationale**
Susceptibility	High	Receptor susceptibility is high at this KOP due to the expansive views out towards the vast OCA. Cuttyhunk lookout is the highest elevation point on the island making the KOP an attraction for the receptors.

[1] Aesthetic and Perceptual Characteristics ratings are adapted from the BLM Visual Resource Management system (see Table X.6-4 in Section X.6.1.6.2). The rest of the ratings (sensitivity, magnitude, and overall impact) are based on slight derivation of BOEM's SLVIA Guidance ratings matrix.

TABLE 23: VIA RATING FORM KOP-EI01: CUTTYHUNK LOOKOUT		
Value	High	The value at this beach remains high due to the remote location of Cuttyhunk. The views are natural with no existing intrusions and limited access to the island. A viewing platform is located at this KOP to enhance the overlooks.
Overall Sensitivity Rating: High		
Magnitude Factor	**Rating**	**Rationale**
Geographic Extent	Medium	The proposed Project is located in the center of the horizontal field of view. There is a 360-degree view from this outlooking, therefore there is not one principal view from this KOP. The proposed project and simulation are oriented southeast. The Project is partially blocked, and framed, by the Martha's Vineyard landmass and Nomans Land. The Project would be seen distantly at over 40 mi (65 km).
Size and Scale	Small	Aesthetic characteristics including form, line, color, texture, and motion are rated individually above. The Project occupies 18.1% of the available horizontal field of view provided by the simulation. In this context the Project would appear very small, but when the observer scans the horizon in the correct direction, it can be detected without prolonged viewing. Full views of the proposed Project would be experienced when facing the direction of the Project due to the nature of the lookout.
Duration and Reversibility	Fair	Although the proposed Project's lifespan is expected to be 35 years, it will be fully reversible.
Overall Magnitude Rating: Small		
Overall Impact Level	**Rating**	**Rationale**
Visual Impact Assessment:	Moderate	The proposed Project would form a relatively modest impact to the receptor at this KOP as it would introduce a new focal point on the principal view from this highly sensitive KOP, its prominence being exacerbated by the simple horizontal form of the horizon on which it would be seen. The Project would also lessen the perceived naturalness experienced at the KOP and increase the degree of perceived activity present.

TABLE 24: VIA RATING FORM KOP-CC03: MENAUHANT BEACH					
Section A.KOP Information					
KOP Reference Number: KOP-CC03	**Name of KOP:** Menauhant Beach	**KOP Distance from Project:** 38.57 mi (62.07 km) **Elevation**: 8.5 ft AMSL	**Date visited:** March 2, 2022	**Time of visit:** 12:10 pm	**Weather conditions:** Sunny, mostly clear skies
Location: This KOP is situated on Menauhant Beach on the southern seaboard of Cape Cod. The beach is located on the southern side of Menauhant Road that runs along the southern side of Israel's Cove and Bourne's Pond. It is a popular beach, particularly for the residents of East Falmouth.					
Visual Impact Receptors (Viewer Groups): Recreational Users and Tourists.					
Visual Context The visual context of this KOP is dynamic and changeable in nature, reflected in tidal patterns, as well as variability in light and atmospheric conditions, and patterns of recreational use and the frequency and number of recreational visitors. The scale of the view from this KOP and seaward views across the OCA dominates and forms a crucial aspect of the scenic quality at this KOP, as does its essentially dark condition at night.					
Affected Environment					
SLCA Context The KOP is located in the Ocean Beach SCA as described in Table X.5-13, but also subject to the considerable influence of the neighboring Rural/Urban Residential LCA, open waters of the Vineyard Sound, and Salt Ponds/Tidal Marshes.					
Key Characteristics of the SLCA and View at KOP Location • A low-lying position situated on the beach/foreshore that gently slopes to the water's edge landscape • An Ocean Beach with expansive open views across the neighboring OCA. • Scenic integrity is generally high due to the expansive seaward views from the beach. However, this is a developed and populous location that is subject to considerable influence by neighboring residential areas and the road and car parking areas at the beach. • During hours of darkness the character of the seascape/landscape at the KOP is influenced by glimpses of scattered lighting associated with onshore elements such as properties, traffic on roads and lighthouses etc., viewed intermittently nearby. It is also influenced by views across the OCA which contains transient lighting from vessels, navigation aids and moonlight reflecting on the water.					
Form	Flat to gently sloped beach.				
Line	Strongly linear, but somewhat irregular, dynamic line where beach meets the water's edge.				
Pattern	Essentially simple pattern of land use.				
Color	Tan of open beach contrasts with greens of neighboring wooded residential areas and blues and grays of the neighboring OCA SLCAOCA and sky.				
Texture	Varied. From the coarseness of jetties and the causeway construction to smooth, fine texture of the foreshore and open sea.				
Movement	Strongly linear, but somewhat irregular, dynamic line where beach meets the water's edge.				

TABLE 24: VIA RATING FORM KOP-CC03: MENAUHANT BEACH	
Perceptual Characteristics	Variable, depending upon frequency and number of recreational users, as well as seasonal and time of day. Rangingfrom natural, restful, tranquil, and peaceful to busy/active.

B. Contrast, Magnitude of Impact, and Sensitivity Rating [KOP-CC03]

Description of Projects Appearance in the context of the Affected Environment

The proposed Project would be barely visible on the distant horizon, offshore, to the south and would be partially obscured by the intervening landmass of Martha's Vineyard. Twenty-four of the Project turbines would, however, be visible from this KOP. Approximately 131 of the Project's turbines would be entirely screened by the curvature of the earth. Rotor movement, while discernible, is unlikely to be immediately apparent due to the slow rotational speed of turbine blades and the distance at which Project would be viewed. The visibility of the Project would be greatest during periods of particularly good visibility and clear skies, and when the turbines are backlit by the sun and would contrast with the color of the clear sky.

Aesthetic and Perceptual Characteristics[1]	**Rating**	**Degree of Contrast**
Forms	1 Negligible	The proposed Project would not affect the form of the view at this KOP as it near the extreme limit of visibility.
Line	1 Negligible	The proposed Project would not alter the line of the view at this KOP as it near the extreme limit of visibility.
Pattern	1 Negligible	The proposed Project would not interrupt the pattern of the view at this KOP as it near the extreme limit of visibility.
Color	2 Small	The proposed Project's turbine blades, hubs, and nacelles have been rendered at RAL 9010 (Pure White), rendering it relatively recessive against the pale sky. Some contrast is likely, however, during periods of clear visibility when the proposed Project is sunlit or backlit, when color contrast with the sky would be greatest.
Texture	1 Negligible	The proposed Project would not alter the texture of the view at this KOP as it near the extreme limit of visibility.
Movement	2 Small	While the proposed Project would introduce further movement to the distant horizon in views from this KOP in the form of rotor movement, this would not be immediately apparent due to the slow rotor speed anticipated and the distance at which the turbines would be viewed.
Receptor Sensitivity Factor	**Rating**	**Rationale**
Susceptibility	High	Receptor susceptibility is high at this KOP due to the expansive views out towards the Vineyard Sound. The visual environment from this beach is an important asset to those in the East Falmouth Community.
Value	High	The value at this beach remains high due to the abundance of recreational users and tourists that use the beach. The beach has an associated large parking area for visitors.

Overall Sensitivity Rating: High

[1] Aesthetic and Perceptual Characteristics ratings are adapted from the BLM Visual Resource Management system (see Table X.6-4 in Section X.6.1.6.2). The rest of the ratings (sensitivity, magnitude, and overall impact) are based on slight derivation of BOEM's SLVIA Guidance ratings matrix.

TABLE 24: VIA RATING FORM KOP-CC03: MENAUHANT BEACH		
Magnitude Factor	**Rating**	**Rationale**
Geographic Extent	Medium	The proposed Project is located in the center of the horizontal field of view. The principal outlook from this KOP is facing south, which is where the proposed project and simulation are oriented. The Project is mostly blocked by the Martha's Vineyard landmass. The Project would be seen distantly at over 39 mi (62 km).
Size and Scale	Small	Aesthetic characteristics including form, line, color, texture, and motion are rated individually above. The Project occupies 16.2% of the available horizontal field of view provided by the simulation. In this context the Project would appear very small, but when the observer scans the horizon in the correct direction, it can be detected without prolonged viewing. View duration would likely be full due to the type of recreating at this beach (mostly stationary).
Duration and Reversibility	Fair	Although the proposed Project's lifespan is expected to be 35 years, it will be fully reversible.
Overall Magnitude Rating: Small		
Overall Impact Level	**Rating**	**Rationale**
Visual Impact Assessment:	Minor	The proposed Project would form a relatively minor change to the view due to the small magnitude of change to which receptors' sensitivity is high. The proposed Project is at a far distance and mostly obscured by Martha's Vineyard, but when viewed, would lessen the perceived naturalness experienced at the KOP and increase the degree of perceived movement present.

Attachment X-4

Offshore Photograph Log

Provided Under Separate Cover

Attachment X-5

BW1/BW2 Onshore Visual Simulations - Queens, New York

Provided Under Separate Cover

Attachment X-6

BW1/BW2 Onshore VIA Rating Forms - Queens, New York

NEW YORK ONSHORE – BW1/BW2

TABLE 1: QUEENS ONSHORE VIA RATING FORM KOP-NY01 RANDALL'S ISLAND FIELD 27					
Section A. KOP Information					
KOP Reference Number: NY01	**Name of KOP:** Randall's Island Field 27	**KOP Distance from Project:** AGRE – 0.5 mi (0.85 km) NYPA – 0.28 mi (0.45 km) **Elevation:** 6.5 ft (2.0 m)	**Date visited:** April 22, 2021	**Time of visit:** 11:02am	**Weather conditions and visibility during visit:** Partly cloudy
Location: This KOP is located on the side of the Sunken Meadow Loop at the northeastern edge of Randall's Island. The location is utilized by recreational users (both those engaged in sports as well as those using the site for walking). The KOP affords open expansive views across the East River.					
Affected Environment					
SLCA Context The KOP is located in an area of Open Green Space on Randall's Island which is part of the River Islands LCA as described in Table X.5-11 but is subject to the considerable influence of the neighboring River Corridor SCA.					
Visual Impact Receptors (Viewer Groups): Recreational Users					
Visual Context The visual context of this KOP is dynamic and changeable in nature, reflected in tidal patterns, as well as variability in light and atmospheric conditions, as well as patterns of recreational use and the frequency and number of recreational visitors. The scale of the view from this KOP and views across the East River dominate and form a crucial aspect of the scenic quality at this KOP.					
Key Characteristics of the SLCA and View at KOP Location • Situated in a low lying, essentially flat area of managed Open Green Space that is typified by sports fields, asphalt tracks, streetlights, and occasional street furniture. • The horizontal form of the view at the KOP and the simplicity and openness of the adjoining East River contrast with the numerous vertical structures visible on the skyline in all directions. • Neighboring industrial buildings, power stations and road flyovers and rail viaducts form prominent features on the skyline of views from this KOP. • While the condition of the landscape at the KOP is generally good, the prevalence of transport infrastructure and industrial structures constitute notable detractors. • During hours of darkness the view of the seascape/landscape/cityscape at the KOP is subject to the influence of extensive lighting within neighboring urban areas and industrial areas abutting the East River. Vehicle and train lights on elevated rods/viaducts are especially conspicuous across the night sky.					
Form	Underlying form is flat/horizontal, but is interrupted by a combination of industrial buildings, transport infrastructure and nearby trees in the Field 27.				
Line	Rectilinear lines predominate, including those of the shoreline where the land meets the East River.				

TABLE 1: QUEENS ONSHORE VIA RATING FORM KOP-NY01 RANDALL'S ISLAND FIELD 27	
Pattern	Some simplicity in respect of underlying form and the openness of the adjoining East River but subject to the significant influence of the complex assemblage of built forms in nearby industrial areas and transportation corridors.
Color	Highly varied, from the muted greens and greys at the KOP, to red, browns, greys, and whites within nearby industrial areas and along transportation corridors.
Texture	Varied, ranging from smoothness of mown grasslands of field, to the coarse textures of adjoining tree cover, industrial buildings, and transportation infrastructure.
Movement	There is a considerable movement present nearby this KOP in the form of vehicles on road flyovers and trains on the viaduct to the north-west. Movement is also present within the industrial area to the southeast at Lawrence Point and on the East River.
Perceptual Characteristics	Variable, depending upon frequency and number of recreational users present as well as seasonal and time of day, but generally relatively busy/active, exciting, and stimulating. At night, the view at this KOP contains existing artificial light sources and movement associated with street lighting and neighboring roads and rail and lighting in adjoining industrial and residential areas.

B. Contrast, Magnitude of Impact, and Sensitivity [KOP-NY01]		
Aesthetic and Perceptual Characteristics[1]	**Rating**	**Degree of Contrast**
Form	Scenario 1 –2 Small Scenario 2 – 3 Small to Moderate	Scenario 1 – AGRE would introduce a medium-scale rectangular structure to the background of the view. Scenario 2 – NYPA and AGRE East would introduce a further large-scale rectangular structure to the skyline in the background of the view.
Line	Scenario 1 – 3 Small to Moderate Scenario 2 – 3 Small to Moderate	Scenario 1 –AGRE would introduce further horizontal and vertical lines to a part of the background of the view that is already subject to geometric lines, due to the addition of the HVAC interconnection cables. Scenario 2 – NYPA and AGRE East would introduce further geometric, horizontal, and vertical lines to a part of the background of the view that is already subject to geometric lines.
Pattern	Scenario 1 – 3 Small to Moderate Scenario 2 – 3 Small to Moderate	Scenario 1 – AGRE would add to the pattern of industrial/energy related developments to the east of this KOP. Scenario 2 – NYPA and AGRE East would add to the pattern of industrial/energy related developments to the east of this KOP.

[1] Aesthetic and Perceptual Characteristics ratings are adapted from the BLM Visual Resource Management system (see Table X.6-4 in Section X.6.1.6.2). The rest of the ratings (sensitivity, magnitude, and overall impact) are based on slight derivation of BOEM's SLVIA Guidance ratings matrix.

TABLE 1: QUEENS ONSHORE VIA RATING FORM KOP-NY01 RANDALL'S ISLAND FIELD 27		
Color	Scenario 1 – 2 Small Scenario 2 – 2 Small	Both Scenario 1 and Scenario 2 would comprise of brick red buildings and HVAC interconnection cables in keeping with existing buildings and associated infrastructure in the Light Industrial/Transportation areas that form the backdrop to the view.
Texture	Scenario 1 – 1 Negligible Scenario 2 – 1 Negligible	Both Scenario 1 and Scenario 2 would add to the existing coarse texture that is evident in the background of the view.
Movement	Scenario 1 – 1 Negligible Scenario 2 – 1 Negligible	In both Scenario 1 and Scenario 2, most site movements would occur within the substation building or would be screened by lower lying structures.
Receptor Sensitivity Factor	**Rating**	**Rationale**
Susceptibility	Low	Receptors at this KOP have a varied experience as some are engaged in sporting activities that do not prioritize views, and others use the grass and benches set within the parks for viewing out across the river where their attention is on the surrounding landscape or particular views. Receptors will not be susceptible to changes in this environment due to the pre-existing industrial context.
Value	Medium	This KOP is visited often by recreational users who are engaged in activity and/or viewing. The waterfront fields are unique and provide restroom facilities and parking on site. The park is in good condition but is surrounded by an existing urbanized and industrialized setting along the riverfront.
Overall Sensitivity Rating: Low		
Magnitude Factor	**Rating**	**Rationale**
Geographic Extent	Scenario 1 – Small Scenario 2 – Small	Both Scenario 1 and Scenario 2 would have a small geographic extent. The substation scenarios would be to the right of the horizontal field of view, however there is no one principal outlook from this KOP as viewer orientation varies depending on the position of the recreator or the spectator. The simulation for this KOP is oriented southeast. AGRE would be located 0.5 mi (0.85 km) from this KOP and NYPA would be located 0.28 mi (0.45 km).
Size and Scale	Scenario 1 – Small Scenario 2 – Small	Aesthetic characteristics including form, line, color, texture, and motion are rated individually above. In this context both scenarios would not be readily apparent after a brief look but would eventually be visible to most casual observers. The size and scale of the Project is unlikely to compete with existing elements from this KOP.

TABLE 1: QUEENS ONSHORE VIA RATING FORM KOP-NY01 RANDALL'S ISLAND FIELD 27		
Duration and Reversibility	Fair	Although the proposed Project's lifespan is expected to be 35 years, it will be fully reversible.
Overall Magnitude Rating: Scenario 1 – Small Scenario 2 – Small		
Overall Impact Level	**Rating**	**Rationale**
Visual Impact Assessment:	Scenario 1 – Minor Scenario 2 – Minor	Both Scenario 1 and Scenario 2 would be discernable without prolonged viewing and sometimes be noticed by casual observers yet would constitute a localized change within a largely unchanged wider context without competing with key elements of the view.

TABLE 2: QUEENS ONSHORE VIA RATING FORM KOP-NY02 RANDALL'S ISLAND FIELD 31					
Section A. KOP Information					
KOP Reference Number: NY02	**Name of KOP:** Randall's Island Field 31	**KOP Distance from Project:** AGRE – 0.5 mi (0.85 km) NYPA – 0.3 mi (0.5 km) **Elevation:** 6.5 ft (2.0 m)	**Date visited:** April 22, 2021	**Time of visit:** 10:22 am	**Weather conditions and visibility during visit:** Partly cloudy
Location: This KOP is located on the side of the Sunken Meadow Loop at the north-eastern edge ofRandall's Island. The location is utilized by recreational receptors (both those engaged in sports as well as those using the site for walking). The KOP affords open expansive views across the East River.					
Affected Environment					
SLCA Context The KOP is located in an area of Open Green Space on Randall's Island which is part of the River Islands character area as described in Table X.5-11 but is subject to the considerable influence of the neighboring River Corridor character area.					
Visual Impact Receptors (Viewer Groups): Recreational Users					
Visual Context The visual context of this KOP is dynamic and changeable in nature, reflected in tidal patterns, as well as variability in light and atmospheric conditions, as well as patterns of recreational use and the frequency and number of recreational visitors. The scale of the view from this KOP and views across the East River dominates and forms a crucial aspect of the scenic quality at this KOP.					
Key Characteristics of the SLCA and View at KOP Location • Situated in a low lying, essentially flat area of managed Open Green Space that is typified by sports fields, asphalt tracks, streetlights and occasional street furniture. • The horizontal form of the view at the KOP and the simplicity and openness of the adjoining East River contrast with the numerous vertical structures visible on the skyline in all directions. • Neighboring industrial buildings, power stations and road flyovers and rail viaducts form prominent features on the skyline of views from this KOP. • While the condition of the landscape at the KOP is generally good, the prevalence of transport infrastructure and industrial structures constitute notable detractors. • During hours of darkness the view of the seascape/landscape/cityscape at the KOP is subject to the influence of extensive lighting within neighboring urban areas and industrial areas abutting the East River. Vehicle and train lights on elevated roads/viaducts are especially conspicuous across the night sky.					
Form	Underlying form is flat/horizontal, but is interrupted by a combination of industrial buildings, transport infrastructure and by nearby trees in Field 27.				
Line	Rectilinear lines predominate, including those of the shoreline where the land meets the East River.				
Pattern	Some simplicity in respect of underlying form and the openness of the adjoining East River but subject to the significant influence of the complex assemblage of built forms in nearby industrial areas and transportation corridors.				

TABLE 2: QUEENS ONSHORE VIA RATING FORM KOP-NY02 RANDALL'S ISLAND FIELD 31	
Color	The substation would comprise a brick red building in keeping with existing buildings in the Light Industrial/Transportation areas that form the backdrop to the view.
Texture	Varied, ranging from smoothness of mown grasslands of field, to the coarse textures of adjoining tree cover, industrial buildings and transportation infrastructure.
Movement	There is a considerable movement present nearby this KOP in the form of vehicles on road flyovers and trains on the viaduct to the north-west. Movement is also present within the industrial area to the southeast at Lawrence Point and on the East River.
Perceptual Characteristics	Variable, depending upon frequency and number of recreational users present as well as seasonal and time of day, but generally relatively busy/active, exciting, and stimulating. At night, the SLCA at this KOP contains existing artificial light sources and movement associated with street lighting and neighboring roads and rail and lighting in adjoining residential and industrial areas.

B. Contrast, Magnitude of Impact, and Sensitivity [KOP-NY02]		
Aesthetic and Perceptual Characteristics[1]	**Rating**	**Degree of Contrast**
Form	Scenario 1 – 2 Small Scenario 2 – 3 Small to Moderate	Scenario 1 – AGRE would introduce a medium-scale rectangular structure to the background of the view. Scenario 2 – NYPA and AGRE East would introduce a further large-scale rectangular structure to the skyline in the background of the view.
Line	Scenario 1 – 3 Small to Moderate Scenario 2 – 3 Small to Moderate	Scenario 1 –AGRE would introduce further horizontal and vertical lines to a part of the background of the view that is already subject to geometric lines, due to the addition of the HVAC interconnection cables. Scenario 2 – NYPA and AGRE East would introduce further geometric, horizontal, and vertical lines to a part of the background of the view that is already subject to geometric lines.
Pattern	Scenario 1 – 3 Small to Moderate Scenario 2 – 3 Small to Moderate	Scenario 1 – AGRE would add to the pattern of industrial/energy related developments to the east of this KOP. Scenario 2 – NYPA and AGRE East would add to the pattern of industrial/energy related developments to the east of this KOP.

[1] Aesthetic and Perceptual Characteristics ratings are adapted from the BLM Visual Resource Management system (see Table X.6-4 in Section X.6.1.6.2). The rest of the ratings (sensitivity, magnitude, and overall impact) are based on slight derivation of BOEM's SLVIA Guidance ratings matrix.

TABLE 2: QUEENS ONSHORE VIA RATING FORM KOP-NY02 RANDALL'S ISLAND FIELD 31		
Color	Scenario 1 – 2 Small Scenario 2 – 2 Small	Both Scenario 1 and Scenario 2 would comprise of brick red buildings and HVAC interconnection cables in keeping with existing buildings and associated infrastructure in the Light Industrial/Transportation areas that form the backdrop to the view.
Texture	Scenario 1 – 1 Negligible Scenario 2 – 1 Negligible	Both Scenario 1 and Scenario 2 would add to the existing coarse texture that is evident in the background of the view.
Movement	Scenario 1 – 1 Negligible Scenario 2 – 1 Negligible	At both Scenario 1 and Scenario 2, the majority of site movements would occur within the substation building or would be screened by lower lying structures.
Receptor Sensitivity Factor	**Rating**	**Rationale**
Susceptibility	Low	Receptors at this KOP have a varied experience as some are engaged in sporting activities that do not prioritize views, and others use the grass and benches set within the parks for viewing out across the river where their attention is on the surrounding landscape or particular views. Receptors will not be susceptible to changes in this environment due to the pre-existing industrial context.
Value	Medium	This KOP is visited often by recreational users who are engaged in activity and/or viewing. The waterfront fields are unique and provide restroom facilities and parking on site. The park is in good condition but is surrounded by an existing urbanized and industrialized setting along the riverfront.
Overall Sensitivity Rating: Low		
Magnitude Factor	**Rating**	**Rationale**
Geographic Extent	Scenario 1 – Small Scenario 2 – Small	Both Scenario 1 and Scenario 2 would have a small geographic extent. Although the substation scenarios would be in the center of the horizontal field of view, there is no one principal outlook from this KOP as viewer orientation varies depending on the position of the recreator or the spectator. The simulation for this KOP is oriented southeast. AGRE would be located 0.5 mi (0.85 km) from this KOP and NYPA would be located 0.3 mi (0.5 km).
Size and Scale	Scenario 1 – Small Scenario 2 – Small	Aesthetic characteristics including form, line, color, texture, and motion are rated individually above. In this context both scenarios would not be readily apparent after a brief look but would eventually be visible to most casual observers. The size and scale of the Project is unlikely to compete with existing elements from this KOP.
Duration and Reversibility	Fair	Although the proposed Project's lifespan is expected to be 35 years, it will be fully reversible.

TABLE 2: QUEENS ONSHORE VIA RATING FORM KOP-NY02 RANDALL'S ISLAND FIELD 31		
Overall Magnitude Rating: Scenario 1 – Small Scenario 2 – Small		
Overall Impact Level	**Rating**	**Rationale**
Visual Impact Assessment:	Scenario 1 – Minor Scenario 2 – Minor	Both Scenario 1 and Scenario 2 would be discernable without prolonged viewing and sometimes be noticed by casual observers yet would constitute a localized change within a largely unchanged wider context without competing with key elements of the view.

TABLE 3: QUEENS ONSHORE VIA RATING FORM KOP-NY03 BARRETTO POINT PARK					
Section A. KOP Information					
KOP Reference Number: NY03	**Name of KOP:** Barretto Point Park	**KOP Distance from Project:** AGRE – 1.4 mi (2.3 km) NYPA – 1.5 mi (2.4 km) **Elevation:** 14.5 ft (4.4 m)	**Date visited:** April 22, 2021	**Time of visit:** 9:03 am	**Weather conditions and visibility during visit:** Partly cloudy

Location:
This KOP is located on the southern edge of the park where recreational receptors are provided clear, unencumbered views across the East River. The riverfront destination offers receptors to fish, play field or court sports, and swim in the pool on the floating barge.

Affected Environment

SLCA Context
The KOP is located in an area of Open Green Space character unit as described in Table X.5-11 but is subject to the influence of the neighboring industrial areas to the north and east of the park, and the maritime influences of the River Corridor to the south and west.

Visual Impact Receptors (Viewer Groups): Recreational Users

Visual Context
The visual context of this KOP is dynamic and changeable in nature, reflected in tidal patterns, as well as variability in light and atmospheric conditions, as well as patterns of recreational use and the frequency and number of recreational visitors. The scale of the view from this KOP and views across the East River dominates and forms a crucial aspect of the scenic quality at this KOP.

Key Characteristics of the SLCA and View at KOP Location

- Situated in a low lying, essentially flat area of managed Open Green Space that is typified by open grasslands, extensive tree over, a network of paths and tracks, vantage points, sports pitches, and street furniture. The waterfront of the park is characterized by a combination of shallow graded beaches and revetments in the form of 'rip-rap' with walking paths situated on top.
- The low horizontal form, simplicity, and openness of the East River that forms a crucial constituent of the park's scenic quality and character, contrast with the complex assemblage of the city skyline in the background.
- The Park is enclosed on all sides by tree cover that subdivides the park from the adjoining cityscape neighboring industrial buildings.
- While the condition of the landscape at the KOP is generally good, the prevalence of maritime, industrial structures and urban forms exerts considerable influence on the character and amenity at the KOP.
- During hours of darkness, the view of the seascape/landscape/cityscape at the KOP is subject to the influence of extensive lighting within neighboring urban areas and industrial areas abutting the East River.

Form	Underlying form is flat/horizontal but is interrupted by a combination of industrial buildings and by perimeter trees.
Line	Rectilinear lines predominate, including those of the shoreline where the land meets the East River.
Pattern	Some simplicity in respect of underlying form and the openness of the adjoining East River but subject to the significant influence of the complex assemblage of built forms nearby.
Color	Highly varied, from the muted greens and grays at the KOP, to red, browns, greys and whites within nearby industrial areas.

TABLE 3: QUEENS ONSHORE VIA RATING FORM KOP-NY03 BARRETTO POINT PARK	
Texture	Varied, ranging from smoothness of mown grasslands of the park, to the coarse textures of adjoining tree cover and industrial buildings.
Movement	Variable degrees of movement present at this KOP in the form of recreational receptors, vessels on the East River and vehicles and trains on elevated flyovers/viaducts to the southwest.
Perceptual Characteristics	Variable, depending upon frequency and number of recreational users present as well as seasonal and time of day, but generally relatively busy/active, exciting, and stimulating. At night, the SLCU at this KOP contains existing artificial light sources and movement associated with

B. Contrast, Magnitude of Impact, and Sensitivity [KOP-NY03]		
Aesthetic and Perceptual Characteristics[1]	**Rating**	**Degree of Contrast**
Form	Scenario 1 – 2 Small Scenario 2 – 2 Small	Both Scenario 1 and Scenario 2 would introduce a distant small-scale rectangular structure to the skyline in the background of the view.
Line	Scenario 1 – 2 Small Scenario 2 – 2 Small	Both Scenario 1 and Scenario 2 would introduce further straight horizontal and vertical lines to a part of the background of the view where such line qualities are commonplace.
Pattern	Scenario 1 – 2 Small Scenario 2 – 2 Small	Both Scenario 1 and Scenario 2 would add to the existing pattern of industrial/energy related developments surrounding this KOP.
Color	Scenario 1 – 2 Small Scenario 2 – 2 Small	Both Scenario 1 and Scenario 2 would comprise brick red buildings in keeping with existing buildings in the Light Industrial/Transportation areas that form the backdrop to the view.
Texture	Scenario 1 – 1 Negligible Scenario 2 – 1 Negligible	Both Scenario 1 and Scenario 2 would add to the existing coarse texture that is evident in the background of the view.

[1] Aesthetic and Perceptual Characteristics ratings are adapted from the BLM Visual Resource Management system (see Table X.6-4 in Section X.6.1.6.2). The rest of the ratings (sensitivity, magnitude, and overall impact) are based on slight derivation of BOEM's SLVIA Guidance ratings matrix.

TABLE 3: QUEENS ONSHORE VIA RATING FORM KOP-NY03 BARRETTO POINT PARK		
Movement	Scenario 1 – 1 Negligible Scenario 2 – 1 Negligible	At both Scenario 1 and Scenario 2, the majority of site movements would occur within the substation building.
Receptor Sensitivity Factor	**Rating**	**Rationale**
Susceptibility	Low	Receptors at this KOP are mostly engaged in sporting and other recreation activities that do not prioritize views. Receptors that are using this location as a viewing point across the river not likely be susceptible to changes in this environment due to the pre-existing industrial context.
Value	Medium	This KOP is visited often by recreational users in the Bronx communities who are engaged in activity and/or sometimes viewing. The waterfront field and pool on a floating barge are unique and restroom facilities and parking are on site. The park is in good condition but is surrounded by an existing urbanized and industrialized setting along the riverfront.
Overall Sensitivity Rating: Low		
Magnitude Factor	**Rating**	**Rationale**
Geographic Extent	Scenario 1 – Small Scenario 2 – Small	Both Scenario 1 and Scenario 2 would have a small geographic extent. The substation scenarios would be towards the center-left of the horizontal field of view. The principal outlook from this KOP is in the general direction of the Project, however viewer orientation may vary depending on the position of the recreator or the spectator. The simulation for this KOP is oriented southeast. AGRE would be located 1.4 mi (2.3 km) from this KOP and NYPA would be located 1.5 mi (2.4 km).
Size and Scale	Scenario 1 – Small Scenario 2 – Small	Aesthetic characteristics including form, line, color, texture, and motion are rated individually above. In this context both scenarios would not be readily apparent after a brief look but would eventually be visible to most casual observers. It would appear as very small. The size and scale of the Project would not compete with existing elements from this KOP.
Duration and Reversibility	Fair	Although the proposed Project's lifespan is expected to be 35 years, it will be fully reversible.
Overall Magnitude Rating: Scenario 1 – Small Scenario 2 – Small		
Overall Impact Level	**Rating**	**Rationale**
Visual Impact Assessment:	Scenario 1 – Minor Scenario 2 – Minor	Both Scenario 1 and Scenario 2 would be barely discernable and sometimes be noticed by casual observers yet would constitute a localized change within a largely unchanged wider context without competing with key elements of the view.

TABLE 4: QUEENS ONSHORE VIA RATING FORM KOP-NY04 ICYP YOUTH FIELDS					
Section A. KOP Information					
KOP Reference Number: NY04	**Name of KOP:** ICYP Youth Fields	**KOP Distance from Project:** AGRE – 0.46 mi (0.74 km) NYPA – 0.75 mi (1.2 km) **Elevation:** 13.1 ft (4.0 m)	**Date visited:** April 22, 2021	**Time of visit:** am	**Weather conditions and visibility during visit:** Partly cloudy
Location: This KOP is located on sidewalk of 20th Avenue, opposite the junction with 35th Street, looking across the ICYP Youth Fields. It is representative of views obtained by recreational users, pedestrians, road users as well as nearby residential receptors.					
Affected Environment					
SLCA Context The KOP is located on the boundary of the Urban/Residential/Commercial Areas and Light Industrial/Transportation areas as described in Table X.5-11.					
Visual Impact Receptors (Viewer Groups): Recreational Users					
Visual Context Small scale views dominated by urban forms, but with linking views across playing fields to the north. Buildings are 'softened" by street trees that line the sides of 20th Avenue and 35th Street.					
Key Characteristics of the SLCA and View at KOP Location A complex cityscape comprising the contrasting characters of residential streets where properties are generally 2 or 3 story terraced buildings, interspersed with larger blocks of apartment buildings which reach to 5 stories or more and where buildings are set out in a dense grid pattern along linear streets. Streets run in a northeast/ southwest alignment, with an industrial site located at the northern end of 20th street creating separation from the East River. Small scale commercial development is present within the interior of these settled areas and are screened from views of the substations by intervening housing.					
Form	Complex variations in form, reflecting the different character areas evident at the KOP.				
Line	Rectilinear lines predominate, including those of the residential properties to the east of the KOP, and the industrial structures of the Astoria power station.				
Pattern	Complex assemblages of elements.				
Color	Highly varied, from the muted greens and grays at the KOP, to red, browns, greys and whites within nearby industrial areas and residential areas.				
Texture	Varied, ranging from smoothness of mown grasslands of the park and the open waters of East River, to the coarse textures of adjoining tree cover and industrial buildings and residential properties.				
Movement	High degrees of movement are present at this KOP in the form of pedestrians and road users.				
Perceptual Characteristics	Complex, urban, busy, and transient.				

TABLE 4: QUEENS ONSHORE VIA RATING FORM KOP-NY04 ICYP YOUTH FIELDS		
B. Contrast, Magnitude of Impact, and Sensitivity [KOP-NY04]		
Aesthetic and Perceptual Characteristics[1]	**Rating**	**Degree of Contrast**
Form	Scenario 1 – 0 No Impact Scenario 2 – 0 No Impact	None
Line	Scenario 1 – 0 No Impact Scenario 2 – 0 No Impact	None
Pattern	Scenario 1 – 0 No Impact Scenario 2 – 0 No Impact	None
Color	Scenario 1 – 0 No Impact Scenario 2 – 0 No Impact	None
Texture	Scenario 1 – 0 No Impact Scenario 2 – 0 No Impact	None
Movement	Scenario 1 – 0 No Impact Scenario 2 – 0 No Impact	None
Receptor Sensitivity Factor	**Rating**	**Rationale**
Susceptibility	Low	Receptors at this KOP are fully engaged in sport recreation on the fields. Their views outside of the fields are not a priority.

[1] Aesthetic and Perceptual Characteristics ratings are adapted from the BLM Visual Resource Management system (see Table X.6-4 in Section X.6.1.6.2). The rest of the ratings (sensitivity, magnitude, and overall impact) are based on slight derivation of BOEM's SLVIA Guidance ratings matrix.

TABLE 4: QUEENS ONSHORE VIA RATING FORM KOP-NY04 ICYP YOUTH FIELDS		
Value	Low	This KOP is used often by the ICYP recreators and highly valued as a local sports field. However, this location is not known for valuable views as it is fairly enclosed and used for the purposes of sport recreation within a highly industrialized and urbanized setting.
Overall Sensitivity Rating: Low		
Magnitude Factor	**Rating**	**Rationale**
Geographic Extent	Scenario 1 – None Scenario 2 – None	Both Scenario 1 and Scenario 2 provide no impact to geographic extent due to complete visual obstruction of the substation buildings.
Size and Scale	Scenario 1 – None Scenario 2 – None	Aesthetic characteristics including form, line, color, texture, and motion are rated individually above. In this context, Scenario 1 and Scenario 2 would have no impact on the size and scale due to complete visual obstruction of the substation buildings.
Duration and Reversibility	Fair	Although the proposed Project's lifespan is expected to be 35 years, it will be fully reversible.
Overall Magnitude Rating: Scenario 1 – None Scenario 2 – None		
Overall Impact Level	**Rating**	**Rationale**
Visual Impact Assessment:	Scenario 1 – Negligible Scenario 2 – Negligible	The substations in both Scenario 1 and Scenario 2 would be screened by intervening buildings and vegetation and would therefore have no visual impacts at this KOP.

TABLE 5: QUEENS ONSHORE VIA RATING FORM KOP-NY05 RALPH DEMARCO PARK					
Section A. KOP Information					
KOP Reference Number: NY05	**Name of KOP:** Ralph Demarco Park	**KOP Distance from Project:** AGRE – 0.5 mi (0.85 km) NYPA – 0.4 mi (0.64 km) **Elevation:** 6.5 ft (2.0 m)	**Date visited:** April 22, 2021	**Time of visit:** 11:56 am	**Weather conditions and visibility during visit:** Partly cloudy

Location:
This KOP is located on a cycleway at the northern edge of the park along the western side of Shore Boulevard. The KOP is frequented by recreational receptors and is also representative of views obtained by road users on the boulevard and nearby residential receptors.

Affected Environment

SLCA Context
The KOP is located on the northern boundary of a narrow area of Open Green Space at a confluence of Light Industrial and Transportation areas of Lawrence Point, Astoria Urban/Residential/Commercial Areas, and the East River Corridor.

Visual Impact Receptors (Viewer Groups): Recreational Users

Visual Context
The visual context of this KOP is dynamic and changeable in nature, reflected in tidal patterns, as well as variability in light and atmospheric conditions, as well as patterns of recreational use and the frequency and number of recreational visitors and road users.

Key Characteristics of the SLCA and View at KOP Location

- This KOP is situated in a low lying, essentially flat area of managed Open Green Space that forms a promenade and vantage point as well as providing a dedicated cycleway. The Park is characterized by open grasslands, extensive tree cover, a network of paths and tracks, vantage points, and street furniture. The waterfront of the park comprises a narrow rocky foreshore.
- Given the proximity of neighboring character areas, the KOP is substantially influenced by the contrasting characters of industrial areas, residential areas, and the river.

Form	Complex variations in form, reflecting the different character areas evident at the KOP.
Line	Rectilinear lines predominate, including those of the residential properties to the east of the KOP, and the industrial structures of the Astoria power station.
Pattern	Complex assemblages of elements.
Color	Highly varied, from the muted greens and grays at the KOP, to red, browns, greys and whites within nearby industrial areas and residential areas.
Texture	Varied, ranging from smoothness of mown grasslands of the park and the open waters of East River, to the coarse textures of adjoining tree cover and industrial buildings and residential properties.
Movement	Variable degrees of movement present at this KOP in the form of recreational receptors, vessels on the East River and vehicles on roads in proximity to the KOP.
Perceptual Characteristics	Complex, urban, busy, and transient.

TABLE 5: QUEENS ONSHORE VIA RATING FORM KOP-NY05 RALPH DEMARCO PARK		
B. Contrast, Magnitude of Impact, and Sensitivity [KOP-NY05]		
Aesthetic and Perceptual Characteristics[1]	**Rating**	**Degree of Contrast**
Form	Scenario 1 – 0 No Impact Scenario 2 – 0 No Impact	None
Line	Scenario 1 – 0 No Impact Scenario 2 – 0 No Impact	None
Pattern	Scenario 1 – 0 No Impact Scenario 2 – 0 No Impact	None
Color	Scenario 1 – 0 No Impact Scenario 2 – 0 No Impact	None
Texture	Scenario 1 – 0 No Impact Scenario 2 – 0 No Impact	None
Movement	Scenario 1 – 0 No Impact Scenario 2 – 0 No Impact	None

[1] Aesthetic and Perceptual Characteristics ratings are adapted from the BLM Visual Resource Management system (see Table X.6-4 in Section X.6.1.6.2). The rest of the ratings (sensitivity, magnitude, and overall impact) are based on slight derivation of BOEM's SLVIA Guidance ratings matrix.

TABLE 5: QUEENS ONSHORE VIA RATING FORM KOP-NY05 RALPH DEMARCO PARK		
Receptor Sensitivity Factor	**Rating**	**Rationale**
Susceptibility	Low	Receptors at this KOP have a varied experience as some are engaged in recreation that do not prioritize views, and others use the benches set within the park along the river for viewing out towards the river. However, receptors will not be susceptible to changes in this environment due to the pre-existing industrial context.
Value	Medium	This KOP is visited often by recreational users who are engaged in activity and/or sometimes viewing. The bike path along the park is valued, but the views are not from this location. The park is in good condition but is surrounded by an existing urbanized and industrialized setting.
Overall Sensitivity Rating: Low		
Magnitude Factor	**Rating**	**Rationale**
Geographic Extent	Scenario 1 – None Scenario 2 – None	Both Scenario 1 and Scenario 2 provide no impact to geographic extent due to complete visual obstruction of the substation buildings.
Size and Scale	Scenario 1 – None Scenario 2 – None	Aesthetic characteristics including form, line, color, texture, and motion are rated individually above. In this context, Scenario 1 and Scenario 2 would have no impact on the size and scale due to complete visual obstruction of the substation buildings.
Duration and Reversibility	Fair	Although the proposed Project's lifespan is expected to be 35 years, it will be fully reversible.
Overall Magnitude Rating: Scenario 1 – None Scenario 2 – None		
Overall Impact Level	**Rating**	**Rationale**
Visual Impact Assessment:	Scenario 1 – Negligible Scenario 2 – Negligible	The substations in both Scenario 1 and Scenario 2 would be screened by intervening buildings and would therefore have no visual impacts at this KOP.

Attachment X-7

BW2 Onshore Visual Simulations - Waterford, Connecticut

Provided Under Separate Cover

Attachment X-8

BW2 Onshore VIA Rating Forms - Waterford, Connecticut

CONNECTICUT ONSHORE – BW2

TABLE 1: CT ONSHORE VIA RATING FORM KOP-CT02 LITTLE LEAGUE FIELDS SOUTH					
Section A. KOP Information					
KOP Reference Number: CT02	**Name of KOP:** Little League Fields South	**KOP Distance from Project:** 0.36 mi (0.58 km) **Elevation** 10.35 ft (3.15 m)	**Date visited:** April 19, 2021	**Time of visit:** 1:00 PM	**Weather conditions and visibility during visit:** Cloudy

Location:
This KOP is located within a recreation ball field for the Little League. There are four baseball fields and one football field. The field furthest west is elevated higher than the rest of the fields. There is a gravel roadway and undefined parking spaces. The recreation area is bounded by a chain-link fence that is locked unless the fields are in use. Bathroom facilities are present on site along with a supply shed.

Affected Environment

SLCA Context
The KOP is located in the Parks/Developed Recreation LCA as described in Table X.5-16 but is subject to considerable influence of the neighboring Forests/Woodlands and Suburban Residential LCAs, as it borders the ball fields.

Visual Impact Receptors (Viewer Groups): Recreational Users

Visual Context
The visual context of this KOP is relatively dynamic in nature due to the patterns of recreational use, frequency and number of recreational visitors, and atmospheric and seasonal conditions.

Key Characteristics of the SLCA and View at KOP Location

- Located in low-lying, essentially flat landscape which has some small-scale topographical variations and features.
- Typified by improved grasslands and areas of exposed substrate, fencing and lighting, tracks and spectator seating and small single-story buildings set against a forested background that bounds the view.
- A visual context that is subject to variable degrees of activity associated with grounds maintenance/operation of the ball field and staging of ball games when the number of receptors present increases considerably.
- The Amtrak rail line passes along the south border of the fields but is blocked by woodlands. Nearby, on the south side of the Amtrak rail line is the Millstone Residential Association.
- The visual absorption capability is high due to the containment of the landscape and views by perimeter tree cover.

Form	Horizontal planes with contrasting vertical elements including lighting posts and trees.
Line	Contrasting regular linear/rectilinear forms with more irregular natural forms of deciduous trees around the edges of the ball field.
Pattern	The simplicity of the open ball fields is compromised by the complex assemblages of infrastructure and built forms around the fields.
Color	Varied from greens to grays to browns and yellows. Seasonally variable with increased greens during spring and summer months, changing to yellows, reds and browns in autumn and with higher proportion of greys in winter.
Texture	Varied, ranging from smoothness of the mowed grasslands and manicured dirt patches in the ball fields, to coarse textures of built structures and the adjoining tree cover.

TABLE 1: CT ONSHORE VIA RATING FORM KOP-CT02 LITTLE LEAGUE FIELDS SOUTH			
Movement	Variable, depending on time of day and if the fields are in use. Varies from still to movements of people and cars.		
Perceptual Characteristics	Variable, depending upon frequency and number of recreational users present as well as seasonal and time of day, but generally relatively busy/active, exciting, and stimulating when fields are in use. At night, this KOP contains existing artificial light sources if the fields are in use at nighttime and movement associated with street lighting and neighboring roads and rail.		
B. Contrast, Magnitude of Impact, and Sensitivity [KOP-CT02]			
Visual Connection to Project: Views toward the proposed Project are restricted by intervening tree cover/woodlands bordering the ball fields. As the vegetation is deciduous there is some scope for filtered views of the Project.			
Description of Projects Appearance in the context of the Affected Environment: The proposed Project would be substantially screened from this KOP by intervening tree cover. However, during winter month filtered views of the Project may be provided through the tracery of this vegetation.			
Aesthetic and Perceptual Characteristics[1]	**Rating**	**Degree of Contrast**	
Form	1 Negligible	The Project would be consistent with the enclosed and contrasting vertical and horizontal elements of the baseline context.	
Line	1 Negligible	The Project would be consistent with the rectilinear characteristics of the baseline context.	
Pattern	1 Negligible	The Project would be consistent with simple rectilinear structures at the ball field and would not significantly add to the complexity at the KOP.	
Color	1 Negligible	The Project would be consistent with the established color range at this KOP.	
Texture	1 Negligible	The Project would be consistent with the coarse textures evident one the edges of the ball field site.	
Movement	0 No Impact	The Project would appear still and would therefore not add to the amount of movement at the ball field.	
Receptor Sensitivity Factor	**Rating**	**Rationale**	
Susceptibility	Low	Recreational users at this KOP are engaged in sports recreation where their attention is not on the surrounding landscape or particular views.	
Value	Medium	Depending on the season, this KOP is heavily visited by recreational users who are engaged in activity. The condition of the landscape is maintained and generally good and surrounded by natural woodlands, however the sports field are not valued for their viewpoints.	
Overall Sensitivity Rating: Low			

[1] Aesthetic and Perceptual Characteristics ratings are adapted from the BLM Visual Resource Management system (see Table X.6-4 in Section X.6.1.6.2). The rest of the ratings (sensitivity, magnitude, and overall impact) are based on slight derivation of BOEM's SLVIA Guidance ratings matrix.

TABLE 1: CT ONSHORE VIA RATING FORM KOP-CT02 LITTLE LEAGUE FIELDS SOUTH		
Magnitude Factor	**Rating**	**Rationale**
Geographic Extent	None	The proposed Project is to the right of the horizontal field of view behind trees. There is no one principal outlook from this KOP as viewer orientation varies depending on the position of the recreator or the spectator. The simulation for this KOP is oriented to the west. The Project would be located 0.36 mi (0.58 km) from this KOP.
Size and Scale	None	Aesthetic characteristics including form, line, color, texture, and motion are rated individually above. In this context the Project would not be discernible or present any apparent change to the view. Depending on the seasonal changes, the Project may be near the extreme limit of visibility should the thinning of the forested areas provide any views to the Project. Glimpses of the proposed Project would be experienced, if visible at all, as receptors are not focused on looking towards the Project's direction and are engaged in recreation.
Duration and Reversibility	Fair	Although the proposed Project's lifespan is expected to be 35 years, it will be fully reversible.
Overall Magnitude Rating: None		
Overall Impact Level	**Rating**	**Rationale**
Visual Impact Assessment:	Negligible	The lack of magnitude of the substation from this KOP establishes a negligible impact to the low-sensitive receptors at this KOP as they are not focused on views towards the Project and instead on recreating. The Project would not be discernible or present any apparent change to the view.

TABLE 2: CT ONSHORE VIA RATING FORM KOP-CT04 RAILROAD BEACH					
Section A. KOP Information					
KOP Reference Number: CT04	**Name of KOP:** Railroad Beach	**KOP Distance from Project:** 0.79 mi (1.26 km) **Elevation:** 7.62 ft (2.32 m)	**Date visited:** April 5, 2022	**Time of visit:** 12:30 PM	**Weather conditions and visibility during visit:** Cloudy

Location:
This KOP is located on the jetty at Railroad Beach. The beach is utilized by recreational users and tourists. People use the beach for swimming, relaxing, fishing, and more as it is open to the Niantic Bay. Railroad Beach is adjacent to the historic Niantic River Bridge where transportation-based receptors are found, and an underpass to the Niantic River where commercial and recreational boaters pass through (water-based receptors). It is also adjacent to the eastern entrance to the Niantic Boardwalk and parking lot.

Affected Environment

SLCA Context
The KOP is located in the Ocean Beach SCA as described in Table X.5-16 but is subject to considerable influence of the neighboring Ocean Bays/Coves and Light Industrial areas.

Visual Impact Receptors (Viewer Groups): Recreational Users, Tourists, Water-Based, Transportation-Based

Visual Context
Viewer groups visit Railroad Beach to relax and recreate, including swimming, sunbathing, socializing, playing beach games, and fishing. The viewer position to the ocean is from the beach in front of the Niantic Boardwalk. The curving shorelines surrounding the bay creates an enclosed water body that contrasts with the tan sandy and rocky beach and forested edge.

Key Characteristics of the SLCA and View at KOP Location

- Situated on a thin strand of beach that encircles Niantic Bay.
- The bay is enclosed on three sides by a forested settled edge and industrial complexes as well as the Niantic Bridge and Amtrak rail line.
- Long Island Sound is visible on the horizon and is framed by the adjoining headlands.
- Scenic integrity is moderate to high due to the large seascape and forest edge, but with local detractors. The existing Millstone Power Station, however, does not dominate the viewpoint. However, the Amtrak rail line and associated overhead gantries are prominent in views across the bay.
- During hours of darkness the view at the KOP is influenced by scattered light along the shorelines around Niantic Bay, the lighting associates with the Amtrak rail line, Niantic Bridge, and roadways behind the KOP, and intermittent transient lighting from vessels, navigation aids, and moonlight reflecting on the water.

Form	Slighting sloping sandy beach. Flat to rolling hills along coastline edge. Rectilinear bridge infrastructure.
Line	Strong curvilinear line forming the coastline to Niantic Bay.
Pattern	Relatively simple due to open water and forest edge, to complex due to jetty and bridge infrastructure.
Color	Tan sand and forest edge and brown jetty contrasting with the blue/gray water. Variable and dependent upon weather and light conditions
Texture	Ranging from smooth in respect of the sandy beach and bridge, to the rippling ocean, and the stippled forest edge.
Movement	Variable, depending upon frequency and number of recreational users, boaters, and tourists, tidal patterns, and the sea state of the neighboring Ocean Bay/Cove.

TABLE 2: CT ONSHORE VIA RATING FORM KOP-CT04 RAILROAD BEACH	
Perceptual Characteristics	Variable, depending upon frequency and number of recreational users of the beach, tidal patterns, sea state, as well as seasonal and time of day. Ranging from natural, restful, tranquil, and peaceful to busy/active, exciting, and stimulating. At night the view at this KOP contains a small proportion of existing artificial light sources and movement associated with bridge activity and residential properties.

B. Contrast, Magnitude of Impact, and Sensitivity [KOP-CT04]		
Visual Connection to Project: Views toward the proposed Project are screened by dense intervening vegetation.		
Description of Projects Appearance in the context of the Affected Environment: The proposed Project would be entirely obscured by intervening vegetation.		
Aesthetic and Perceptual Characteristics[1]	**Rating**	**Degree of Contrast**
Form	0 No Impact	No effect on the form of the elements at this KOP.
Line	0 No Impact	No effect on the line qualities of the elements at this KOP.
Pattern	0 No Impact	No effect on the pattern of characteristic elements at this KOP.
Color	0 No Impact	No effect on the color prevalent at this KOP.
Texture	0 No Impact	No effect on the textures of elements at this KOP.
Movement	0 No Impact	No effect on the extent of movement or activity at this KOP.
Receptor Sensitivity Factor	**Rating**	**Rationale**
Susceptibility	Medium	Receptors at this KOP have a varied experience as some are engaged in activities that do not prioritize views, as others use the beach where their attention is on the surrounding landscape or particular views.
Value	High	This KOP is heavily visited by recreational users who are engaged in activity and/or viewing. The condition of the landscape is in good condition and surrounded by natural woodlands, beaches, manmade jetties, concrete boardwalk, and industrial infrastructure. The eastern entrance to the Niantic Boardwalk and parking lot connect to the beach, providing public access points.
Overall Sensitivity Rating: High		
Magnitude Factor	**Rating**	**Rationale**
Geographic Extent	None	The proposed Project is to the left of the horizontal field of view behind trees. The principal outlook from this KOP is south out toward Long Island Sound. The simulation for this KOP is oriented southeast. The Project would be located 0.79 mi (1.26 km) from this KOP.
Size and Scale	None	Aesthetic characteristics including form, line, color, texture, and motion are rated individually above. In this context the Project would not be discernible or present any apparent change to the view. View duration of the Project is not relevant due to no visibility.
Duration and Reversibility	Fair	Although the proposed Project's lifespan is expected to be 35 years, it will be fully reversible.

[1] Aesthetic and Perceptual Characteristics ratings are adapted from the BLM Visual Resource Management system (see Table X.6-4 in Section X.6.1.6.2). The rest of the ratings (sensitivity, magnitude, and overall impact) are based on slight derivation of BOEM's SLVIA Guidance ratings matrix.

TABLE 2: CT ONSHORE VIA RATING FORM KOP-CT04 RAILROAD BEACH		
Overall Magnitude Rating: None		
Overall Impact Level	**Rating**	**Rationale**
Visual Impact Assessment:	Negligible	Although the receptors at this KOP are highly sensitive, the Project would be entirely screened, therefore, have no impact to the receptor.

TABLE 3: CT ONSHORE VIA RATING FORM KOP-CT07 DOCK ROAD STATE BOAT LAUNCH					
Section A. KOP Information					
KOP Reference Number: CT07	**Name of KOP:** Dock Road State Boat Launch	**KOP Distance from Project:** 0.93 mi (1.50 km) **Elevation:** 2.84 ft (0.87 m)	**Date visited:** April 20, 2021	**Time of visit:** 10:05 AM	**Weather conditions and visibility during visit:** Mostly sunny

Location:
This KOP is located within a developed park and paved parking lot at the end of Dock Road in Waterford, Connecticut. Views are out to Jordan Cove, and it is adjacent to Pleasure Beach. The boat launch is listed on the Connecticut Coastal Access Guide for public waterfront access areas. Behind the boat ramp is a medium-sized paved parking lot, next to a separate private parking lot for the members of Pleasure Beach. A fairly dense residential neighborhood lies behind the parking lot, and the shoreline is bounded by riprap. The Millstone Power Station is clearly visible across Jordan Cove.

Affected Environment

SLCA Context
The KOP is located in the Parks/Developed Recreation LCA as described in Table X.5-16 but is subject to considerable influence of the Ocean Bays/Coves, Salt Pond/Tidal Marsh, and Suburban Residential SLCAs.

Visual Impact Receptors (Viewer Groups): Recreational Users

Visual Context
The visual context of this KOP is dynamic and changeable in nature, reflected in tidal patterns, light, and atmospheric conditions, as well as patterns of recreational use and frequency and number of recreational users. The scale of the view from this KOP and views across Jordan Cove towards the Millstone Power Station dominates and forms a crucial aspect of the scenic quality at this KOP.

Key Characteristics of the SLCA and View at KOP Location

- Situated in a paved parking area, with sandy beaches, the ocean, waterfront residential homes, and woodlands adjacent to KOP location.
- Scenic integrity is moderate to high. Moderate due to the prominent influence of the Millstone Power Station, but high in respect of the high amenity quality of the residential neighborhood within the forested edge and the open views to Long Island Sound.
- Neighboring residential structures, industrial buildings, transmission structures, sandy beach, and forest edge form prominent features on the skyline of views from this KOP.
- During hours of darkness the character of the seascape/landscape at the KOP is partially subject to the influence of scattered lighting within the neighborhoods and industrial areas.

Form	Underlying form is flat/horizontal but is interrupted by rectilinear industrial and residential buildings and irregular natural form of trees/woodlands.
Line	Curvilinear line at the shoreline along Jordan Cove. Geometrical and straight lines associated with buildings nearby.
Pattern	Some simplicity in respect of underlying form and openness of the adjoining Jordan Cove, but subject to localized influence of assemblages of built forms in industrial and residential structures and riprap.
Color	Varied, from blues and greys of the ocean to tan, greys, reds, browns, and greens along the shoreline. Dependent upon weather and light conditions. Seasonally variable with increased greens during spring and summer months, changing to yellows and red and browns in autumn and with higher proportion of greys in winter.
Texture	Varied, from coarse textures of trees, riprap, and complex residential structures to the smooth or choppy ocean and smooth industrial buildings.

TABLE 3: CT ONSHORE VIA RATING FORM KOP-CT07 DOCK ROAD STATE BOAT LAUNCH		
Movement	There is some movement of the ocean at this KOP. Occasional recreators and vehicles moving are present on land and occasional boaters in Jordan Cove.	
Perceptual Characteristics	Variable, depending on frequency and number of recreational users present as well as seasonal and time of day, but generally moderately busy.	
B. Contrast, Magnitude of Impact, and Sensitivity [KOP-CT07]		
Visual Connection to Project: Views towards the Project are entirely screened by intervening topography and woodland cover.		
Description of Projects Appearance in the context of the Affected Environment: The project would be entirely screened by intervening topography and vegetation.		
Aesthetic and Perceptual Characteristics[1]	**Rating**	**Degree of Contrast**
Form	0 No Impact	No effect on the form of the elements at this KOP.
Line	0 No Impact	No effect on the line qualities of the elements at this KOP.
Pattern	0 No Impact	No effect on the pattern of characteristic elements at this KOP.
Color	0 No Impact	No effect on the color prevalent at this KOP.
Texture	0 No Impact	No effect on the textures of elements at this KOP.
Movement	0 No Impact	No effect on the extent of movement or activity at this KOP.
Receptor Sensitivity Factor	**Rating**	**Rationale**
Susceptibility	Medium	Receptors at this KOP have a varied experience as some are engaged in activities that do not prioritize views, and others may put more attention on the surrounding landscape or particular views.
Value	High	The KOP is highly valued as being on the Connecticut Coastal Access Guide for public waterfront access areas. The landscape is in good condition and surrounded by natural woodlands, beaches, riprap, residential community, and industrial infrastructure.
Overall Sensitivity Rating: High		
Magnitude Factor	**Rating**	**Rationale**
Geographic Extent	None	The proposed Project is in the center of the horizontal field of view behind trees. The principal outlook from this KOP is northwest/west out toward Jordan Cove. The simulation for this KOP is oriented northwest. The Project would be located 0.93 mi (1.50 km) from this KOP.
Size and Scale	None	Aesthetic characteristics including form, line, color, texture, and motion are rated individually above. In this context the Project would not be discernible or present any apparent change to the view. View duration of the Project is not relevant due to no visibility.
Duration and Reversibility	Fair	Although the proposed Project's lifespan is expected to be 35 years, it will be fully reversible.
Overall Magnitude Rating: None		

[1] Aesthetic and Perceptual Characteristics ratings are adapted from the BLM Visual Resource Management system (see Table X.6-4 in Section X.6.1.6.2). The rest of the ratings (sensitivity, magnitude, and overall impact) are based on slight derivation of BOEM's SLVIA Guidance ratings matrix.

TABLE 3: CT ONSHORE VIA RATING FORM KOP-CT07 DOCK ROAD STATE BOAT LAUNCH		
Overall Impact Level	**Rating**	**Rationale**
Visual Impact Assessment:	Negligible	Although the receptors at this KOP are highly sensitive, the Project would be entirely screened, therefore, have no impact to the receptor.

TABLE 4: CT ONSHORE VIA RATING FORM KOP-CT09 NIANTIC BOARDWALK					
Section A.KOP Information					
KOP Reference Number: CT09	**Name of KOP:** Niantic Boardwalk	**KOP Distance from Project:** 1.40 mi (2.25 km) **Elevation:** 13.07 ft (3.94 m)	**Date visited:** April 20, 2021	**Time of visit:** 1:50 PM	**Weather conditions and visibility during visit:** Clear skies
Location: This KOP is located along the Niantic Boardwalk located on the northern edge of Niantic Bay with the Amtrak rail line just to the north. It is a popular destination for recreational users and tourists to enjoy a walk along the sea wall with ocean views and access to Niantic Beach. The boardwalk is 1.1 mi (1.8 km) long, with parking on either end from Cini Memorial Park to the Hole-in-the-Wall Beach. The KOP has expansive views across Niantic Bay out towards the Long Island Sound.					
Affected Environment					
SLCA Context The KOP is located in the Parks/Developed Recreation SLCA as described in Table X.5-16 but is subject to the considerable influence of the neighboring Ocean Bays/Coves and Village/Town SLCAs.					
Visual Impact Receptors (Viewer Groups): Recreational Users, Tourists					
Visual Context The visual context of this KOP is dynamic and changeable in nature, reflected in tidal patterns, light, and atmospheric conditions, as well as patterns of recreational use and frequency and number of recreational users. The scale of the view from this KOP and views across Niantic Bay dominates and forms a crucial aspect of the scenic quality at this KOP.					
Key Characteristics of the SLCA and View at KOP Location • Situated on an elevated causeway and boardwalk overlooking the Niantic Bay. • The waters-edge is marked by riprap protection measures that are placed against the base of the seawall on which the boardwalk is positioned, and there are sandy beaches at the ends of the boardwalk. • North of the KOP, the Northeast Corridor Amtrak rail line runs directly parallel to the boardwalk. • Forests/woodlands, beach, and the Millstone Power Station dominate the coastlines across the Niantic Bay. • Scenic integrity is moderate to high due to the large seascape and forest edge. The existing Millstone Power Station does not dominate the viewpoint, but it contributes a form of unnaturalness in the scenery. • During hours of darkness the character of the seascape/landscape at the KOP is influenced by scattered light along the shorelines around Niantic Bay and intermittent transient lighting from vessels, navigation aids, and moonlight reflecting on the water.					
Form	Underlying form is flat/horizontal but is interrupted by rectangular/rectilinear industrial and residential buildings and irregular natural form of trees/woodlands.				
Line	Curvilinear shoreline around Niantic Bay, horizontal, vertical, and angular built features.				
Pattern	Some simplicity in respect of underlying form and openness of the adjoining Niantic Bay, but subject to influence of assemblages of built forms in industrial and residential structures and riprap.				
Color	Varied, from blues and greys of the ocean to tan, greys, reds, browns, and greens along the shoreline. Variable depending upon weather and light conditions. Additionally, seasonally variable with increased greens during spring and summer months, changing to yellows and red and browns in autumn and with higher proportion of greys in winter.				

TABLE 4: CT ONSHORE VIA RATING FORM KOP-CT09 NIANTIC BOARDWALK		
Texture	Varied, from coarse textures of trees, riprap, and structures to the smooth or choppy ocean and smooth sea wall.	
Movement	There is movement of the ocean at this KOP. Recreators and boaters often creating movement along with the movement of traffic and the train behind the KOP.	
Perceptual Characteristics	Variable, depending on frequency and number of recreational users present as well as seasonal and time of day, but generally busy.	
B. Contrast, Magnitude of Impact, and Sensitivity [KOP-CT09]		
Visual Connection to Project: Views towards the Project are partially screened by intervening woodland cover and the Millstone Power Station forms a prominent focal point in the view across Niantic Bay.		
Description of Projects Appearance in the context of the Affected Environment: The proposed Project would be partially screened by intervening woodland, only a portion of the top of the substation building being evident on the skyline in the background.		
Aesthetic and Perceptual Characteristics[1]	**Rating**	**Degree of Contrast**
Form	2 Small	The Project would be consistent with the predominant form of the views evident at this KOP. The top of the substation building would coincide with the tree line that forms the horizon to the south-east across the bay and the building would reflect the rectangular form of the adjacent power station.
Line	2 Small	The Project would be consistent with the predominance of straight and geometric lines of the baseline context.
Pattern	2 Small	The Project would not adversely affect the underlying simplicity and openness of the bay but would add to the influence of built/industrial forms.
Color	2 Small	The color of the substation building would be consistent with the established palate of colors evident.
Texture	2 Small	The Project would add to the smooth textures present on the skyline in the background of views available from this KOP.
Movement	0 No Impact	Ground level activities and vehicle movements would be screened by intervening vegetation. Consequently, the Project would not add to the extent of movement evident.
Receptor Sensitivity Factor	**Rating**	**Rationale**
Susceptibility	High	Recreator and tourist attention is mostly focused on the seaward views available along this boardwalk.
Value	High	The KOP is highly valued as a public recreation walking path with expansive views across Niantic Bay out to the Long Island Sound. Multiple large parking areas provide easy access to the park. The boardwalk is very busy as weather permits.
Overall Sensitivity Rating: High		

[1] Aesthetic and Perceptual Characteristics ratings are adapted from the BLM Visual Resource Management system (see Table X.6-4 in Section X.6.1.6.2). The rest of the ratings (sensitivity, magnitude, and overall impact) are based on slight derivation of BOEM's SLVIA Guidance ratings matrix.

TABLE 4: CT ONSHORE VIA RATING FORM KOP-CT09 NIANTIC BOARDWALK		
Magnitude Factor	**Rating**	**Rationale**
Geographic Extent	Small	The proposed Project is to the left of the horizontal field of view. The principal outlook from this KOP is south out toward Niantic Bay. The simulation for this KOP is oriented southeast. The Project would be located 1.40 mi (2.25 km) from this KOP.
Size and Scale	Small	Aesthetic characteristics including form, line, color, texture, and motion are rated individually above. In this context the Project would be noticeable from the view but would appear fairly small and be consistent with the existing industrial infrastructure. Partial views of the proposed Project would be experienced due to the movement of receptors along the boardwalk and varying receptor activities at the KOP.
Duration and Reversibility	Fair	Although the proposed Project's lifespan is expected to be 35 years, it will be fully reversible.
Overall Magnitude Rating: Small		
Overall Impact Level	**Rating**	**Rationale**
Visual Impact Assessment:	Minor	The proposed Project would form a discernible new feature with a relatively small magnitude on the skyline in the background of the view from this KOP location. The substation building would extend the influence of power related structures along the side of the bay but would not compete with visual elements at the KOP location to any great extent, even considering the highly sensitive receptors.

TABLE 5: CT ONSHORE VIA RATING FORM KOP-CT10 GREAT NECK COUNTRY CLUB					
Section A.KOP Information					
KOP Reference Number: CT10	**Name of KOP:** Great Neck Country Club	**KOP Distance from Project:** 1.43 mi (2.30 km) **Elevation:** 109.01 ft (33.23 m)	**Date visited:** April 5, 2022	**Time of visit:** 2:00 PM	**Weather conditions and visibility during visit:** Cloudy
Location: This KOP is located within a public roadway, Country Club Road, looking across the greenway of the Great Neck Country Club, a private club. Residential homes and neighborhoods are located on the street behind the KOP.					
Affected Environment					
SLCA Context The KOP is located in the Parks/Developed Recreation SLCA as described in Table X.5-16 but is under considerable influence of the surrounding Forests/Woodlands and Suburban Residential LCAs.					
Visual Impact Receptors (Viewer Groups): Recreational Users, Transportation-Based					
Visual Context The visual context of this KOP is dynamic and changeable in nature, reflected in light and atmospheric conditions, as well as patterns of recreational use and frequency and number of recreational users. The topography of the view from this KOP and views across the treetops forms a crucial aspect of the scenic quality at this KOP.					
Key Characteristics of the SLCA and View at KOP Location • Manicured open green space with attendant golfing paraphernalia, with prominent specimen trees and woodlands that bound views. • KOP is allocated on a paved, public roadway with residential homes on one side and the club course on the other. • High topography looking over hill with forests/woodlands in the horizon and the existing substation barely visible overhead. • Scenic integrity is high due to the condition and rural character of the setting. • During hours of darkness the character of the seascape/landscape at the KOP is influenced by scattered light across the treetops from existing industrial development and adjacent residential homes.					
Form	Gently undulating with localized topographical features, with contrasting verticality of trees. Fairways form strong linear features and channeling views.				
Line	Mostly curving, associated with the gentle undulations of the golf course, the line of cart tracks and circular sand pits.				
Pattern	Relatively simple due to the form and openness of the fairway.				
Color	Dark and medium green of the grass and brown and tan trees contrasts with the bright cloudy sky. Conditioned by weather and light conditions. Also, seasonally variable with increased greens during spring and summer months, changing to yellows and red and browns in autumn and with higher proportion of greys in winter.				
Texture	Ranging from smooth texture of the mown grasslands to coarse texture of woodlands and tree cover.				
Movement	Variable, from active/busy to still.				
Perceptual Characteristics	Variable, depending on frequency and number of recreational users present as well as seasonal and time of day, but generally light activity and quiet.				

TABLE 5: CT ONSHORE VIA RATING FORM KOP-CT10 GREAT NECK COUNTRY CLUB		
B. Contrast, Magnitude of Impact, and Sensitivity [KOP-CT10]		
Visual Connection to Project: Views towards the Project are entirely screened by intervening vegetation.		
Description of Projects Appearance in the context of the Affected Environment: The proposed Project would be entirely screened by intervening vegetation.		
Aesthetic and Perceptual Characteristics[1]	**Rating**	**Degree of Contrast**
Form	0 No Impact	No effect on the form of the elements at this KOP.
Line	0 No Impact	No effect on the line qualities of the elements at this KOP.
Pattern	0 No Impact	No effect on the pattern of characteristic elements at this KOP.
Color	0 No Impact	No effect on the color prevalent at this KOP.
Texture	0 No Impact	No effect on the textures of elements at this KOP.
Movement	0 No Impact	No effect on the extent of movement or activity at this KOP.
Receptor Sensitivity Factor	**Rating**	**Rationale**
Susceptibility	Medium	Receptors from this KOP may be transportation-based on the roadway and not focused on the view. Recreators at the golf course are partially susceptible to the view provided by the golf course, however this is not the main event of recreation at the KOP.
Value	Medium	The KOP provides many viewers between the transportation and recreational receptors, but they are not necessarily attached to the value of the view. However, the surrounding natural wooded setting provides a natural-seeming setting.
Overall Sensitivity Rating: Medium		
Magnitude Factor	**Rating**	**Rationale**
Geographic Extent	None	The proposed Project is in the center of the horizontal field of view behind trees. The principal outlook from this KOP ranges from south to west depending on the receptor. The simulation for this KOP is oriented west looking across the open golf course. The Project would be located 1.43 mi (2.30 km) from this KOP.
Size and Scale	None	Aesthetic characteristics including form, line, color, texture, and motion are rated individually above. In this context the Project would not be discernible or present any apparent change to the view. View duration of the Project is not relevant due to no visibility.
Duration and Reversibility	Fair	Although the proposed Project's lifespan is expected to be 35 years, it will be fully reversible.
Overall Magnitude Rating: None		
Overall Impact Level	**Rating**	**Rationale**
Visual Impact Assessment:	Negligible	Although the receptors at this KOP are moderately sensitive, the Project would be entirely screened, therefore, have no impact to the receptor.

[1] Aesthetic and Perceptual Characteristics ratings are adapted from the BLM Visual Resource Management system (see Table X.6-4 in Section X.6.1.6.2). The rest of the ratings (sensitivity, magnitude, and overall impact) are based on slight derivation of BOEM's SLVIA Guidance ratings matrix.

TABLE 6: CT ONSHORE VIA RATING FORM KOP-CT12 McCOOK'S BEACH					
Section A. KOP Information					
KOP Reference Number: CT12	**Name of KOP:** McCook's Beach	**KOP Distance from Project:** 1.73 mi (2.78 km) **Elevation:** 6.97 ft (2.12 m)	**Date visited:** April 20, 2021	**Time of visit:** 1:00 PM	**Weather conditions and visibility during visit:** Mostly clear skies

Location:
This KOP is located in front of a picnic bench within the edge of the parking lot on top of the seawall at McCook's Beach. This is a very popular beach for residents is and is used for swimming, relaxing, fishing, and more as it is open to the Niantic Bay and connects to McCook's Beach and the Niantic Boardwalk by walking paths. Residential homes are set behind the beach.

Affected Environment

SLCA Context
The KOP is located in the Ocean Beach SCA as described in Table X.5-16 but is subject to considerable influence of the neighboring Ocean Bays/Coves, Suburban Residential, and Parks/Developed Recreation SCLAs.

Visual Impact Receptors (Viewer Groups): Recreational Users, Tourists

Visual Context
Viewer groups visit McCook's Beach to relax and recreate, including swimming, sunbathing, socializing, playing beach games, and fishing. The viewer position to the ocean is from the picnic beach elevated from the beach. The curving shorelines surrounding the bay creates an enclosed water body that contrasts with the tan sandy and rocky beach and forested edge.

Key Characteristics of the SLCA and View at KOP Location

- Situated in an expanse of beach looking out towards the open Niantic Bay and enclosed forested edge.
- Long Island Sound is visible across the horizon.
- Access to McCook's Point, a Parks/Developed Recreation area, directly adjacent to the beach.
- Residential homes sit behind and adjacent to the beach.
- Scenic integrity is moderate to high. Moderate due to the industrial views across the bay and residential structures, and high due to views of the large seascape, forest edge, and beach. The existing Millstone Power Station is clearly visible from the beach.
- During hours of darkness the view at the KOP is influenced by scattered light along the shorelines around Niantic Bay and intermittent transient lighting from vessels, navigation aids, and moonlight reflecting on the water.

Form	Gently sloping beach. Flat to rolling hills along coastline edge. Rectilinear industrial and residential infrastructure. Largely flat open surface of sea.
Line	Strong curvilinear line forming the coastline to Niantic Bay. Straighter geometric lines associated with built structures around the bay.
Pattern	Relatively simple due to open water and forest edge, to complex due to industrial and residential infrastructure.
Color	Tan sand and forest edge contrasting with the blue/gray water; multicolored homes. Colors dependent upon weather and light conditions. Some seasonal variation associated with deciduous woodland cover.
Texture	Ranging from smooth in respect of the sandy beach, to the rippling ocean, and the stippled forest edge.
Movement	Variable, depending upon frequency and number of recreational users, boaters, and tourists, tidal patterns, and the sea state of the neighboring Ocean Bay/Cove.

TABLE 6: CT ONSHORE VIA RATING FORM KOP-CT12 McCOOK'S BEACH		
Perceptual Characteristics	Variable, depending upon frequency and number of recreational users of the beach, tidal patterns, sea state, as well as seasonal and time of day. Ranging from restful and peaceful to busy/active, exciting, and stimulating. At night the view at this KOP contains a small proportion of existing artificial light sources and movement associated with residential properties.	
B. Contrast, Magnitude of Impact, and Sensitivity [KOP-CT12]		
Visual Connection to Project: Views towards the Project are partially screened by existing vegetation.		
Description of Projects Appearance in the context of the Affected Environment: The proposed Project would be seen distantly in the background of the view and would be consistent in scale and form to the adjacent power station. The substation building would represent a modest addition to seascape, would be rendered with a color consistent with that of the power station and would be back clothed by woodland, thereby reducing its prominence.		
Aesthetic and Perceptual Characteristics[1]	**Rating**	**Degree of Contrast**
Form	2 Small	The Project would be consistent with the predominant forms of the elements evident at this KOP. The top of the substation building would coincide with the tree line that forms the horizon to the southeast across the bay and the building would reflect the rectangular form of the adjacent power station.
Line	2 Small	The Project would be consistent with the predominance of straight and geometric lines of the baseline context.
Pattern	2 Small	The Project would not adversely affect the underlying simplicity and openness of the bay but would add to the influence of built/industrial forms
Color	2 Small	The color of the substation building would be a color consistent with the established palate of colors evident at this KOP.
Texture	2 Small	The Project would add to the coarse textures present on the skyline in the background of views available from this KOP and as such would not be anomalous.
Movement	0 No Impact	Ground level activities and vehicle movements would be screened by intervening vegetation. Consequently, the Project would not add to the extent of movement evident at this KOP.
Receptor Sensitivity Factor	**Rating**	**Rationale**
Susceptibility	High	Recreator and tourist attention is mostly focused on the mostly natural seaward views across Niantic Bay towards Long Island Sound unless a particular activity takes attention away from viewing.
Value	High	The KOP is highly valued as a public recreation area for beach goers with a large parking area directly adjacent to the beach, restroom facilities, and connecting walking paths to adjacent parks with expansive views. The beach is very busy, especially during summer months.
Overall Sensitivity Rating: High		

[1] Aesthetic and Perceptual Characteristics ratings are adapted from the BLM Visual Resource Management system (see Table X.6-4 in Section X.6.1.6.2). The rest of the ratings (sensitivity, magnitude, and overall impact) are based on slight derivation of BOEM's SLVIA Guidance ratings matrix.

TABLE 6: CT ONSHORE VIA RATING FORM KOP-CT12 McCOOK'S BEACH		
Magnitude Factor	**Rating**	**Rationale**
Geographic Extent	Small	The proposed Project is to the left of the horizontal field of view. The principal outlook from this KOP is southeast out across Niantic Bay. The simulation for this KOP is oriented east. The Project would be located 1.73 mi (2.78 km) from this KOP.
Size and Scale	Small	Aesthetic characteristics including form, line, color, texture, and motion are rated individually above. In this context the Project would be noticeable from the view but consistent with the existing industrial infrastructure. Partial views of the proposed Project would be experienced due to the varying receptor activities and viewing direction at the beach.
Duration and Reversibility	Fair	Although the proposed Project's lifespan is expected to be 35 years, it will be fully reversible.
Overall Magnitude Rating: Small		
Overall Impact Level	**Rating**	**Rationale**
Visual Impact Assessment:	Minor	The proposed Project would form a discernible new feature with a relatively small magnitude on the skyline in the background of the view and would be seen relatively distantly, representing a minor localized change to the view at this KOP. The substation building would extend the influence of power related structures along the side of the bay but would not compete with visual elements at the KOP location to any great extent, even considering the highly sensitive receptors.

TABLE 7: CT ONSHORE VIA RATING FORM KOP-CT14 ATTAWAN BEACH					
Section A. KOP Information					
KOP Reference Number: CT14	**Name of KOP:** Attawan Beach	**KOP Distance from Project:** 2.16 mi (3.47 km) **Elevation:** 9.5 ft (2.9 m)	**Date visited:** April 5, 2022	**Time of visit:** 10:12 AM	**Weather conditions and visibility during visit:** Mostly cloudy
Location: This KOP is located off the public Attawan Avenue roadway looking across Attawan Beach and the Niantic Bay. This is a very popular beach for residents and is used for swimming, relaxing, fishing, and more as it is open to the Niantic Bay and connects to McCook's Beach and the Niantic Boardwalk by walking paths. Residential homes are set directly behind the beach.					
Affected Environment					
SLCA Context The KOP is located in the Ocean Beach SLCA as described in Table X.5-16 but is subject to considerable influence of the neighboring Ocean Bays/Cove and Suburban Residential SLCAs.					
Visual Impact Receptors (Viewer Groups): Residents and Recreational Users					
Visual Context Viewer groups visit Attawan Beach to relax and recreate, including swimming, sunbathing, socializing, playing beach games, and fishing. The viewer position to the ocean is from public road. The curving shorelines surrounding the bay creates an enclosed water body that contrasts with the tan sandy and rocky beach and forested edge.					
Key Characteristics of the SLCA and View at KOP Location • Situated in an expanse of beach looking out towards the open Niantic Bay and enclosed forested edge. • Long Island Sound is visible across the horizon. • Residential homes along the waterfront, directly behind the beach. • Multiple jetties and piers are scattered along the coastline. • Scenic integrity is moderate to high. Moderate due to the industrial views across the bay and residential structures, and high due to views of the large seascape, forest edge, and beach. The existing Millstone Power Station is clearly visible from the beach. • During hours of darkness the view at the KOP is influenced by scattered light along the shorelines around Niantic Bay and intermittent transient lighting from vessels, navigation aids, and moonlight reflecting on the water.					
Form	Slighting sloping sandy beach. Flat to rolling hills along coastline edge. Rectilinear industrial and residential infrastructure.				
Line	Strong curvilinear line forming the coastline to Niantic Bay.				
Pattern	Relatively simple due to open water and forest edge, to complex due to industrial and residential infrastructure.				
Color	Tan sand and forest edge contrasting with the blue/gray water; multicolored homes. Seasonal color variations associated with deciduous woodland cover.				
Texture	Ranging from smooth in respect of the sandy beach, to the rippling ocean, and the stippled forest edge.				
Movement	Variable, depending upon frequency and number of recreational users, boaters, and tourists, tidal patterns, and the sea state of the neighboring Ocean Bay/Cove.				

TABLE 7: CT ONSHORE VIA RATING FORM KOP-CT14 ATTAWAN BEACH		
Perceptual Characteristics	Variable, depending upon frequency and number of recreational users of the beach, tidal patterns, sea state, as well as seasonal and time of day. Ranging from restful, tranquil, and peaceful to busy/active, exciting, and stimulating. At night the view at this KOP contains a small proportion of existing artificial light sources and movement associated with residential properties.	
B. Contrast, Magnitude of Impact, and Sensitivity [KOP-CT14]		
Visual Connection to Project: Views towards the Project are partially screened by intervening vegetation.		
Description of Projects Appearance in the context of the Affected Environment: The proposed Project would be seen in the background of the view and would overtop intervening woodland. The light color of the substation building would contrast with the backdrop of darker woodland, therefore increasing its prominence.		
Aesthetic and Perceptual Characteristics[1]	**Rating**	**Degree of Contrast**
Form	2 Small	The Project would be consistent with the predominant forms of the elements evident at this KOP. The top of the substation building would coincide with the tree line that forms the horizon to the southeast across the bay and the building would reflect the rectangular form of the adjacent power station.
Line	2 Small	The Project would be consistent with the predominance of straight and geometric lines of the baseline context.
Pattern	2 Small	The Project would not adversely affect the underlying simplicity and openness of the bay but would add to the influence of built/industrial forms
Color	2 Small	The color of the substation building would be a color consistent with the established palate of colors evident at this KOP.
Texture	2 Small	The Project would add to the coarse textures present on the skyline in the background of views available from this KOP and as such would not be anomalous.
Movement	0 No Impact	Ground level activities and vehicle movements would be screened by intervening vegetation. Consequently, the Project would not add to the extent of movement evident at this KOP.
Receptor Sensitivity Factor	**Rating**	**Rationale**
Susceptibility	High	Recreator and resident attention is mostly focused on the mostly natural seaward views across Niantic Bay unless a particular activity takes attention away from viewing.
Value	High	The KOP is highly valued as a private recreation area for those that reside in the Attawan Community. Although access to the beach is limited from the public viewer, any recreational receptor may use the public roadway adjacent to this KOP, experiencing the same views.
Overall Sensitivity Rating: High		
Magnitude Factor	**Rating**	**Rationale**
Geographic Extent	Small	The proposed Project is in the center of the horizontal field of view. The principal outlook from this KOP is east out across Niantic Bay, which is the orientation of the KOP and simulation. The Project would be located 2.25 mi (3.62 km) from this KOP.

[1] Aesthetic and Perceptual Characteristics ratings are adapted from the BLM Visual Resource Management system (see Table X.6-4 in Section X.6.1.6.2). The rest of the ratings (sensitivity, magnitude, and overall impact) are based on slight derivation of BOEM's SLVIA Guidance ratings matrix.

TABLE 7: CT ONSHORE VIA RATING FORM KOP-CT14 ATTAWAN BEACH		
Size and Scale	Small	Aesthetic characteristics including form, line, color, texture, and motion are rated individually above. In this context the Project would be noticeable from the view but consistent with the existing industrial infrastructure. Full views of the proposed Project would be experienced when facing the direction of the Project.
Duration and Reversibility	Fair	Although the proposed Project's lifespan is expected to be 35 years, it will be fully reversible.
Overall Magnitude Rating: Small		
Overall Impact Level	**Rating**	**Rationale**
Visual Impact Assessment:	Minor	The proposed Project would form a discernible new feature with a relatively small magnitude on the skyline in the background of the view and would be seen relatively distantly, representing a minor localized change to the view at this KOP. The substation building would extend the influence of power related structures along the side of the bay but would not compete with visual elements at the KOP location to any great extent, even considering the highly sensitive receptors.

Photo credit: Matt Goldsmith, Equinor