Appendix H: Cumulative Seascape, Landscape, and Visual Impact Assessment (SLVIA)

Appendix H Seascape, Landscape, and Visual Impact Assessment

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Abbreviations and Acronyms

ADLS	aircraft detection lighting system
BOEM	Bureau of Ocean Energy Management
CFR	Code of Federal Regulations
COP	Construction and Operations Plan
CZM	Coastal Zone Management
CZMA	Coastal Zone Management Act
EPAct	Energy Policy Act of 2005
FAA	Federal Aviation Administration
FOV	field of view
IPF	impact producing factor
KOP	key observation point
Lease Area	BOEM Renewable Energy Lease Area
LCA	landscape character area
LSZ	landscape similarity zone
Met Tower	meteorological tower
MLLW	mean lower low water
NLCD	national land cover database
NOAA	National Oceanic and Atmospheric Administration
OCS	outer continental shelf
OCSLA	Outer Continental Shelf Lands Act
OSS	offshore substation
Project	Maryland Offshore Wind Project
SBMT	South Brooklyn Marine Terminal
SCA	seascape character area
SLIA	seascape/landscape impact assessment
SLVIA	seascape/landscape and visual impact assessment
US Wind	US Wind, LLC
U.S.C.	United States Code
VIA	visual impact assessment
WTG	wind turbine generator
ZTV	zone of theoretical visibility

H.1 Introduction

US Wind, LLC (US Wind) proposes to construct, operate, and eventually decommission the Maryland Offshore Wind Project (Project), which would consist of wind energy facilities generating up to 2,000 megawatts within the Bureau of Ocean Energy Management (BOEM) Renewable Energy Lease Area (Lease Area) OCS-A 0490. Figure H-1 shows the location of the Project, as well as other approved or planned offshore wind projects within the Delmarva Peninsula, including Maryland.

This appendix describes the seascape, landscape, and visual impact assessment (SLVIA) methodology and key findings that BOEM used to identify the potential impacts of offshore wind structures (wind turbine generators [WTGs] and offshore substations [OSS]) from the Project alone and in combination with other visible activities on scenic and other visual resources within the geographic analysis area for scenic and visual resources (geographic analysis area). This SLVIA methodology applies to any offshore wind energy development proposed for the outer continental shelf and incorporates by reference BOEM's SLVIA methodology (Sullivan 2021). The remainder of this section provides a description of the Project and the regulatory setting. Section H.2, *Method of Analysis*, describes the specific methodology used to apply the SLVIA methodology to the Project. Section H.3 describes existing seascape, landscape, and visual characteristics in the geographic analysis area. Section H.4, *Results,* summarizes the relevant characteristics of Alternative B (the Proposed Action)—and each action alternative that includes modifications to WTG layouts (i.e., Alternatives D and E)—that contribute to the determination of cumulative seascape and landscape impacts, as well as visual impacts. This section also describes the incremental contribution of the Proposed Action and action alternatives to cumulative seascape, landscape, and visual impacts. Attachment H-1 provides maps showing the extent of potential views of Project WTGs; Attachment H-2 includes visual simulations of the Proposed Action (and alternatives) alone. Attachment H-3 shows simulations of the Proposed Action and other offshore wind projects together. Attachment H-4 includes maps showing the horizontal field of view (FOV) of the Proposed Action WTGs from selected viewpoints.

H.1.1 Description of the Project

The Project would be 10.1 miles (16.2 kilometer) off the coast of Maryland in the Delmarva Peninsula, with up to 121 WTGs - ranging from 14 to 18 MW each, up to four offshore substations (OSSs), inter-array cables in strings of four to six linking the WTGs to the OSSs, and substation interconnector cables linking the OSSs to each other. . The portion of the lease areas developed by US Wind, referred to as the Maryland Offshore Wind Project would occupy 80,000 acres. The distances between the nearest points on land on the Delmarva Peninsula and the closest and farthest Project WTGs would be as follows:

- Location, closest WTG: 10.7 miles (17.2 kilometers);
- Location, farthest WTG: 26.4 miles (42.5 kilometers);

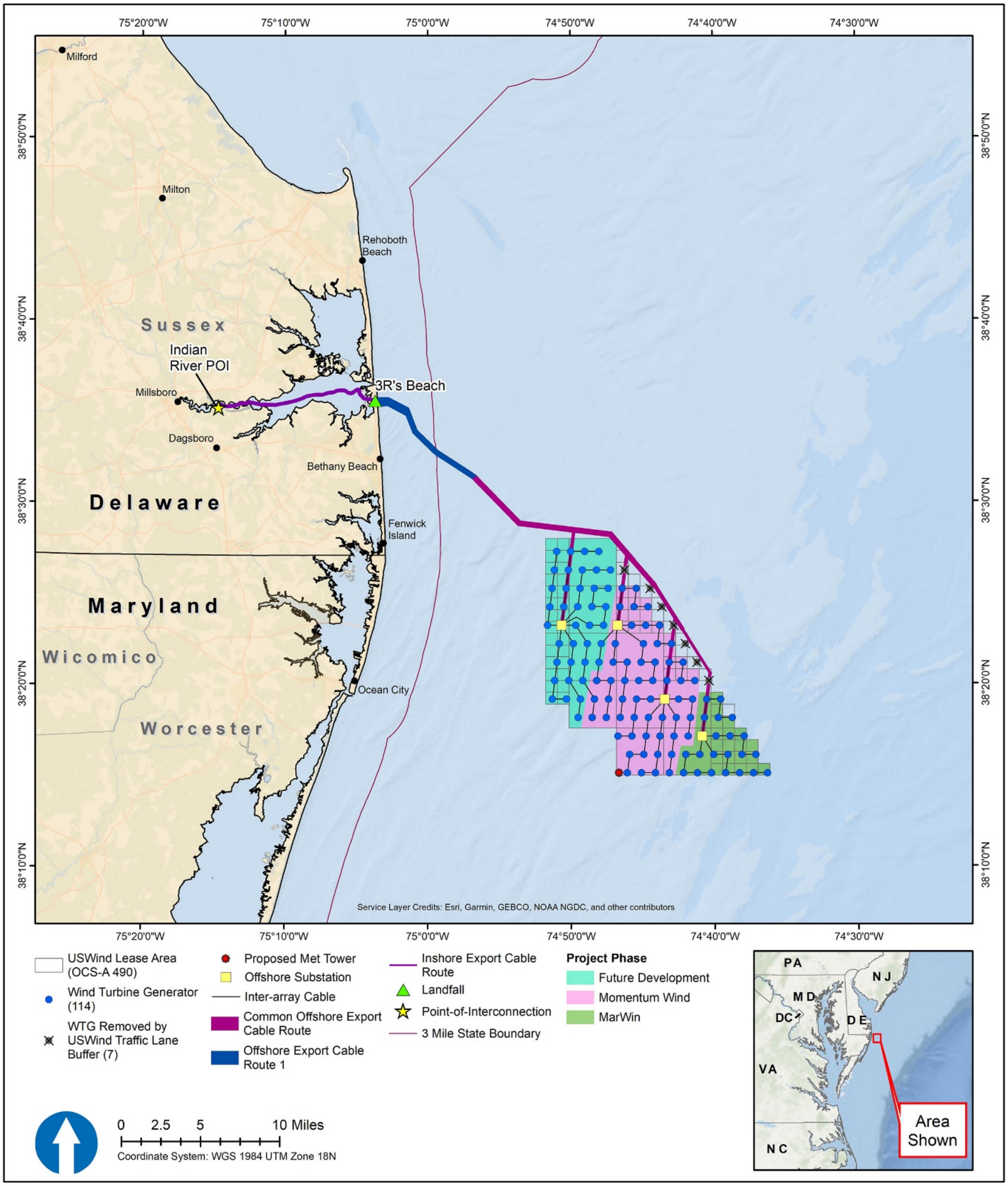


Figure H-1. Location of Maryland Offshore Wind Project in the Delmarva Peninsula Lease Area

Figure H-2 shows the maximum dimensions of the WTGs that could be constructed in both phases of the Project. The US Wind has not selected a specific WTG design for the Project; however, each WTG would have red flashing L-864 obstruction lights on the top of the nacelle, as well as red flashing L-810 obstruction lighting on the WTG towers halfway between the water level and the top of the nacelle (COP Appendix II-J1, Section 4.1.3; US Wind 2023; see Section 2.1.1.2, Offshore Activities and Facilities). Obstruction lighting would be controlled by an aircraft detection lighting system (ADLS), which would only activate Federal Aviation Administration (FAA) hazard lighting when aircraft enter a predefined airspace. Use of ADLS would reduce the duration of obstruction lighting system activation to approximately 0.1 percent of all annual nighttime hours (Capitol Airspace Group 2023). To capture the maximum seascape, landscape, and visual impacts of the Project, this appendix evaluates the maximum-case scenario for WTG dimensions—546 feet (166.4 meters) above mean lower low water (MLLW) to the top of the WTG nacelle (the housing located at the top of the WTG column, where the hub and blades are attached), and a maximum vertical blade tip extension of 938 feet (285.9 meters) above MLLW.

H.1.2 Regulatory Setting

Several federal, state, and local agencies have regulatory authority over the Project, based on the location of the different Project components. The WTGs, Inter-Array Cables, and Offshore Substations will be located entirely within federal waters of the United States and within the outer continental shelf (OCS) and are under the jurisdiction of BOEM. The Offshore Export Cables will be located in both federal waters and the state waters of Delaware.

H.1.2.1 BOEM's National Environmental Policy Act Review

In 2009, the U.S. Department of the Interior announced the final regulations for the OCS Renewable Energy Program, which was authorized by the Energy Policy Act of 2005 (EPAct). These regulations provide a framework for issuing leases, easements, and rights-of-way for OCS activities that support production and transmission of energy from sources other than oil and natural gas. BOEM is responsible for overseeing offshore renewable energy development in Federal waters. The authority derives from amendments to subsection 8 of the Outer Continental Shelf Lands Act (OCSLA) (43 United States Code [U.S.C.] 1337), as set forth in section 388(a) of the EPAct. The Secretary of the Interior delegated to BOEM the authority to regulate activities under section 388(a) of the EPAct.

Title 30 of the Code of Federal Regulations (CFR) Part 585, Subpart F, Plan Requirements, provides guidance on survey requirements, project-specific information, and information to meet the requirements of OCSLA, National Environmental Policy Act (NEPA), and other applicable laws and regulations. It specifies the various plans that must be submitted and related activities that must be undertaken to obtain approval from BOEM to develop and operate an offshore wind facility on a lease or grant on the OCS. It also specifies that in order to comply with NEPA and other relevant laws, the construction and operation plan (COP) for a proposed development must include a detailed description of those resources, conditions, and related activities that could be affected by the proposed project and related activities, including visual resources and various social and economic resources that would be addressed in an SLVIA.

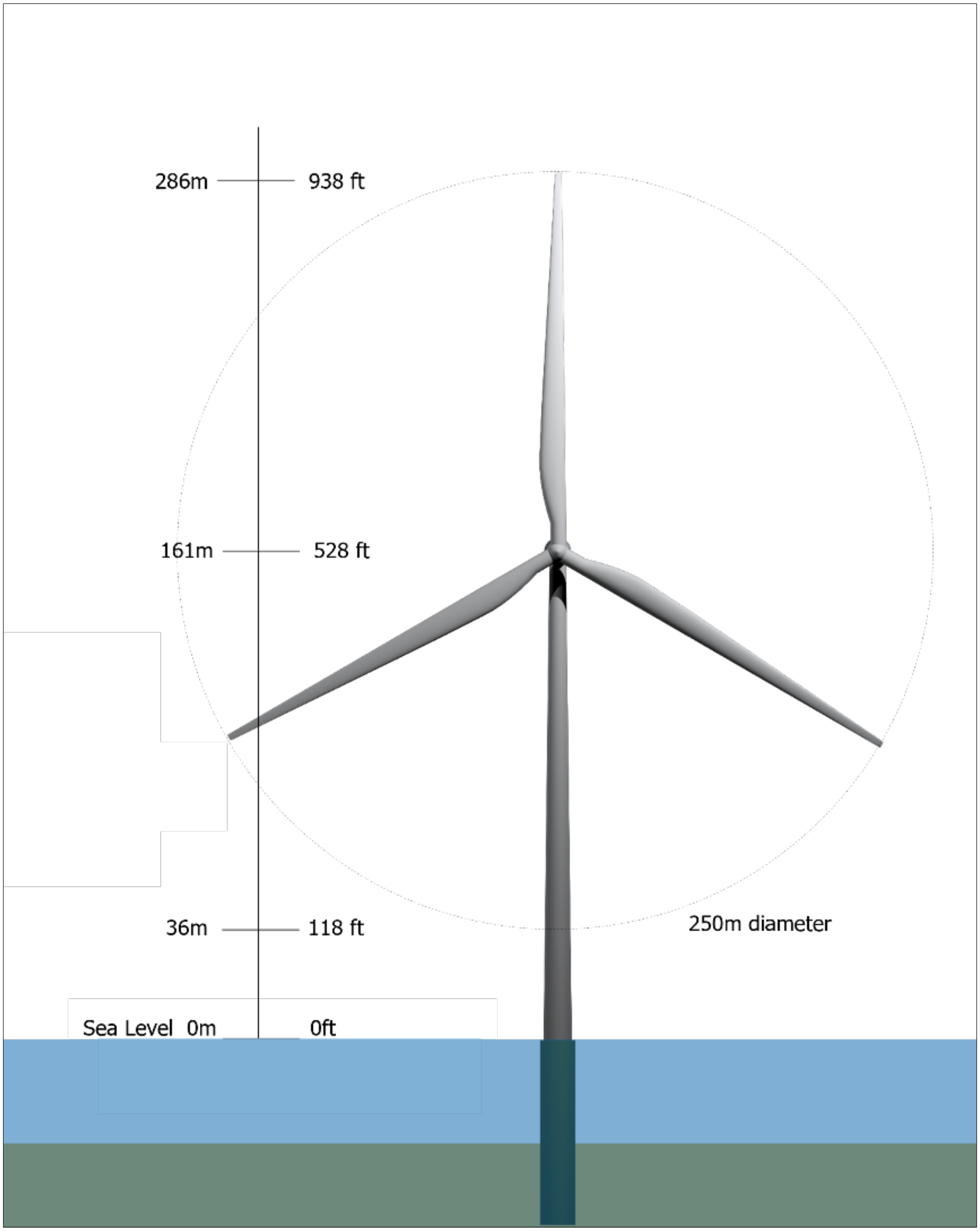


Figure H-2. Project maximum wind turbine generator size

H.1.2.2 BOEM SLVIA Guidance

As stated above, BOEM's SLVIA methodology (Sullivan 2021) describes the recommended contents and methodologies to be included in the SLVIA. The same guidance also applies to this cumulative SLVIA document, which evaluates the seascape/landscape and visual impacts of the Project alone, and in combination with other projects.

H.1.2.3 Coastal Zone Management Program

The National Coastal Zone Management (CZM) Program was established as part of the Coastal Zone Management Act, which was enacted in 1972 to address issues associated with continued growth in coastal zones (NOAA 2023). The National CZM Program and federally approved individual state programs comprehensively addresses the nation's coastal issues through a voluntary partnership between the federal government and coastal and Great Lake states and territories and provides the basis for "protecting, restoring, and responsibly developing our nation's diverse coastal communities and resources" (NOAA 2023). Permitting systems are established to control activities that affect coastal resources. Jurisdictions that oversee these permitting systems vary state-by-state but generally fall within one of two categories: state-only jurisdiction or shared state and local jurisdiction (Rath et al. 2018).

The Maryland CZM Program is administered by the Maryland Department of Natural Resources on behalf of multiple federal and state agencies charged with implementing individual program requirements (Maryland DNR 2023).The Maryland CZM manages the Federal Consistency Review process under the Coastal Zone Management Act (CZMA) and Maryland Coastal Consistency Review to ensure that federal-related projects or activities with foreseeable effects on Maryland coastal resources and coastal uses are consistent with Maryland CZM's enforceable policies.

The Delaware CZM Program, approved in 1979, is a cooperative program between the State of Delaware and the National Oceanic and Atmospheric Administration (NOAA). The program uses the Federal Consistency Review process to ensure that improvements to the coastal zone follow NOAA's Coastal Zone Enhancement Program. The Delaware Coastal Programs cover wetlands, coastal hazards, public access, marine debris, cumulative & secondary input, special area management plan, ocean resource, energy & government siting, and aquaculture. The coastal zone includes 3 counties (Delaware DNREC 2021; 2023).

The New Jersey Coastal Management Program, approved in 1980, is a cooperative program between the State of New Jersey and NOAA. The coastal management program covers eight coastal goals including healthy coastal ecosystems; effective management of ocean and estuarine resources; meaningful public access to and use of tidal waterways and their shores; sustained and revitalized water-dependent uses; coastal open space; safe, healthy, and well-planned coastal communities; coordinated coastal decision-making, comprehensive planning, and research; and coordinated public education and outreach (New Jersey DEP, 2020). The coastal zone includes 17 counties, and all or portions of 239 municipalities (New Jersey DEP 2020).

The Virginia Coastal Management Program was approved by NOAA in 1986, and the Virginia Department of Environmental Quality serves as the lead agency. Authorized by a commonwealth executive order, the coastal management program is structured as a network of agencies that have authority for implementing nine core policies and a set of advisory policies covering wetlands, fisheries, water quality, dunes and beaches, subaqueous lands, and other coastal resources in the Virginia coastal zone. The coastal zone includes the state's 29 coastal counties, 17 cities, and 42 incorporated towns (Virginia DEQ, 2023).

H.1.2.4 Scenic Byways

National Scenic Byways are roadway corridor segments that is considered distinctive and regionally significant for at least one of the six "intrinsic qualities" related to archeological, cultural, historic, natural, recreational, and/or scenic characteristics. These criteria are also used in state Scenic Byway Designations within the Project Area. All-American Roads are roadway corridors that are nationally for at least two of the six intrinsic qualities above that are nationally significant, have one-of-a-kind features that do not exist elsewhere, and that are a destination or travel goal unto themselves (FHWA 2023).

There are no federal Scenic Byways or All-American Roads within the Project Area.

Maryland has 19 scenic byways, four of which are National Scenic Byways, and two of which are All-American Roads. The Cape to Cape Scenic Byway encompasses 79 miles (127.1 kilometers) of Maryland roadways. The segment between Ocean City and Assateague Island is within the Project Area, and includes portions of U.S. 50, and Maryland Routes 528 and 611 (Maryland Office of Tourism 2023).

In Delaware, the Historic Lewes Byway, Gateway to the Bayshore Scenic Byway, is within the Project Area and covers approximately 12.4-miles (20 kilometers) of roads in and near Lewes (DelDOT 2023).

New Jersey's Scenic Byways Program manages seven scenic byways, two of which are nationally designated (New Jersey Scenic Byways Guidebook, 2013). The Bayshore Heritage Byway segment within the Project Area uses New Jersey State Route 47 and County Road 626 within Cape May County (NJDOT 2014).

There are no state-designated scenic roads in the Virginia portion of the geographic analysis area for visual resources.

H.2 Method of Analysis

The SLVIA has two separate but linked parts: the seascape/landscape impact assessment (SLIA) and the visual impact assessment (VIA), as described in detail in BOEM's SLVIA guidance (Sullivan 2021).
SLIA analyzes and evaluates impacts on both the physical elements and features that make up a landscape, seascape, or open ocean; and the aesthetic, perceptual, and experiential aspects of the landscape, seascape, or open ocean that make it distinctive. These impacts affect the "feel," "character," or "sense of place" of an area of landscape, seascape, or open ocean, 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/open ocean/landscape itself and its components, both its physical features and its distinctive character.

VIA analyzes and evaluates the impacts on people of adding Project components 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; the impact receptors for VIA are people. The inclusion of both SLIA and VIA in the BOEM SLVIA methodology is consistent with BOEM's requirement under NEPA to consider all potentially significant impacts of development.

The SLVIA methodology and parameters assessed consider local stakeholders' identity, culture, values, and issues, and their understanding of existing visual conditions (Figure H-3). This SLVIA assesses the Project's operations and maintenance (operations) stage against the environmental baseline. Table H-1 provides the impact levels used in this SLVIA.

The magnitude of effect in a seascape, open ocean, landscape, or view depends on the nature, scale, prominence, and visual contrast of the change and its experiential duration. Figure H-4 depicts this relationship, while Tables H-2 through H-4 summarize BOEM's recommended approach to determining ratings for sensitivity, magnitude, and impact for both SLIA and VIA. These tables are recommendations; some deviation is allowed based on "consideration of individual project circumstances" (Sullivan 2021).

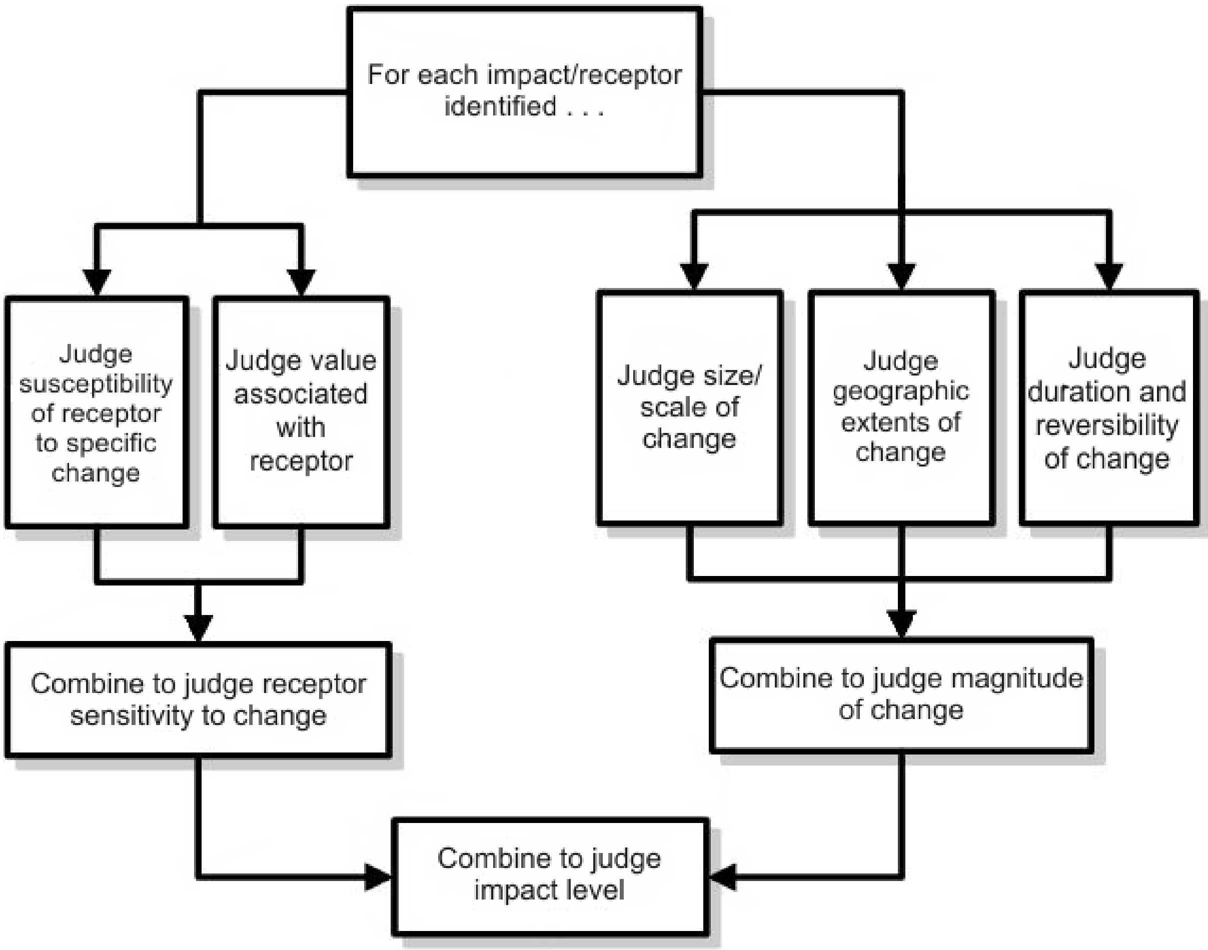


Figure H-3. Generalized Assessment Methodology for seascape/landscape and visual impacts

Table H-1. Definition of potential adverse impact levels

Impact Level	Definition
Negligible	**SLIA:** Very little or no effect on LSZ character, features, elements, or key qualities either because the LSZ lacks distinctive character, features, elements, or key qualities; values for these are low; or Project visibility would be minimal. **VIA:** Very little or no effect on viewers' visual experience because view value is low, viewers are relatively insensitive to view changes, or Project visibility would be minimal.
Minor	**SLIA:** The Project would introduce features that may have low to medium levels of visual prominence within the geographic area of an LSZ. The Project features may introduce a visual character that is slightly inconsistent with the character of the LSZ, which may have minor to medium negative effects on the unit's features, elements, or key qualities, but the LSZ's features, elements, or key qualities have low susceptibility or value. **VIA:** The visibility of the Project would introduce a small but noticeable to medium level of change to the view's character; have a low to medium level of visual prominence that attracts but may or may not hold the viewer's attention; and have a small to medium effect on the viewer's experience. The viewer receptor sensitivity/susceptibility/value is low. If the value, susceptibility, and viewer concern for change is medium or high, the nature of the sensitivity is evaluated to determine if elevating the impact to the next level is justified. For instance, a KOP with a low magnitude of change but a high level of viewer concern (combination of susceptibility/value) may justify adjusting to a moderate level of impact.
Moderate	**SLIA:** The Project would introduce features that would have medium to large levels of visual prominence within the LSZ. The Project would introduce a visual character that is inconsistent with the character of the LSZ, which may have a moderate negative effect on the LSZ's features, elements, or key qualities. In areas affected by large magnitudes of change, the LSZ's features, elements, or key qualities have low susceptibility or value. **VIA:** The visibility of the Project would introduce a moderate to large level of change to the view's character; may have moderate to large levels of visual prominence that attracts and holds but may or may not dominate the viewer's attention; and has a moderate effect on the viewer's visual experience. The viewer receptor sensitivity/susceptibility/value is medium to low. Moderate impacts are typically associated with medium viewer receptor sensitivity (combination of susceptibility/value) in areas where the view's character has medium levels of change, or low viewer receptor sensitivity (combination of susceptibility/value) in areas where the view's character has large changes to the character. If the value, susceptibility, and viewer concern for change is high, the nature of the sensitivity is evaluated to determine if elevating the impact to the next level is justified.
Major	**SLIA:** The Project would introduce features that would have dominant levels of visual prominence within the geographic area of an LSZ. The Project would introduce a visual character that is inconsistent with the character of the LSZ, which may have a major negative effect on the LSZ's features, elements, or key qualities. The concern for change (combination of susceptibility/value) to the LSZ is high. **VIA:** The visibility of the Project would introduce a major level of character change to the view; attract, hold, and dominate the viewer's attention; and have a moderate to major effect on the viewer's visual experience. The viewer receptor sensitivity/susceptibility/value is medium to high. If the magnitude of change to the view's character is medium but the susceptibility or value at the KOP

Impact Level	Definition
	is high, the nature of the sensitivity is evaluated to determine if elevating the impact to major is justified. If the sensitivity (combination of susceptibility/value) at the KOP is low in an area where the magnitude of change is large, the nature of the sensitivity is evaluated to determine if lowering the impact to moderate is justified.

KOP = key observation points; SLIA = seascape and landscape impact assessment; VIA = visual impact assessment

Table H-2. Sensitivity rating matrix

	Susceptibility Rating		
Value Rating	High	Medium	Low
High	High	High	Medium
Medium	High	Medium	Low
Low	Medium	Low	Low

Source: Sullivan 2021

Table H-3. Magnitude rating matrix

	Geographic Extent Rating								
Size and Scale Rating	Large	Large	Large	Medium	Medium	Medium	Small	Small	Small
Large	Large	Large	Large	Large	Large	Medium	Large	Medium	Small
Medium	Large	Large	Medium	Medium	Medium	Small	Medium	Small	Small
Small	Large	Medium	Small	Medium	Small	Small	Small	Small	Small
	Duration/Reversibility Rating								
	Poor	Fair	Good	Poor	Fair	Good	Poor	Fair	Good

Source: Sullivan 2021

Table H-4. Impact rating matrix

	Magnitude Rating			
Sensitivity or Susceptibility Rating	Large	Medium	Small	Negligible [a]
High	Major	Major	Moderate	Minor
Medium	Major	Moderate	Minor	Negligible
Low	Moderate	Minor	Negligible [a]	Negligible

Source: Sullivan 2021

[a] Sullivan (2021) does not include a Negligible magnitude rating. Those values are added here to account for the specific circumstances of the area affected by the Project. Sullivan (2021) also identifies the combination of low sensitivity with low magnitude as having "minor" impacts. For analysis of the Project, the "negligible" rating (as defined in Table H-1) is more appropriate.

The SLVIA offshore geographic analysis area consists of the zone of theoretical visibility (ZTV), which extends 43 miles (69 kilometers) from the Project's WTGs, OSS, and Met Tower (COP Appendix II-J1; US Wind 2023). The maps in Attachment H-1 shows areas on the Delmarva Peninsula and Cape May

Peninsula where the Project's WTGs would be theoretically visible, based on topography, vegetation, structures, and refraction of the earth's atmosphere. WTG visibility would vary throughout the day depending on view angle, sun angle, and atmospheric conditions. Visual contrast of WTGs would vary depending on the visual character of the horizon's backdrop and whether the WTGs are backlit, side-lit, or front-lit. For example, if less visual contrast is apparent in the morning hours, then visual contrast may be more pronounced in the afternoon.

These effects would also be influenced by varying atmospheric conditions, direction of view, distance between the viewer and the WTGs, and elevation of the viewer. At distances of approximately 16 miles (25.7 kilometers) or closer, the form of the Project's WTGs may be the dominant visual element creating visual contrast, regardless of color. At greater distances, color may become the dominant visual element creating visual contrast under certain visual conditions that gives visual definition to the WTG's form and line. The prevailing viewing direction from land within the ZTV would be to the east (from the central Delmarva Peninsula), northeast (southern Delmarva Peninsula) and southeast (from the Cape May Peninsula). All view directions are conceivable when viewing from a water vessel while at sea.

Depending on sun angle, time of day, and the presence of cloud cover, the backdrop sky color may have different intensities and hues. The visual interplay and contrast of the form, line, color, and texture of WTG components would vary with the changing character of the backdrop. For example, front-lit WTGs may have strong color contrast against a darker sky, giving definition to the WTG vertical form and line contrast to the ocean's horizontal character and the line where the sea meets sky. WTG components would be more likely to visually dissipate against a lighter sky backdrop. Variable cloudiness or passing clouds can change lighting conditions and effects, placing some WTGs in the shadow and making them appear darker and less conspicuous while highlighting others with a bright color contrast. The level of noticeability would be directly proportional to the degree of visual contrast and scale of change between the WTGs and the backdrop.

Landfall sites, as well as offshore and inshore export cables would be installed entirely underground within road and existing utility rights-of-way and would not be visible once construction is complete. As a result, these components are not evaluated. The onshore geographic analysis area includes areas potentially within view of the onshore substation sites and the approximately 500 foot (152 meter) overhead transmission lines connecting the proposed onshore substations and the existing substation at the NRG Indian River Power Plant.

US Wind's evaluation of the Project's visual impacts did not fully implement BOEM's SLVIA methodology (Sullivan 2021). Specifically, US Wind defined Landscape Similarity Zones (LSZ) based on National Land Cover Database (NLCD) mapping, but did not identify or define seascape, open ocean, or landscape character areas (LCA). This appendix applies the SLVIA methodology to the Project and other offshore wind projects included in the Planned Activities Scenario to the degree possible, based on information provided in US Wind's COP (Volume II, Section 15.0; and Appendix II-J1; US Wind 2023).

H.3 Existing Seascape and Landscape Character

This section describes the existing character of the areas of seascape, open ocean, and landscape within the ZTV. These descriptions form the basis for the SLIA results described in Section H.5.

H.3.1 Overview

The Lease Area lies offshore from the Delmarva Peninsula, which is part of the Atlantic Coastal Plain physiographic province. The coastal plain is "a low relief landscape" (COP Volume II, Section 3.1.1; US Wind 2023). Heavily developed beach resort communities along the Atlantic coast include Ocean City, Maryland; Fenwick Island, Bethany Beach, Dewey Beach, and Rehoboth Beach, Delaware; and Cape May and Wildwood New Jersey. Less dense residential development occurs along the coast between Bethany Beach and the Indian River Inlet. Delaware Seashore State Park, between Bethany Beach and Dewey Beach, is a largely undeveloped seashore between the inlet and Dewey Beach. Other coastal landforms and land uses include inland bays such as Indian River Bay, "dune systems, back-bay lagoons and salt marshes, and sedimentary features, such as outwash fans" (COP Volume II, Section 3.1.1; US Wind 2023). The Assateague-Fenwick barrier island, which includes the developed areas of Ocean City, Maryland and Fenwick Island, Delaware, as well as Assateague Island State Park and Assateague Island National Seashore, is a dominant geographic feature.

Visibility in the region can occasionally be impaired by fog, precipitation, and haze. During the spring and early summer fog can be persistent, but often lift somewhat during the day, and more so near the shoreline. Visibilities are most likely to be constrained from December through June (COP Volume II, Section 2.7; US Wind 2023).

H.3.2 Seascape, Open Ocean, and Landscape

BOEM's SLIA methodology (Sullivan 2021) includes identification of landscape character areas (LCA) and seascape character areas (SCA) in addition to the open ocean; however, US Wind's field inventory of existing conditions occurred before BOEM's SLIA methodology was published. As a result, US Wind classified the geographic analysis area according to LSZs, based on NLCD classifications "combined with field observations and regional knowledge" (COP Appendix II-J.1; US Wind 2023). Table H-5 defines the LSZs and the area of each LSZ affected. Because they primarily reflect land use and land cover rather than the more holistic concept of character described in BOEM's SLIA methodology (Sullivan 2021), LSZs are substantially different from LCAs and SCAs. In the absence of LCAs and SCAs defined by the applicant, this cumulative SLVIA adapts US Wind's LSZs as the basis for the cumulative SLIA, with the acknowledgment that the resultant analysis may lack the detail and nuance envisioned in BOEM's SLIA methodology (Sullivan 2021). The paragraphs below describe each LSZ and are adapted from US Wind's LSZ descriptions (COP Appendix II-J1, Section 3.4; US Wind 2023).

H.3.2.1 Atlantic Ocean

The Atlantic Ocean LSZ includes open waters offshore (seaward of the barrier islands and Atlantic coastline) southern New Jersey and the entire Delmarva Peninsula within the geographic analysis area. This area is primarily used by maritime industry users and recreational boaters. Views in this LSZ are almost entirely unobstructed except by large waves, buoys, weather conditions, or other vessels.

The character of this LSZ is defined by expansive views of open water in all directions, with some artificial and natural shorefront elements such as piers, jetties, buildings, dunes, and forests visible when looking toward shore. Recreational and commercial vessels are common sights in this LSZ. Smaller vessels are frequently seen within and near the Indian River Inlet in Delaware and the Ocean City Inlet in Maryland, due to the access that these waterbodies provide to inland open waters. Larger commercial vessels are visible offshore within the designated traffic lanes for the approaches to Delaware Bay. At its mouth (between Cape May, New Jersey and Cape Henlopen, Delaware), Delaware Bay is indistinguishable from the open waters of the Atlantic Ocean proper and is thus part of the Atlantic Ocean LSZ. The entrance to Delaware Bay is an area of high recreational and commercial vessel traffic.

Table H-5. Landscape similarity zones within the geographic analysis area

Landscape Similarity Zone	NLCD Classifications	Total Area in ZTV, square miles (square km)	Percent of Total ZTV [a]	Affected Area in ZTV, square miles (square km)	Percent of Affected Area of ZTV
Atlantic Ocean	Open Water	6,100 (15,798.9)	77.6%	6,076 (448.1)	96.1%
Inland Open Water (Bays, Lakes, and Ponds)	Open Water	224 (580.2)	2.8%	173 (448.1)	2.7%
Forest and Forested Wetlands	All Forest and Forested Wetlands	661 (1,712.0)	8.4%	2.7 (7.0)	<0.1%
	Deciduous Forest	29 (75.1)	<0.1%	<0.1 (<0.3)	<0.1%
	Evergreen Forest	114 (295.2)	0.1	<0.1 (<0.3)	<0.1%
	Mixed Forest	88 (227.9)	0.1	<0.1 (<0.3)	<0.1%
	Woody Wetlands	431 (1,116.3)	5.5	2.6 (6.7)	<0.1%
Agriculture	All Agriculture	515 (1,333.8)	6.5%	13 (33.7)	0.2%
	Cultivated Crops	510 (1,320.9)	6.5	13 (33.7)	0.1%
	Pasture/Hay	4 (10.4)	<0.1%	<0.1 (<0.3)	<0.1%
Developed, Open Space	Developed, Open Space	106 (274)	1.3%	2.1 (5.4)	<0.1%
Wetlands	Emergent Herbaceous Wetlands	91 (235.7)	1.2%	40 (103.6)	0.6%
Developed, Low Intensity (Residential)	Developed, Low Intensity	76 (196.8)	1.0%	2.3 (6.0)	<0.1%
Developed, Medium Intensity (Urban Fringe)	Developed, Medium Intensity	48 (124.3)	0.6%	2.9 (7.5)	<0.1%
Developed, High Intensity (Residential/Commercial)	Developed, High Intensity	19 (49.2)	0.2%	1.6 (4.1)	<0.1%
Beach	Barren Land (Rock/Sand/Clay)	13 (33.7)	0.2%	7.8 (20.2)	<0.1%
Low Vegetation (Shrub/Scrub, Grasslands)	All Low Vegetation	13 (33.7)	0.2%	0.2 (0.5)	<0.1%
	Grasslands/Herbaceous	5 (12.9)	<0.1%	<0.1 (<0.3)	<0.1%
	Scrub/Shrub	9 (23.3)	<0.1%	<0.1 (<0.3)	<0.1%
Total		7,866 (20,373.9)	100%	6,321 (16,371.3)	100%

Source: COP Appendix II-J1, Table 3-4, US Wind 2023

km = kilometers; ZTV = zone of theoretical visibility

[a] Percentages and totals may not match due to rounding.

H.3.2.2 Inland Open Water

Open water within the geographic analysis area other than the Atlantic Ocean and Delaware Bay includes inland bays, lakes, and ponds. Extensive inland bays exist along the Delaware and Maryland coastline, including Rehoboth Bay and Indian River Bay in Delaware, Assawoman Bay in Maryland and Delaware, Isle of Wight Bay in Maryland, and Chincoteague Bay in Maryland and Virginia. The inland bays are considered important natural resource areas and are adjacent to or overlap many conservation areas including Assateague Island National Seashore, Wallops Island and Chincoteague National Wildlife Refuges, designated wildlife management areas, state parks, and other lands that can be important natural recreation and tourism locations.

Views in this LSZ are typically expansive (as is the case with the Atlantic Ocean LSZ) and include shoreline development ranging from high-density commercial and residential areas near Ocean City to undeveloped natural areas adjacent to national wildlife refuges and other preserved areas. Smaller commercial and recreational vessels are frequently observed transiting or engaged in fishing, hunting, and birdwatching, among other activities.

H.3.2.3 Forest and Forested Wetlands

Forest and forested wetlands in the geographic analysis area are often found adjacent to open water areas, often as part of designated preservation area such as state forests or the preserved areas listed for the Inland Open Waters LSZ. This LSZ is typically undeveloped but occasionally includes interspersed areas of either agricultural fields or small-scale residential developments. These areas can be protected areas, either as wildlife or restoration areas, but can also be sites of recreation. Views within forested areas are typically limited due to intervening vegetation.

H.3.2.4 Agricultural Land

The Agricultural Land LSZ is typically associated with production of corn, soybeans, barley, and winter wheat, and is concentrated almost entirely along the western portion of the geographic analysis area. This LSZ includes large open field lots bordered by mature hedgerows or forest and interspersed with rural residential lots. Views in this LSZ can be expansive but are typically limited by the nearest hedgerow or forested parcel, and thus rarely offer views offshore.

H.3.2.5 Developed Open Space

Developed open space typically includes golf courses and recreation fields. US Wind notes that the NLCD mapping of developed open space may overestimate the actual land area occupied by this LSZ, due to inclusion of expansive road medians and shoulders, residential lawns, and similar cover types. Views in this LSZ are typically focused internally (for golf courses, the views are generally framed by wood lots or forest); thus, expansive views beyond the zone are not typical.

H.3.2.6 Wetlands

The wetlands LSZ (which includes wetland types other than forested wetlands) occurs almost entirely along the perimeter of the Inland Open Water LSZ, and at the edge of other rivers and tributaries. Wetlands are typically void of any development. Views are typically limited by either the wetland vegetation itself or by surrounding vegetation.

H.3.2.7 Developed Areas

The Developed Areas LSZ includes separate sub-areas for High Intensity (higher-density residential, commercial, and other uses), Medium Intensity (urban fringe areas consisting of residential and some commercial or other non-residential uses), and Low Intensity (typically Residential) development. In the geographic analysis area high intensity areas are generally found within and adjacent to the shoreline resort communities (Ocean City/Fenwick Island, Bethany Beach, Dewey Beach, and Cape May/Wildwood). Medium intensity development can be found adjacent to these communities and along major transportation routes further inland. Low intensity developed areas are at the fringes of the medium intensity areas and scattered amid the Forest and Agricultural LSZs. Views within developed areas depend primarily on proximity to the shoreline. The most expansive views of the ocean are typically available from the easternmost (or southeasternmost for the New Jersey communities) row of structures and streets in High Intensity Developed areas. Exposure to expansive ocean views is limited to unobstructed shore-facing development, particularly from upper floors, decks, and balconies overlooking the ocean. Except for these shoreline-adjacent areas, urban centers, industrial, and inland commercial zones have limited views of the seascape, often distracted by visual clutter or an abundance of visual interest within the zone itself.

H.3.2.8 Beaches

The Beaches LSZ encompasses the entire Atlantic Ocean shorefront and vary in width depending on the proximity of development. Beach areas are the primary recreational attractor for the geographic analysis area and are the most exposed to ocean views, which represent a defining characteristic of this LSZ, along with vegetated dunes, open sandy beaches, and piers or shorefront buildings in some areas. Many beaches in the geographic analysis area are almost entirely undeveloped due to designations as state parks or conservation areas for the protection of threatened and endangered migratory birds and shore birds. These include Cape Henlopen State Park, Delaware Seashore State Park and Fenwick Island State Park in Delaware, and nearly all of 37-mile (59.5 kilometer)-long Assateague Island in Maryland and Virginia. Predominant users in this zone include local residents and recreationists. This LSZ offers high exposure to expansive (typically 180-degree), uninterrupted views of the ocean along the coast. Views also typically include beach recreation activities and vessels and wildlife offshore.

H.3.2.9 Low Vegetation

The Low Vegetation LSZ includes scrub/shrub and grassland areas characterized by limited to no development and open views restricted only by vegetation in adjacent LSZs. This LSZ is scattered throughout the geographic analysis area.

H.4 Visual Character

This section describes existing viewer types and important viewpoints within the ZTV. These descriptions form the basis for the VIA results described in Section H.5.

H.4.1 Viewer Types

For the VIA component of BOEM's SLVIA guidance, viewers who might experience visual effects from construction and operation of the Project are the resource for whom impacts are evaluated. These viewers can be classified into viewer types, based on distinctions such as viewer concern, expected sensitivity to landscape changes, activity types, and viewing characteristics.

Viewer concern can vary depending on the characteristics and preferences of each key viewer group. For example, residential viewers are expected to have high concern for changes in views from their residences, whereas motorist concern generally depends on when and where travel occurs and the type of travel involved (e.g., commuting vs. recreational travel). The types of viewers and their associated viewing characteristics are described in the sections below. These descriptions are adapted from US Wind's User Group descriptions (COP Appendix II-J1, Section 3.3; US Wind 2023).

H.4.1.1 Commuters and Through Travelers

Travelers passing through an area typically view the landscape from motor vehicles on their way to or from work or other destinations. Travelers include daily commuters and people engaged in various types of business or personal travel. Travelers would be concentrated on the major roads that cross the Visual Study Area. The ocean views (i.e., views toward the Project and other offshore wind projects) available to drivers and passengers can be obstructed by other cars, buildings, infrastructure, vegetation, and weather, depending on the road segment being used. Commuters and through travelers passing through a state park or a similar undeveloped area (e.g., Delaware Seashore State Park), may have longer-duration unobstructed ocean views. For viewers passing through an urban center (e.g., along Route 1 in Ocean City, Maryland), ocean views would be blocked by existing buildings.

Commuters do not tend to stop along their travel routes, have a relatively narrow FOV because they are focused on road and traffic conditions, and are destination oriented. Passengers in commuter vehicles would have greater opportunities for prolonged off-road views toward landscape features and, accordingly, may have greater perception of changes in the visual environment. Non-commuter travelers may have greater opportunities for prolonged views toward landscape features and may take more notice of changes in the visual environment.

H.4.1.2 Local Residents

Local residential viewer groups consist of people who live within the geographic analysis area, either year-round or seasonally. Local residents generally view the landscape from their yards and homes, as well as from places of employment, town centers, parks, and waterways while engaged in daily activities. Residents of primary interest for this analysis live in or near the shore in locations with potential ocean views.

Regardless of their residence location, local residents' sensitivity to visual quality can be variable and may be tempered by the existing visual character and setting of their neighborhoods. For example, residents with views of existing commercial or industrial facilities or electric transmission lines may respond differently to landscape changes from development of similar facilities than those with views of open fields or forested areas. It is understood, however, that local residents are generally familiar with the local landscape and may be more sensitive to visual changes.

H.4.1.3 Workers

Workers within the geographic analysis area includes office workers, and employees in the tourism, agricultural, commercial, and retail sectors. Maritime industry employees are a separate viewer group (Section H.3.3.4). As with the Commuters and Through Travelers viewer types, Workers traveling to their place of work would have limited but occasional ocean views during their commute. While at work, ocean views would depend on the location and type of work. Office, retail, and commercial workers would likely be indoors and thus would have limited to no ocean views. Employees in the coastal tourism industry (e.g., restaurant staff, hotel staff, tour guides) would be focused on work activities but would likely have more opportunities for ocean views, especially in seaside businesses (and more frequently during the summer tourist season). Agricultural workers would usually be outside in an unobstructed landscape but would be focused on work activities. Moreover, as discussed in Section H.3.2.4, Agricultural Land, ocean views from agricultural lands are often limited.

H.4.1.4 Maritime Industry Workers

Maritime industry worker are viewers who earn a livelihood offshore on the Atlantic Ocean, including commercial fishers, vessel crews, and other offshore workers. These workers would have almost completely unobstructed views of the Project and other offshore wind projects from open water within the Atlantic Ocean LSZ described in Section H.3.2.1, and could have obstructed to open views from water-adjacent lands such as marinas, docks, or piers (e.g., within Ocean City Harbor or Indian River Bay). Maritime industry workers would typically focus on work activities (e.g., toward the water's surface or within the vessel during fishing activities) and would thus have less opportunity to view the Project than recreational viewers. Nonetheless, except when obstructed by atmospheric and weather conditions, potential views of offshore wind projects for this viewer group would be extensive and long-duration.

H.4.1.5 Recreational Users

This viewer group includes local and seasonal residents engaged in recreational activities as well as tourists and recreational users visiting from out of the local area. These users can be involved in outdoor recreational activities at beaches, on boardwalks, and in parks and other developed recreational facilities or in undeveloped natural settings such as forests or preserves. Tourists and recreational users come to the area for the purpose of experiencing its cultural, scenic, and/or recreational resources. They may view the landscape while traveling to these destinations on roads or from the sites themselves.

The recreational user group includes those involved in active recreation (e.g., hiking, biking, fishing, boating, swimming), taking in the scenery, viewing wildlife or enjoying a landscape (e.g., Delaware Seashore State Park, Cape Henlopen State Park, numerous private beaches). Activities such as fishing, boating, and swimming may take place near shore at coastal beaches or offshore from a personal vessel. Other users may be visiting restaurants for a meal, shopping, attending concerts, or other nighttime-based activities (e.g., Ocean City boardwalk). (e.g., bicyclists, golfers, hikers, joggers, swimmers, recreational boaters, kayakers, and participants in team sports) and those involved in more passive recreational activities (e.g., picnicking, sightseeing, and wildlife observation). For some of these viewers, particularly those using undeveloped recreation facilities, scenery is an important part of their recreational experience, and recreational users often have continuous views of landscape features over relatively long periods of time. Most recreational viewers will only view the seascape from ground-level or water-level vantage points. Recreational users' sensitivity to visual quality and landscape character will be variable, depending on their reason for visiting the area. However, recreationalists are generally considered to have relatively high sensitivity to scenic quality and landscape character.

Viewers located on the water near coastal beaches would have an unobstructed view of the Project and other offshore wind projects in the background. For viewers on the water, offshore wind projects would be the dominant feature on the oceanscape. It is possible that some users would seek out the Project as a tourist attraction.

H.4.2 Key Observation Points and Simulations

US Wind identified 26 potential locations for key observation points (KOPs) to evaluate the potential visual and scenic impacts of the Project's offshore components. From that list, US Wind—in consultation with BOEM—prepared detailed analyses and simulations for 12 KOPs. This includes simulations of the Project alone from all 12 of these KOPs and simulations of Alternative D from four of these KOPs (Attachment H-2). US Wind also provided simulations of the Project with other offshore wind projects from 6 KOPs (see Section H.5.4 and Attachment H-3).

In addition, this cumulative SLVIA includes a theoretical offshore KOP (representative of views from vessels close to or within the Lease Area) and one onshore KOP to analyze impacts of the Project's onshore substation facilities (Table H-6). No KOPs were identified to represent the Project's onshore operations and maintenance (O&M) facility, which would be located at or near existing maritime industrial uses near Ocean City, Maryland. The KOPs for the Project were selected to be representative of important individual resources and the diverse views of the Project available on the Delmarva

Peninsula and Cape May Peninsula, primarily from locations near the ocean and with ocean views. Table H-6 lists the KOPs and the corresponding LSZ, representative resource types, and distance to the nearest Project WTG (or the Project's onshore substation). Figure H-4 shows the location of these KOPs. US Wind prepared full panoramic simulations from these KOPs, except for the theoretical offshore KOP, where no simulations were prepared and the onshore substation KOP, where a single-frame simulation was prepared (COP Appendix II-J1; US Wind 2023).

H.4.3 Historic Resources and Environmental Justice Communities

Historic resources, including effects to views from historic sites and areas, are evaluated in detail in the Draft EIS Section 3.6.2, *Cultural Resources* and Appendix I*, Cumulative Historic Resources Visual Effects Assessment*. The three historic resources evaluated in Appendix I that are also within the ZTV are listed below, along with the closest representative KOP.

- U.S. Coast Guard Tower, Ocean City, Maryland (KOP 1)
- Oceanside North Ocean City Survey District (KOP 22)
- Fort Miles Historic District (KOP 25)

Areas that meet federal or state criteria to be considered environmental justice communities are evaluated in detail in Draft EIS Section 3.6.4, Environmental Justice. Environmental justice communities within the ZTV include neighborhoods in and around Cape May, NJ and Millsboro, DE. Ocean City, MD and portions of the Delaware coastline and Cape May, NJ also have high engagement in and/or reliance on commercial and recreational fishing, another indicator of potential environmental justice concern. KOPs that represent Project views from identified environmental justice communities include:

- KOPs 1 and 22 (Ocean City, MD);
- KOPs 19 and 28 (Rehoboth Beach, DE);
- KOP 20 (Delaware Seashore State Park);
- KOP 24 (Cape May, NJ); and
- State Route 24 (Onshore Substation).

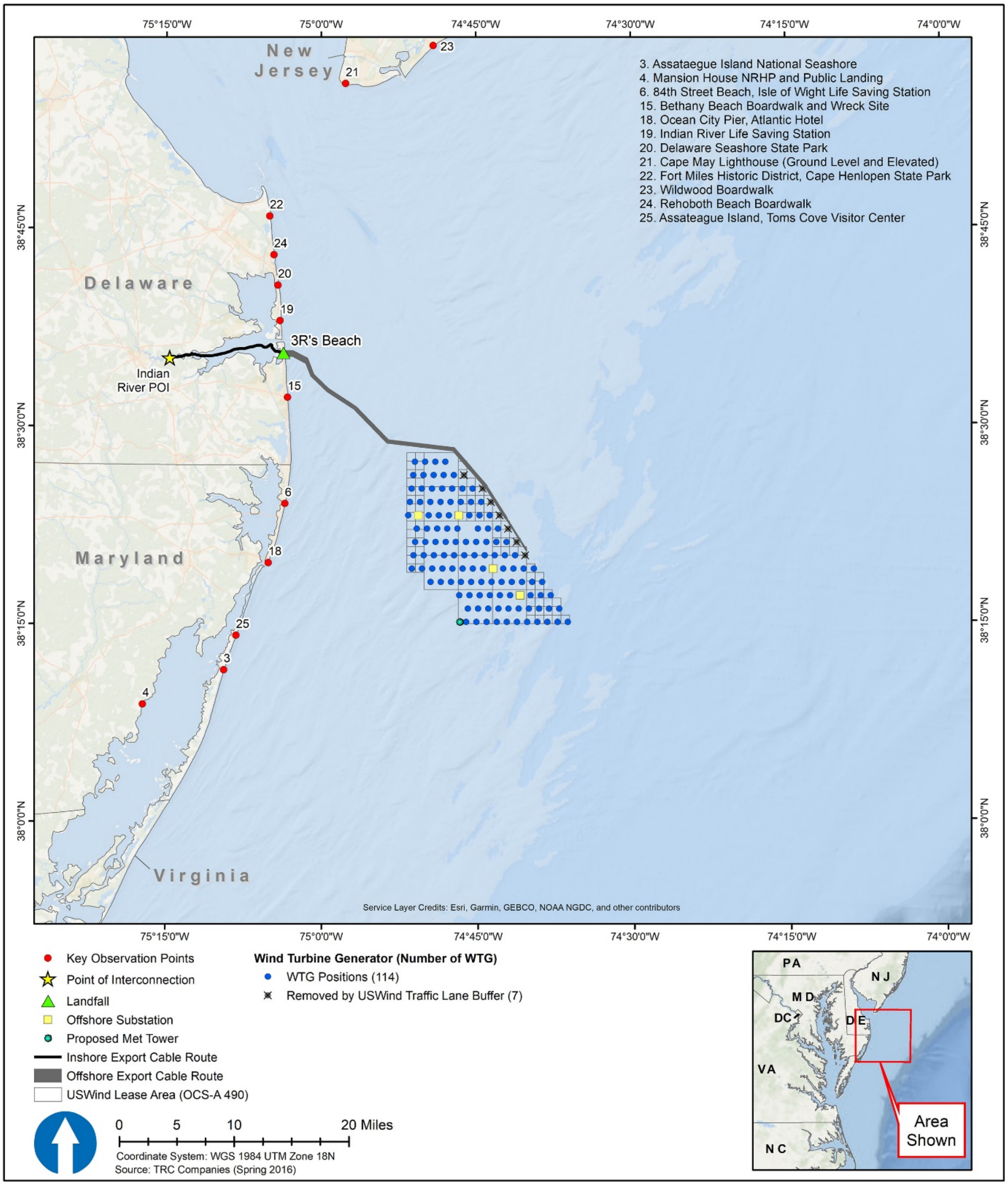


Figure H-4. Location of Key Observation Points

Table H-6. Key observation points

Key Observation Point	Landscape Similarity Zones	Representative Resource Types	Representative Viewer Types	Distance to Closest WTG, miles (km)
3: Assateague Island National Seashore; Assateague Island, MD	Beach	Natural Area; Shoreline	R	16.4 (26.4)
4: Mansion House NRHP and Public Landing; Snow Hill, MD	Developed (Medium Intensity), Wetlands, Inland Open Water	Historic Building; Natural Area; Open Water (Bay)	L	26.3 (42.3)
6: 84th Street Beach, Isle of Wight Life Saving Station; Ocean City, MD	Beach, Developed (High Intensity)	Shoreline	L, W, R	10.8 (17.4)
15: Bethany Beach Boardwalk and Wreck Site; Bethany Beach, DE	Beach, Developed (High Intensity)	Boardwalk; Shoreline	L, W, R	12.4 (19.9)
18 Ocean City Pier, Atlantic Hotel; Ocean City, MD	Beach, Developed (High Intensity)	Boardwalk; Shoreline	W, R	13.0 (21.0)
19: Indian River Life Saving Station; Rehoboth Beach, DE	Beach	Historic Building; Shoreline	C, L, R	17.0 (27.0)
20: Delaware Seashore State Park; Dewey Beach, DE	Beach	Natural Area; Shoreline	R	19.5 (31.4)
21: Cape May Lighthouse, Cape May, NJ (Ground-level and elevated)	Beach, Developed (Low, Medium, and High Intensity), Wetlands	Historic Building; Developed Areas; Shoreline	L, W, R	33.6 (54.0)
22: Fort Miles Historic District, Cape Henlopen State Park; Lewes, DE	Beach, Wetlands	Natural Area; Historic Building; Shoreline	L, R	24.9 (40.1)
23: Wildwood Boardwalk; Wildwood, NJ	Beach, Developed (High Intensity)	Boardwalk; Shoreline	L, W, R	36.3 (58.5)
24: Rehoboth Beach Boardwalk; Rehoboth Beach, DE	Beach, Developed (High Intensity)	Boardwalk; Shoreline	L, W, R	21.9 (35.2)
25: Assateague Island, Toms Cove Visitor Center; Chincoteague, VA	Beach	Natural Area; Shoreline	R	39.7 (64.0)

Key Observation Point	Landscape Similarity Zones	Representative Resource Types	Representative Viewer Types	Distance to Closest WTG, miles (km)
State Route 24 (Onshore Substation)	Agriculture, Forest	Agriculture, Forest	C, L, R	1.0 (1.6)[a]
Theoretical Offshore Location	Open Ocean	Open Ocean	M, R	Varies

Representative viewer types: C = commuters and through travelers; L = local residents; M = maritime industry workers; R = recreational users; W = workers
DE = Delaware, KOP = key observation point; LSZ = landscape similarity zone; MD = Maryland, NRHP = National Register of Historic Places; NJ = New Jersey, VA = Virginia; WTG = wind turbine generator.
[a] Distance for the State Route 24 KOP indicates the distance between the viewer and the Project's onshore substation facilities.

H.5 Results

This section discusses the characteristics of the Project that would contribute to seascape and landscape impacts, as well as visual impacts. Table H-7 lists the noticeable daytime and nighttime elements of the Project's WTGs and OSS.

Table H-7. Heights of noticeable wind turbine generator and electrical service platform elements

Element	Height in Feet (Meters), MLLW	Maximum Visible Distance, miles (km)[a]
WTG rotor blade tip at maximum vertical extension	938 (286)	43.0 (69.2)
Federal Aviation Administration hazard light (top of nacelle)	546 (166)	33.6 (54.1)
Hub	528 (161)	33.1 (53.3)
Mid-tower lights (approximate height)[b]	262 (80)	24.1 (38.8)
OSS lights (maximum height of OSS topside)	164 (50)	19.7 (31.7)
Navigation Light (WTG and OSS)	74 (23)	14.2 (22.9)
Yellow Foundation Base Color (WTG and OSS)	74 (23)	14.2 (22.9)

km = kilometers; MLLW = mean lower low water; OSS = offshore substation; WTG = wind turbine generator
a Calculations assume a coefficient of refraction of 0.13 and an observer height of 5 feet (1.5 meters) MLLW.
b Indicates maximum height of mid-tower light. Height could vary from 230 to 262 feet (70 to 80 meters) MLLW.

H.5.1 Impacts of Alternative B – Proposed Action

H.5.1.1 Seascape/Landscape Impact Assessment

Table H-8 summarizes the noticeable Project elements within each LSZ during clear viewing conditions. At night, only lighting would be visible.

Table H-8. Project noticeable elements by landscape similarity zone, Alternative B

Landscape Similarity Zone	Noticeable Elements[a, b]
Atlantic Ocean	B, E, N, NL, OL, T, Y
Inland Open Water	B, N, OL, T
Agricultural Land	B, N, OL, T
Developed Open Space	B, N, OL, T
Wetlands	B, N, OL, T
Developed—High Intensity	B, E, N, NL, OL, T, Y
Developed—Medium Intensity	B, E, N, OL
Developed—Low Intensity	B, E, N, OL
Beaches	B, E, N, NL, OL, T, Y
Low Vegetation	B, E, N, OL

B = WTG blades; E = electrical service platform; N = nacelle; NL = navigation light; OL = nacelle-top obstruction lights; T = WTG tower; Y = yellow foundation transition piece

The SLIA component of this cumulative SLVIA considers impacts on the physical elements and features that make up each LSZ and the aesthetic, perceptual, and experiential aspects of the LSZ that contribute to its distinctive character. These impacts affect the "feel," "character," or "sense of place" of an area of seascape, open ocean, or landscape. Table H-9 describes the components of receptor sensitivity (susceptibility and values) as well as the overall sensitivity rating for each LSZ. Table H-9 also describes the components of the Project's impact magnitude (geographic extent, size and scale), along with the overall SLIA impact level for each LSZ.

Impacts on the Atlantic Ocean, Developed—High Intensity, Developed—Medium Intensity, Beaches, and Low Vegetation LSZs would be major due to the high sensitivity to change for these LSZs combined with the large magnitude of impacts. For most of these LSZs, the dominant existing character is natural (except for developed beach communities such as Ocean City). The daytime and nighttime (lighting) presence of the WTGs and OSSs would change the character of these areas by adding visually dominant WTGs, OSS, and wind energy activities to areas where such components are not present. As discussed in Table H-9, impacts on LSZs further inland would generally be lower due to limited ocean views, distance from the ocean and the Project, and other visual clutter from vegetation and structures that limit the visible magnitude and geographic extent of the Project structures.

Project construction and operations vessel traffic and activities (including use of the onshore O&M facility) would cause incremental effects on LSZ character due to increased operations vessel traffic and onshore activity. Vessel activity would be noticeable in offshore views, particularly from the Atlantic Ocean, Beaches, and Low Vegetation LSZs near the O&M facility in Ocean City but would be indistinguishable from most other offshore vessel activity, and thus would not have a significant seascape/landscape effect. Decommissioning would involve the removal of all offshore structures and would follow the reverse of construction activity. Decommissioning activities would therefore cause visual effects similar to those of construction activities but of shorter duration.

When ADLS is not activated (all but a few hours per year), there would be no nighttime lighting impacts. When activated by ADLS, nighttime lighting of Project WTGs would have major nighttime impacts resulting from continuously flashing lights, the sky light dome, and reflections on clouds during those limited times. U.S. Coast Guard-required vessel navigation warning lights would be mounted at the top of the foundation for each WTG and OSS. The lighting is designed to be visible to at least 5 nautical miles (5.8 miles, 9.3 kilometers) during low visibility conditions and would be visible from further away under clear conditions (COP Appendix II-J1; US Wind 2023). This lighting could be visible to observers onshore in clear conditions. Lights on OSS, when lit for maintenance, would potentially be visible from beaches and adjoining land and built environment during hours of darkness. The nighttime sky light dome and cloud lighting caused by reflections from the water surface may be seen even if individual lights are not visible, depending on variable ocean surface and meteorological reflectivity.

Due to its location, the onshore substation would not affect the Atlantic Ocean and Beach LSZs and would only affect a limited area within portions of other LSZs, most of which (except for Inland Open Waters) have low sensitivity to change. Due to the limited magnitude and geographic extent of the onshore substation components, the substation would have minor impacts on landscape character in these units. While substation infrastructure would be distinct and could differ in character from typical rural development, it would typically be visible adjacent to similar existing components and thus would not represent a substantial change in conditions.

Table H-9. Seascape, open ocean, and landscape character and impact levels, Alternative B

LSZ	Receptor Sensitivity Components and Rationales			Impact Magnitude Components and Rationale[a]			SLIA Impact Level and Rationale
	Susceptibility	Value	Sensitivity	Geographic Extent [b]	Size and Scale	Magnitude	
Atlantic Ocean	High Open water with a generally flat horizon (depending on sea state, weather, and atmospheric conditions) dominates the view and is the focal element in all directions. Away from the shore, this LSZ has minimal human intrusion, nearly all of which is temporary, in the form of vessel traffic. Closer to shore, human-made features such as jetties, buoys, and other coastal infrastructure are more common but not dominant. Adjacent visible LSZs include Beaches, Developed Areas (primarily high and medium intensity) and low vegetation (i.e., adjacent to protected open space).	High Special designation locations are present in Delaware and Maryland. Portions of this LSZ with and without special designations have biological, commercial, and spiritual character and values.	High This LSZ has a dominant presence of relatively flat, open ocean and a horizon free of human-made interruptions, along with extensive special designation areas.	Large The Project would affect nearly all of this LSZ.	Large The Project would affect nearly all of the Atlantic Ocean within the ZTV and would add a large and an obvious human-made element to otherwise undisturbed open ocean views, resulting in a large-scale change in character.	Large Impact magnitude would vary based on exact position within this LSZ. Impacts would be highest close to or within the Lease Area, where WTGs and OSS would be dominant and entirely out of character but would diminish with distance.	Major The Atlantic Ocean LSZ is highly sensitive, and the Project would be clearly noticeable over a large area.
Inland Open Water	High Open water with a varied horizon defined by surrounding vegetation and developed areas. Human intrusion is apparent throughout this LSZ, including permanent structures along the shore and temporary vessel traffic. Views of the ocean are generally rare but are possible close to the inland side of barrier islands. Closer to shore, human-made features such as jetties, buoys, and other coastal infrastructure are more common but not dominant. This LSZ abuts and is adjacent to multiple other LSZs, creating unique edge conditions.	High Parts of this LSZ are located within a National Seashore, National Wildlife Refuges, state parks, and other protected areas. Because inland waters are calmer and shallower than the Atlantic Ocean, this LSZ is valued for recreation opportunities. The irregular nature of inland shorelines creates opportunities for solitude year-round.	Medium Residents and visitors place substantial importance on the varied scenery in this LSZ, and this LSZ contains multiple special designation areas; however, human intrusion is a common component of the seascape throughout the LSZ.	Small A small geographic extent of this LSZ—generally the eastern portion of inland waters such as Rehoboth, Indian River, Assawoman, and Sinepuxent Bays near undeveloped portions of the Maryland and Delaware barrier islands) has views of the onshore or offshore Project area	Small The Project would affect a small portion of this LSZ. Where visible, the Project would occupy a small portion of views and would generally be viewed through low vegetation along barrier islands, resulting in minimal change in character.	Small Most portions of this LSZ would have no views of the Project. Where visible, the Project would comprise a small portion of the view and would rarely be visible separate from screening vegetation, resulting in limited if any change in existing character.	Minor While this LSZ is highly valued, views of the Project would be limited, and when visible, the Project would be a limited change in existing character.

LSZ	Receptor Sensitivity Components and Rationales			Impact Magnitude Components and Rationale[a]			SLIA Impact Level and Rationale
	Susceptibility	Value	Sensitivity	Geographic Extent [b]	Size and Scale	Magnitude	
Forest	High Internal views of trees and understory foliage dominate, except for occasional openings in the forest canopy and axial views along roadways. Many other land uses and human activities occur within or adjacent to the forest area and are part of the majority of potential views.	High Various locally conserved forest stands and state forests are present. Valued scenery is typically focused inward, i.e., toward or within the forest.	High Views are constrained to the immediate area with ocean views, while the more valued scenery is internally focused.	Small A small geographic extent of this LSZ has unobstructed views of the onshore or offshore Project area, relegated to specific inland conditions. Most views are screened by vegetation.	Small The Project would affect a small portion of this LSZ. Where visible, the Project would occupy a small portion of views and would generally be viewed through trees and other dense vegetation within the LSZ, resulting in minimal change in character.	Small Most portions of this LSZ would have no views of the Project. Where visible, the Project would comprise a small portion of the view and would rarely be visible separate from screening vegetation, resulting in limited if any change in existing character.	Negligible While this LSZ is highly valued, views of the Project would be limited, and when visible, the Project would be a limited change in existing character.
Agricultural Land	High Views are dominated by open, flat terrain with low vegetation (i.e., pasture or field crops) and active agricultural or livestock activity depending on time of year. Long-distance views are often available, although these views rarely stretch to the ocean due to this LSZ's largely inland location.	High Many agricultural landscapes are protected open space, either by public agencies, private land trusts, or non-profit organizations. These areas are a scenic attractor for local residents and tourists.	High Views within agricultural areas are highly valued and susceptible to change, both within the LSZ and along its edges.	Small The geographic extent of visible onshore or offshore Project features would be small in most cases except for moderate visual extent for some large plots of agricultural or open land with ocean views.	Small The Project would affect a small portion of this LSZ. The Project would be a minimal change to landscape. Where Project components are visible, views would be partially screened by foreground vegetation, breaking the horizontal occupancy of the Project, resulting in limited change in existing character.	Small Most portions of this LSZ would have no views of the Project. Where visible, the Project would comprise a small portion of the view and would rarely be visible through screening vegetation, resulting in limited if any change in existing character.	Negligible While this LSZ is highly valued, views of the Project would be limited, and when visible, the Project would be a limited change in existing character.
Developed Open Space	High Views are dominated by open, flat or rolling terrain, often with trees or other high vegetation along boundaries (and for golf courses, within the site itself). Active or passive recreation activities (e.g., golfing, team sports, or fitness activities) are components of the internal views. Long-distance views, including views of the ocean are rare.	High Many developed open space landscapes are protected by public agencies, private ownership, or non-profit organizations. These areas are a scenic attractor for local residents and tourists.	High Views within Developed Open Space are highly valued and susceptible to change, both within the LSZ and along its edges	Small The geographic extent of visible onshore or offshore Project features would be small in most cases except for moderate visual extent for some large open spaces without forested buffers.	Small The Project would affect a small portion of this LSZ. Where Project components are visible, views would be partially screened by foreground vegetation breaking the horizontal occupancy of the Project and limiting overall change in existing character.	Small Most portions of this LSZ would have no views of the Project. Where visible, the Project would comprise a small portion of the view and would rarely be visible through screening vegetation, resulting in limited if any change in existing character.	Negligible While this LSZ is highly valued, views of the Project would be limited, and when visible, the Project would be a limited change in existing character.

LSZ	Receptor Sensitivity Components and Rationales			Impact Magnitude Components and Rationale[a]			SLIA Impact Level and Rationale
	Susceptibility	Value	Sensitivity	Geographic Extent [b]	Size and Scale	Magnitude	
Wetlands	High Wetlands are found along the edge of the Inland Open Water LSZ and along other rivers and tributaries. Views from this LSZ are similar to the Inland Open Water LSZ, and thus include frequent human intrusion (permanent and temporary) limited ocean views and unique edge conditions where this LSZ abuts other LSZs.	High Wetlands are typically protected areas. Because the Wetland LSZ generally occupies narrow areas adjacent to the Inland Open Water LSZ, its value is typically a combination of the values of the Inland Open Water and other adjacent LSZs, which can range from high to low.	High Views within wetlands are highly valued and susceptible to change, both within the LSZ and along its edges	Small A small geographic extent of this LSZ—generally adjacent to the eastern portion of the Inland Open Water LSZ has views of the offshore Project area, while portions of the LSZ near the Project's onshore substation site would have views of the onshore facilities. Those views are usually at least partially screened by vegetation (including wetland vegetation itself).	Small The Project would affect a small portion of this LSZ. Where visible, the Project would occupy a small portion of views and would generally be viewed through low vegetation along barrier islands, limiting the extent of the change in existing character.	Small Most portions of this LSZ would have no views of the Project. Where visible, the Project would comprise a small portion of the view and would rarely be visible through screening vegetation, resulting in limited if any change in existing character.	Negligible While this LSZ is highly valued, views of the Project would be limited, and when visible, the Project would be a limited change in existing character.
Developed – High Intensity	High Human-made structures, streets, utilities, and landscaping such as street trees and lawns dominate nearly the entire view, except in the first row of ocean-facing structures or more distant ocean-facing axial views along streets. Susceptibility is thus low, except for high ratings in portions of the LSZ with unobstructed ocean views.	High Ocean views are highly prized and sought in beachfront communities.	Medium to High Based on the high value assigned to ocean views, overall sensitivity is medium in areas without direct ocean views and high in areas with those views.	Large In areas of this LSZ without direct ocean views, the Project would not occupy a meaningful extent of the view. For areas with ocean-facing views, the offshore Project facilities would occupy a substantial extent of the view. This LSZ has no appreciable views of the onshore Project facilities.	Small to Large The Project would affect most of the ocean-facing portion of this LSZ (i.e., the "first row" of development) in beach resort communities in Maryland, Delaware, and New Jersey. From areas of the LSZ near Ocean City and Delaware beach resorts with ocean views, the scale of the change in character would be large, reflecting the dramatic difference between the current open ocean view and the future view with WTGs and OSS. The Project would be nearly imperceptible from ocean-facing areas in New Jersey, and thus would result in small-scale changes to existing character.	Large The Project would affect a substantial portion of the of this LSZ and would create a large-scale change in the existing character from multiple oceanfront communities.	Major The scale and size of the Project would make it a significant new element of the character of ocean-facing portions of this LSZ in beach resort communities, which are highly sensitive to change in visual character. The Project would be clearly distinct and would detract from the character of the open ocean horizon.

LSZ	Receptor Sensitivity Components and Rationales			Impact Magnitude Components and Rationale[a]			SLIA Impact Level and Rationale
	Susceptibility	Value	Sensitivity	Geographic Extent [b]	Size and Scale	Magnitude	
Developed – Medium Intensity	High Human-made structures, streets, utilities, and landscaping such as street trees and lawns dominate nearly the entire view, except in the first row of ocean-facing structures or more distant ocean-facing axial views along streets. Susceptibility is thus low, except for high ratings in portions of the LSZ with unobstructed ocean views.	Medium to High Ocean views are highly prized and sought in beachfront communities, while the internal views are somewhat less valued due to the somewhat lower distinctiveness of residential communities without ocean views.	Medium to High Based on the high value assigned to ocean views, overall sensitivity is medium in areas without direct ocean views and high in areas with those views.	Small to Large In areas of this LSZ without direct ocean views, the Project would not occupy a meaningful extent of the view. For areas with ocean-facing views, the offshore Project facilities would occupy a substantial extent of the view. This LSZ has limited views of the onshore Project facilities.	Small to Large The Project would affect most of the ocean-facing portion of this LSZ (i.e., the "first row" of development). Size and scale would be large from areas of the LSZ near Ocean City with ocean views and would be medium from areas of the LSZ with ocean views in Virginia and Delaware. Size and scale would be low to nearly imperceptible from portions of the LSZ in New Jersey and all areas of the LSZ without unobstructed ocean views.	Large The Project would affect a substantial portion of the of this LSZ and would create a large-scale change in the existing character from multiple oceanfront communities.	Major The scale and size of the Project would make it a significant new element of the character of ocean-facing portions of this LSZ, which are highly sensitive to change in visual character. The Project would be clearly distinct and would detract from the character of the open ocean horizon.
Developed – Low Intensity	High Views center on human-made structures such as rural homesteads and limited transportation and utility infrastructure, set amid landscaped or natural vegetation such as lawns, open fields, and forest stands.	High Most low intensity development is inland and is valued for the relative sparseness of human activity and the proximity to natural or natural-appearing inland areas.	High Existing character is highly valued and highly susceptible to changes.	Small There is a limited geographic extent due to this LSZ's general inland location. This LSZ has limited views of the onshore Project facilities.	Small The Project would a small portion of this LSZ. Where visible within this LSZ, Project components would be a minimal change to landscape.	Small Most portions of this LSZ would have no views of the Project. Where visible, the Project would comprise a small portion of the view but could result in a small but noticeable change in existing character.	Moderate This LSZ is highly valued. While views of the Project would be limited, visible Project components could result in noticeable changes in existing character.
Beaches	High Views are considered highly scenic. They are concentrated out to sea with secondary views extending up and down the coast and across open water. Inland views include grassy dunes, coastal scrub vegetation, and human-made structures. This LSZ abuts and is adjacent to multiple other LSZs, creating unique edge conditions.	High Parts of this LSZ are within a National Seashore, a NHL, and state parks, and contain elements listed on or eligible for the National Register of Historic Places. This LSZ contains large tracts of undisturbed-appearing land valued for recreation. Some beaches are heavily visited, especially during peak summer tourism season, while other beaches are comparatively less visited and provide opportunities for solitude, especially during off season.	High Residents and visitors place substantial importance on beachfronts, and this LSZ contains multiple special designation areas.	Large The Project would be visible from and would thus affect a large portion of this LSZ with unobstructed views of the offshore Project area. This LSZ has no views of the onshore Project facilities.	Small to Large Due to the largely unobstructed ocean views from this LSZ and the absence of industrial development within view, the Project would result in a large-scale change in the Maryland and Delaware portions of this LSZ. The scale of change would be medium from Virginia portions of the LSZ due to the apparent size of the Project, and would be small from New Jersey portions of the LSZ, due to the nearly imperceptible nature of the Project from these areas.	Medium to Large The Project would affect a large portion of the overall geographic area of this LSZ and would result in variable scales of change in existing character.	Major The scale and size of the Project would make it a significant element in ocean views from large portions of this LSZ. The Beach LSZ is highly sensitive, and the Project would be clearly distinct and would detract from the character of the open ocean horizon.

LSZ	Receptor Sensitivity Components and Rationales			Impact Magnitude Components and Rationale[a]			SLIA Impact Level and Rationale
	Susceptibility	Value	Sensitivity	Geographic Extent [b]	Size and Scale	Magnitude	
Low Vegetation	High Most areas of low vegetation are inland with limited to no ocean views. Areas of dunes and low vegetation adjacent to beaches, such as within Delaware Seashore State Park, are characterized by unobstructed ocean views (with beaches in the foreground) with minimal permanent evidence of human activity, and thus are highly susceptibility to development.	High Whereas inland portions of this LSZ are often residential lawns or other landscaped vegetation, the portions of this of this LSZ near the shore include areas within National Seashore and state parks. These areas are generally natural-appearing and are valued for recreation and opportunities for solitude.	High Residents and visitors place minimal importance on inland portions of this LSZ but place substantial importance on portions of this LSZ with ocean views. These areas are also highly susceptible to change.	Large In portions of this LSZ with unobstructed ocean views the offshore Project would occupy a large horizontal portion of the view.	Large From portions of the LSZ with unobstructed ocean views (generally in Delaware and Virginia), the Project would be a substantial change in existing character.	Medium The Project would affect a large portion of the overall geographic area of this LSZ and would be a substantial change in character for areas with unobstructed ocean views.	Major The scale and size of the Project would make it a significant element in ocean views from portions of this LSZ. The Low Vegetation LSZ is highly sensitive to change. The Project would be clearly distinct and would detract from the character of the ocean horizon.

LSZ = landscape similarity zone; NHL = National Historic Landmark
[a] The SLIA methodology includes a component for duration and reversibility. For all seascape, open ocean, and landscape units, the Project's duration would be long-term (30 years), and the Project's visual characteristics would be fully reversible.
[b] Table H-5 (Affected Area in ZTV and Percent of Affected Area of ZTV columns) provides quantitative information about the area of each LSZ with views of Project facilities.

H.5.1.2 Visual Impact Assessment

Visibility, character-changing effects, and visual contrasts reduce steadily with distance from the observation point. Distances from KOPs to the Project would range from:

- 36.3 miles (58.5 kilometers) at KOP 23: Wildwood Boardwalk (the northernmost KOP within the ZTV); and
- 10.8 miles (17.4 kilometers) at KOP 6: 84th Street Beach (the closest KOP to the Project); to
- 39.7 miles (64.0 kilometers) from KOP 25: Assateague Island, Toms Cove Visitor Center (the farthest KOP from the project and the southernmost KOP within the ZTV).

Visibility, character-changing effects, scale, prominence, and visual contrasts increase with elevated observer position relative to the Project. Table H-10 provides the closest distance of Project WTGs to viewers, as well as the horizontal FOVs of the Project at each KOP (Attachment H-3 provides maps documenting these view angles). Typical human FOV extends to 124 degrees in the horizontal axis and 55 degrees in the vertical axis. Based on the height of the Project's WTGs and the distance from the viewer (at least 10.7 miles away) the Project, WTGs would occupy approximately 1.5 percent of the vertical FOV.

Table H-10 also lists key Project characteristics and visual contrasts from each KOP. The analysis considers the introduction of WTGs and OSS to an open ocean baseline. The scale, size, contrast, and prominence of change focuses on the:

- Arrangement of WTGs and OSS in the view;
- Horizontal FOV scale of the Project WTG array (as well as the vertical FOV scale, which was not calculated by the US Wind);
- Position of the array in the open ocean;
- Position of the array in the view, including the extent of natural or human-made elements in the foreground, such as vegetation or structures;
- WTG blade motion; and
- The array's distance from the viewer.

Visibility, scale, observable characteristics, and visual contrasts from Project components decrease with distance from the KOP and increase with viewer elevation. Visual contrast determinations are informed by the COP VIA simulations (COP, Appendix II-J1, Attachment B; US Wind 2023), as well as horizontal and vertical FOV, and vertical FOV. Under the most favorable viewing conditions, nearest WTGs would be:

- Unavoidably dominant features from offshore viewing locations between 0 and 5 miles (0 and 8 kilometers) distance;
- Strongly pervasive features in onshore and offshore viewing locations between 5 and 12 miles (8 and 19.3 kilometers) distance;
- Clearly visible features in the onshore to offshore view between 12 and 28 miles (19.3 and 45.1 kilometers) distance;
- Low on the horizon, but persistent features in the onshore to offshore view between 28 and 31 miles (45.1 and 49.9 kilometers) distance;
- Intermittently noticed features in the onshore to offshore view between 31 and 43 miles (49.9 and 69.2 kilometers) distance; and
- Below the horizon beyond 43 miles (69.2 kilometers) distance.

Table H-10. Project characteristics and visual impact factors, Alternative B

KOP	Distance, miles (km)[a]	Horizontal FOV, Degrees (% of Human FOV)[b]	Vertical FOV, Degrees (% of Human FOV)[b]	Noticeable Elements	Components of VIA							Visibility[c]	Impact Magnitude
					Form	Line	Color	Texture	Scale	Contrast	Motion		
3: Assateague Island National Seashore; Assateague Island	16.4 (26.4)	39.5° (31.9%)	0.5° (1.0%)	B, N, OL, T	Strong	Strong	Medium	Medium	Medium	Strong	Medium	4	Large
4: Mansion House NRHP and Public Landing	26.3 (42.3)	30.7° (24.8%)	0.2° (0.4%)	B, N, OL	Medium	Weak	Medium	Weak	Small	Weak	Weak	2	Small
6: 84th Street Beach, Isle of Wight Life Saving Station; Ocean City	10.8 (17.4)	50.9° (41.0%)	0.9° (1.6%)	B, E, N, OL, T	Strong	Strong	Strong	Medium	Medium	Strong	Strong	5	Large
15: Bethany Beach Boardwalk and Wreck Site; Bethany Beach	12.4 (19.9)	31.8° (25.6%)	0.8° (1.4%)	B, E, N, OL, T	Strong	Strong	Medium	Weak	Medium	Strong	Strong	5	Large
18 Ocean City Pier, Atlantic Hotel; Ocean City	13.0 (21.0)	51.2° (41.3%)	0.7° (1.3%)	B, E, N, OL, T	Strong	Strong	Strong	Medium	Medium	Strong	Strong	5	Large
19: Indian River Life Saving Station; Rehoboth Beach	17.0 (27.0)	22.4° (18.1%)	0.5° (0.9%)	B, E, N, OL, T	Medium	Medium	Medium	Weak	Small	Medium	Medium	4	Medium
20: Delaware Seashore State Park	19.5 (31.4)	20.7° (16.7%)	0.4° (0.8%)	B, E, N, OL, T	Medium	Medium	Medium	Weak	Medium	Medium	Strong	3	Medium
21: Cape May Lighthouse, Cape May, NJ	33.6 (54.0)	13.5° (10.9%) ground	0.1° (0.2%)	B, N, OL, T	Weak	Weak	Weak	Weak	Small	Weak	Weak	2	Small
22: Fort Miles Historic District, Cape Henlopen State Park	24.9 (40.1)	16.1° (13.0%)	0.3° (0.5%)	B, N, OL, T	Medium	Medium	Weak	Weak	Small	Medium	Medium	3	Medium
23: Wildwood Boardwalk; Wildwood	36.3 (58.5)	12.6° (10.2%)	<0.1° (0.1%)	B, N, OL	Weak	Weak	Weak	Weak	Small	Weak	Weak	2	Small
24: Rehoboth Beach Boardwalk	21.9 (35.2)	18.0° (14.5%)	0.3° (0.6%)	B, N, OL, T	Medium	Medium	Weak	Weak	Small	Medium	Weak	3	Medium
25: Assateague Island, Toms Cove Visitor Center	39.7 (64.0)	19.7° (15.9%)	<0.1° (<0.1%)	B, N, OL	Strong	Strong	Medium	Medium	Medium	Strong	Medium	1	Negligible
State Route 24 (Onshore Substation)	1.0 (1.6)	8.2° (6.6%)	ND	Onshore components	Weak	Weak	Weak	Weak	Small	Weak	Weak	2	Small
Theoretical Offshore Location	Varies	Varies	Varies	B, E, N, NL, OL, T, Y	Strong	Strong	Strong	Strong	Strong	Strong	Strong	6	Large

B = WTG blades; E = electrical service platform; FOV = field of view; km = kilometers; KOP = key observation point; N = nacelle; ND = no data; NL = navigation light; OL = nacelle-top obstruction lights; S = Phase 1 onshore substation; T = WTG tower; VIA = visual impact assessment; WTG = wind turbine generator; Y = yellow foundation transition piece

[a] This is the distance to nearest Project WTG, except for the State Route 24 KOP, which measures the distance to the Project's onshore substation sites.

[b] The horizontal human FOV is approximately 124 degrees, while the vertical FOV is approximately 55 degrees (Sullivan 2021)

[c] This is as defined in Table H-11 (Sullivan et al. 2012)

[d] Noticeable elements for offshore viewers would vary based on the location of the viewer relative to the offshore wind projects. Based on the likely sizes of WTGs (Table H-7), all elements of an individual WTG would be visible within approximately 10.5 miles of that WTG position. Visibility rating reflects closest possible views (i.e., adjacent to or within the WTG array), but could range from 1 to 6 depending on the viewer's location.

Visual contrast determinations involve comparisons of characteristics of the seascape, open ocean, and landscape before and after Project implementation. The range of potential contrasts includes strong, moderate, weak, and none (Sullivan 2021). To support the VIA for the Project, three Environmental Resources Management visual resource subject matter experts reviewed the simulations and applied a visibility rating system (Sullivan et al. 2012; Table H-11) to assess the visibility of the Project (as well as other offshore wind projects, as described in Section H.4.4), based on the US Wind's simulations, assuming clear conditions. The subject matter experts reviewed each simulation, assigned a rating, and reviewed as a group to reach consensus.

The strongest daytime contrasts would result from tranquil and flat seas combined with sunlit WTG towers, nacelles, rotating and flickering rotors, and a yellow tower base color against a dark background sky and an undifferentiated foreground. There would be daily variation in WTG color contrast as sun angles change from backlit to front-lit (sunrise to sunset) and the backdrop would vary under different lighting and atmospheric conditions. The weakest daytime contrasts would result from turbulent seas combined with overcast daylight conditions on WTG towers, nacelles, and rotors against an overcast background sky and a foreground occupied by varied landscape elements. The strongest nighttime contrasts would result from dark skies (absent moonlight) combined with navigation lights; activated lighting on the OSS, mid-tower lights, and nacelle-top lights (with ADLS activation) reflecting off of low clouds and calm (reflective) surf; and the dark-sky light dome. The weakest nighttime contrasts would result from moonlit, cloudless skies; tranquil (reflective) seas; ADLS activation; and only mid-tower lights.

Higher impact levels would stem from the unique, extensive, and long-term appearance of strongly contrasting, large, and prominent vertical structures in the otherwise horizontal seascape environment. In these locations, structures are an unexpected element and viewers are accustomed to open views of high-sensitivity seascape and landscape; and from high-sensitivity view receptors. Decommissioning impacts would be the same as construction, with WTG and OSS infrastructure progressively removed over time.

Due to its location, the onshore substation would not affect any of the KOPs except for the onshore KOP location. Viewers in this area have a medium sensitivity. The onshore substation would be adjacent to an existing energy substation site and would not be publicly accessible. Views from most nearby lands, especially neighborhoods, are screened by existing trees. The proposed substation features repeat the character of the existing substation and the nearby power plant. Due to the limited magnitude and geographic extent of the onshore substation components, as well as the relatively low level of contrast (due to the presence of similar electrical system infrastructure immediately adjacent), the substation would have minor visual impacts.

Table H-11. Visibility rating form and instructions

Visibility Rating	Description
VISIBILITY LEVEL 1: visible only after extended, close viewing; otherwise, invisible.	An object/phenomenon that is near the extreme limit of visibility. It could not be seen by a person who was not aware of it in advance and looking for it. Even under those circumstances, the object can only be seen after looking at it closely for an extended period of time.
VISIBILITY LEVEL 2: visible when scanning in general direction of study subject; otherwise, likely to be missed by casual observer.	An object/phenomenon that is very small and/or faint, but when the observer is scanning the horizon or looking more closely at an area, can be detected without extended viewing. It could sometimes be noticed by a casual observer; however, most people would not notice it without some active looking.
VISIBILITY LEVEL 3: visible after brief glance in general direction of study subject and unlikely to be missed by casual observer.	An object/phenomenon that can be easily detected after a brief look and would be visible to most casual observers, but without sufficient size or contrast to compete with major landscape elements.
VISIBILITY LEVEL 4: plainly visible, could not be missed by casual observer, but does not strongly attract visual attention, or dominate view because of apparent size, for views in general direction of study subject.	An object/phenomenon that is obvious and with sufficient size or contrast to compete with other landscape elements, but with insufficient visual contrast to strongly attract visual attention and insufficient size to occupy most of the observer's visual field.
VISIBILITY LEVEL 5: strongly attracts visual attention of views in general direction of study subject. Attention may be drawn by strong contrast in form, line, color, or texture, luminance, or motion.	An object/phenomenon that is not of large size, but that 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 viewer 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 nearby landscape elements.

Visibility Rating	Description
VISIBILITY LEVEL 6: dominates view because study subject fills most of visual field for views in its general direction. strong contrasts in form, line, color, texture, luminance, or motion may contribute to view dominance.	An object/phenomenon with strong visual contrasts that is of such large size that it occupies most of the visual field, and views of it cannot be avoided except by turning the 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 study subject detracts noticeably from views of other landscape elements.

Source : Sullivan et al. 2012

The onshore O&M facility would not affect any of the KOPs. A formal visual impact analysis on this facility has not been included because the O&M facility location has not been publicly identified. In general, viewer sensitivity is likely to be limited in the existing maritime industrial areas near Ocean City. The O&M facility is likely to have limited geographic extent and a relatively low level of contrast (due to the presence of similar maritime industrial activities nearby). Therefore, the O&M facility is likely to have minor visual impacts. This evaluation will be revised as part of the Final EIS for the Project, once the specific location of the O&M facility is identified.

Project construction and operations vessel traffic (including maintenance) activities would cause minor visual effects for KOPs with ocean views due to increased operations vessel traffic. Vessel activity would be noticeable in offshore views but indistinguishable from most other offshore vessel activity, and thus would not have a significant visual impact. Decommissioning would involve the removal of all offshore structures and would follow the reverse of construction activity. Decommissioning activities would therefore cause visual effects similar to those of construction activities but of shorter duration.

Table H-12 provides the viewer sensitivity component ratings and combines viewer sensitivity with impact magnitude to identify the overall visual impact at each KOP. Viewer sensitivity is based on the viewer types (as defined in Section H.3.3) typically present at each KOP.

Table H-12. Visual impact levels, Project, Alternative B

KOP	User Groups	Receptor Sensitivity			Impact Magnitude	VIA Impact Rating
		Susceptibility	Value	Sensitivity		
3: Assateague Island National Seashore; Assateague Island	Tourists	High	High	High	Large	Major
4: Mansion House NRHP and Public Landing	Tourists, Residents	High	High	High	Small	Moderate
6: 84th Street Beach, Isle of Wight Life Saving Station; Ocean City	Tourists, Residents	High	High	High	Large	Major
15: Bethany Beach Boardwalk and Wreck Site; Bethany Beach	Tourists, Residents	High	High	High	Large	Major
18 Ocean City Pier, Atlantic Hotel; Ocean City	Tourists, Residents	High	High	High	Large	Major
19: Indian River Life Saving Station; Rehoboth Beach	Tourists, Residents	High	High	High	Medium	Major
20: Delaware Seashore State Park	Tourists, Residents	High	High	High	Medium	Major
21: Cape May Lighthouse, Cape May, NJ	Tourists, Residents	High	High	High	Small	Moderate
22: Fort Miles Historic District, Cape Henlopen State Park	Tourists	High	High	High	Medium	Major
23: Wildwood Boardwalk; Wildwood	Tourists, Residents	High	High	High	Small	Moderate
24: Rehoboth Beach Boardwalk	Tourists, Residents	High	High	High	Medium	Major
25: Assateague Island, Toms Cove Visitor Center	Tourists	High	High	High	Negligible	Minor
State Route 24 (Onshore Substation)	Residents	Medium	Medium	Medium	Small	Minor
Theoretical Offshore Location	Tourists, Residents, Commercial Mariners	High	High	High	Large	Major

KOP = key observation point; VIA = visual impact assessment

H.5.2 Impacts of Alternative D – No Surface Occupancy to Reduce Visual Impacts

This alternative would result in the exclusion of 32 WTG positions and 1 OSS within 14 miles (22.5 kilometers) of shore associated with the future development phase (Figure H-5). Under Alternative D, the noticeable elements of the Project would be the same as for Alternative B (Table H-8), except that navigation lights at the top of the WTG and OSS foundations would not be visible from shore (the Beaches LSZ) due to distance. The SLIA and VIA discussions below are based on simulations of the alternatives provided by US Wind (COP Appendix II-J1; US Wind 2023).

Eliminating the 32 WTG positions closest to shore would marginally reduce seascape/landscape impacts in all LSZs. Within LSZs with direct ocean views (Developed – High Intensity, Developed – Medium Intensity, Beaches, and Low Vegetation) the removal of these positions would perceptibly reduce the scale of the offshore Project facilities, but would not change the impact magnitude components or ratings provided for Alternative B in Section H.4.1.1.

The user groups and receptor sensitivity components for the KOPs would be the same under Alternative D as described for Alternative B (Section H.4.1.2). US Wind provided simulations of Alternative D for KOPs 3, 6, 15, and 18 (reflecting views from the closest beaches in Virginia, Maryland, and Delaware). Eliminating the 32 positions closest to shore would essentially set the wind turbines approximately 3 to 4 miles (4.8 to 6.4 kilometers) further from shore marginally reducing the perceived size and scale of the project from all KOPs (including the beach KOPs included in Alternative D simulations) but would not change the impact magnitude components or ratings provided for Alternative B in Section H.4.1.2.

H.5.3 Impacts of Alternative E – Habitat Impact Minimization Alternative

This alternative would result in the removal of up to 11 WTG positions within the southern portion of the Lease Area (Figure H-6). While the exclusion of these WTG positions would marginally reduce impacts on seascape/landscape and visual impacts (compared to Alternative B), the elements of seascape/landscape impact (Tables H-8 and H-9) and visual impact (Tables H-10 and H-12) would remain unchanged. Therefore, the seascape/landscape and visual impacts of Alternative E would be substantively the same as for the Proposed Action, as described in Section H.4.1.

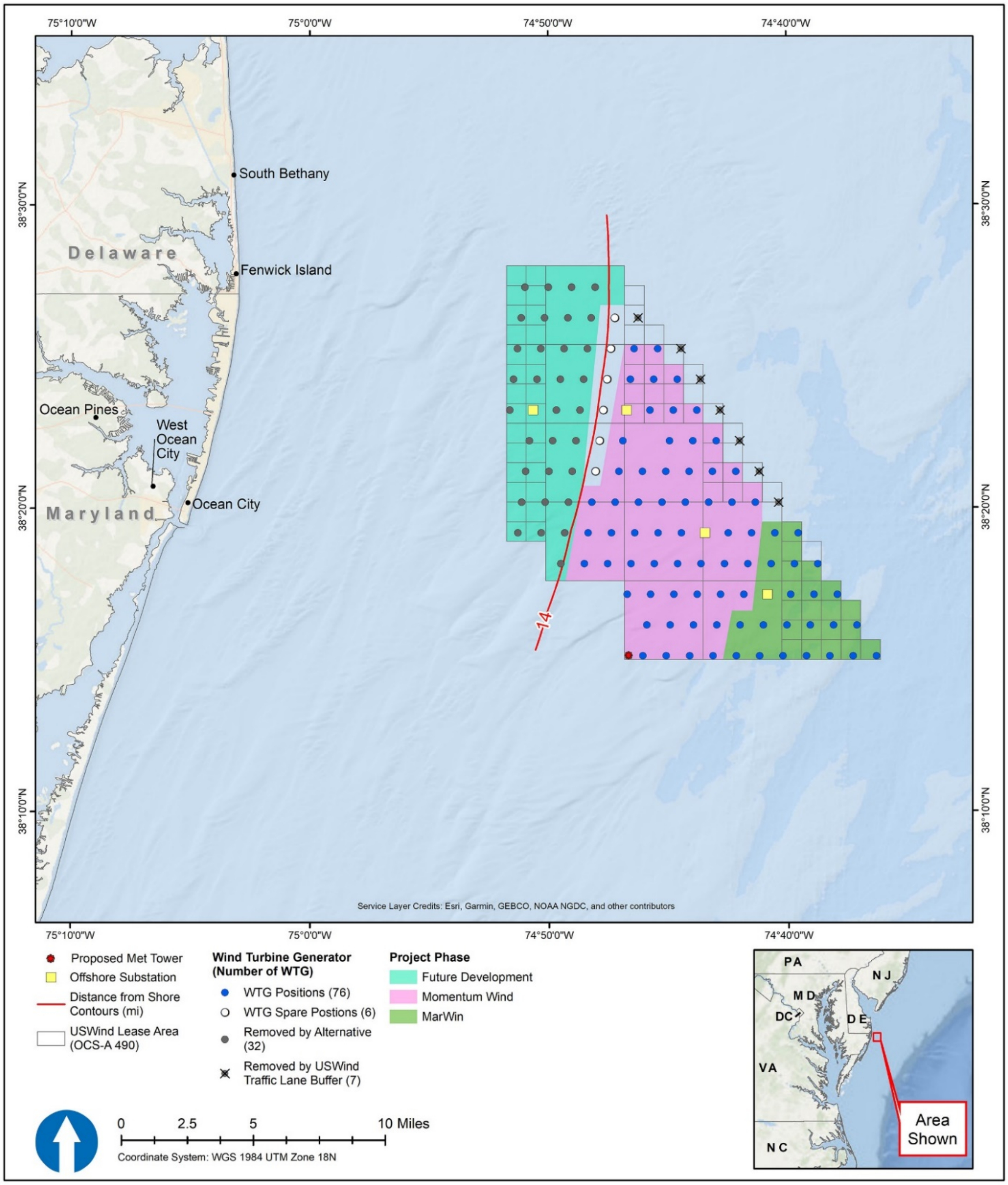


Figure H-5. Layout of WTG and OSS positions in Alternative D – Viewshed Alternative

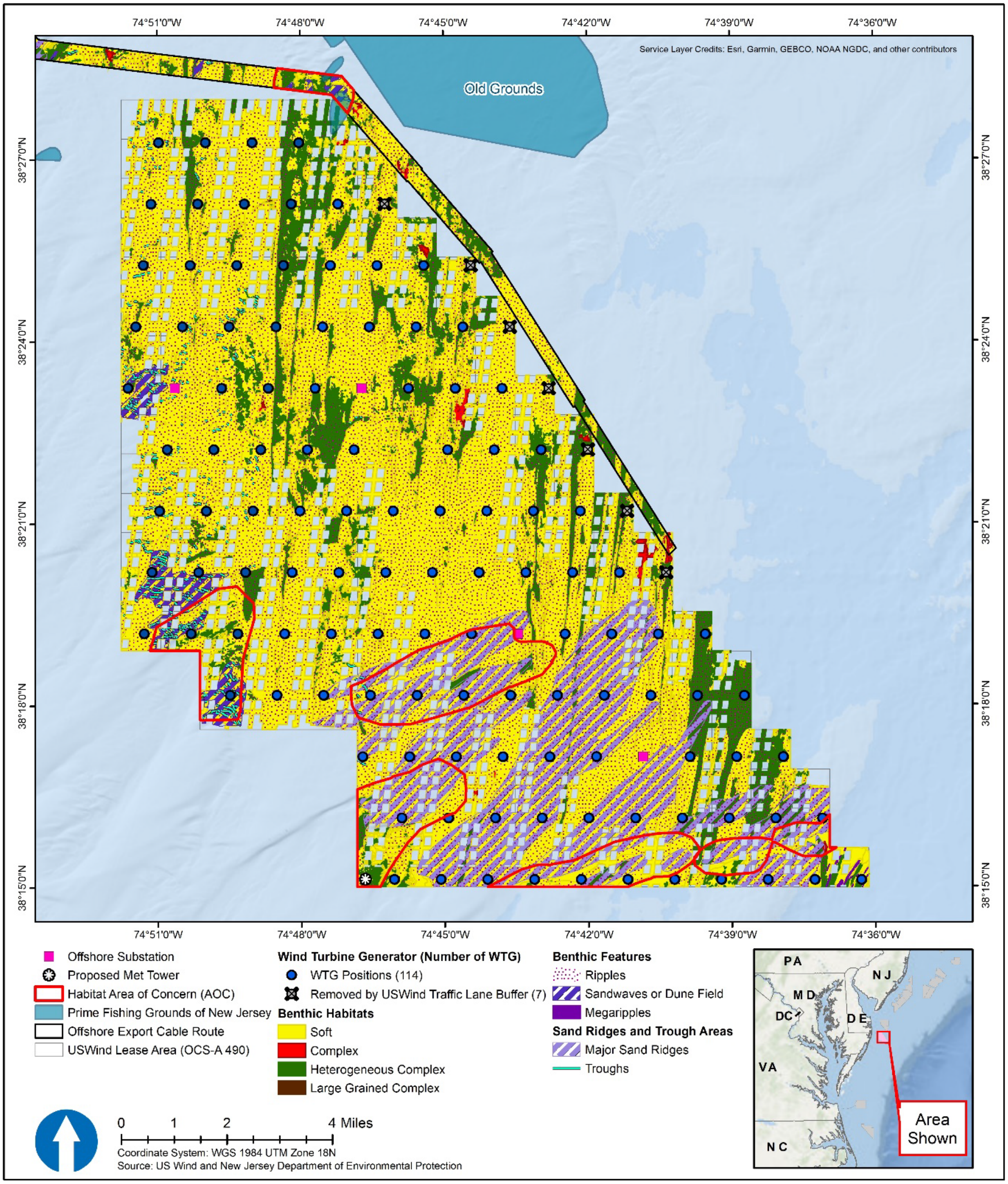


Figure H-6. Alternative E – Habitat Impact Minimization Alternative

H.5.4 Cumulative Impacts

This section evaluates cumulative seascape, landscape, and visual impacts of ongoing and planned activities—specifically offshore wind projects that have been approved (ongoing activities) or proposed (planned activities)—in combination with the Project. This section focuses on cases where WTGs and OSS from multiple projects would be visible simultaneously from seascape, open ocean, or landscape units as overlapping or adjacent features and elements. It also addresses impacts on viewers observing multiple projects simultaneously. Table H-13 provides characteristics for the other offshore wind projects in the RI/MA Lease Areas.

Table H-13. Wind turbine generator capacity and height assumptions

Project (Lease Area)	Blade Tip Height Feet (meters)[a]	Top of Nacelle Height Feet (meters)[a]	Total WTGs	WTGs within 43 mi (69 km)[b]
Garden State Offshore Energy (OCS-A 0482) and Skipjack Wind II (OCS-A 0519)[c]	853 (260)	506 (154)	94	94
Skipjack Wind I (OCS-A 0519)[c]	853 (260)	506 (154)	16	16
Ocean Wind 1 (OCS-A 0498)	906 (276)	525 (160)	98	98
Ocean Wind 2 (OCS-A 0532)[c]	906 (276)	525 (160)	109	109
Atlantic Shores South (OCS-A 0499)	1,047 (319)	590 (180)	136	136
Atlantic Shores North (OCS-A 0549)[c]	1,047 (319)	590 (180)	157	34
US Wind (OCS-A 0490)	938 (286)	546 (166)	114	114
Total			724	601

km = kilometer; mi = miles; MLLW = mean lower low water level; WTG = wind turbine generator
[a] Elevation above MLLW with the WTG blade at its maximum vertical extension.
[b] Indicates the number of WTGs within 43 miles (69 km) of the shoreline within the geographic analysis area.
[c] No COP had been submitted for these projects at the time that modeling was performed for this assessment. Blade tip and nacelle-top heights reflect BOEM assumptions based on adjacent projects or industry practices.

Table H-14 describes the closest distance from each other offshore wind project to each LSZ, noticeable elements, and the components of SLIA magnitude for the other offshore wind projects. In all cases, the Project WTGs would be entirely within the horizontal FOV of at least one other offshore wind project. As with the Project alone, the horizontal FOV from any single viewpoint within a seascape or landscape unit can vary; therefore, Table H-16 provides the maximum FOV extent for onshore seascape and landscape units.

Table H-15 summarizes the closest distances from each from each other offshore wind project to each KOP, noticeable elements, and the components of VIA magnitude for the other offshore wind projects elements of other offshore wind projects. US Wind provided cumulative simulations from KOPs 3 (Assateague Island National Seashore), 6 (Ocean City 84th Street Beach), 15 (Bethany Beach), 18 (Ocean City Boardwalk), 20 (Delaware Seashore State Park), and 21 (Cape May Lighthouse)—see Attachment H-3. These simulations were used as the basis for identifying the components of impact magnitude from all KOPs, including those where cumulative simulations were not prepared.

Table H-16 summarizes SLIA sensitivity, impact magnitude from the Project alone, the other offshore wind projects without the Project, and the cumulative impacts of all visible offshore wind projects and provides the cumulative SLIA impact rating for each LSZ. Table H-17 provides the same sensitivity and magnitude analysis for VIA impact ratings at each KOP. Overall, the magnitude of impacts of other offshore wind projects (excluding the Project) would be larger than the Project alone for LSZs and observers in New Jersey and northern coastal portions of Delaware, and smaller than the Project alone in Maryland and Virginia.

The location of onshore facilities associated with all of the other projects have not been determined. For purposes of this analysis, BOEM assumes that visible onshore facilities of the other offshore wind projects would be geographically separate from those for the Project; therefore, the contributions of the other projects to the cumulative landscape and visual impacts of the Project's onshore facilities would be minimal.

Table H-14. Characteristics and seascape/landscape impacts of other offshore wind projects

LSZ	Distance, miles (km)[a]						Noticeable Elements	Components of Seascape/Landscape Impact[c]		Impact Magnitude
	GSOE/ SW-II	SW-I	OW1	OW2	AS-S	AS-N		Geographic Extent	Size and Scale	
Atlantic Ocean	Varies	Varies	Varies	Varies	Varies	Varies	B, E, N, NL, OL, T, Y	Large	Large	Large
Inland Open Water	13.2 (21.2)	19.2 (30.9)	18.4 (29.6)	11.9 (19.2)	27.0 (43.5)	37.3 (60.0)	B, N, OL, T	Small	Small	Small
Forest	13.2 (21.2)	19.1 (30.7)	18.7 (30.1)	14.9 (24.0)	27.3 (43.9)	37.7 (60.7)	B, N, OL, T	Small	Small	Small
Agricultural Land	13.9 (22.4)	19.9 (32.0)	21.7 (34.9)	15.3 (24.6)	30.3 (48.8)	40.6 (65.3)	B, N, OL, T	Small	Small	Small
Developed Open Space	13.1 (21.1)	19.1 (30.7)	18.0 (29.0)	11.6 (18.7)	27.3 (43.9)	37.9 (61.0)	B, N, OL, T	Small	Small	Small
Wetlands	13.2 (21.2)	19.1 (30.7)	18.3 (29.5)	12.0 (19.3)	27.1 (43.6)	37.4 ()60.2	B, E, N, NL, OL, T, Y	Small	Small	Small
Developed – High Intensity	13.0 (20.9)	18.9 (30.4)	17.9 (28.8)	11.5 (18.5)	26.6 (42.8)	37.0 (59.5)	B, E, N, OL	Small to Large	Large	Large
Developed – Medium Intensity	13.0 (20.9)	18.9 (30.4)	17.9 (28.8)	11.5 (18.5)	26.6 (42.8)	37.0 (59.5)	B, E, N, OL	Small to Large	Large	Large
Developed – Low Intensity	13.0 (20.9)	18.9 (30.4)	18.2 (29.3)	11.8 (19.0)	27.3 (43.9)	37.8 (60.8)	B, E, N, NL, OL, T, Y	Small	Small	Small
Beaches	13.0 (20.9)	18.8 (30.3)	17.8 (28.6)	11.3 (18.2)	26.5 (42.6)	36.9 (59.2)	B, E, N, OL	Large	Large	Large
Low Vegetation	13.1 (21.1)	19.6 (31.5)	18.7 (30.1)	12.0 (19.3)	28.4 (45.7)	39.0 (62.8)	B, E, N, NL, OL, T, Y	Large	Large	Large

AS-N = Atlantic Shores North project; AS-S = Atlantic Shores South project; B = WTG blades; BVR = beyond visual range (more than 43 miles from the LSZ); E = electrical service platform; FOV = field of view; GSOE = Garden State Offshore Energy project; LSZ = landscape similarity zone; N = nacelle; NA = not applicable; NL = navigation light; OL = nacelle-top obstruction lights; OW1 = Ocean Wind 1 project; OW2 = Ocean Wind 2 project; SW-I = Skipjack Wind I project; SW-II = Skipjack Wind II project; T = WTG tower; WTG = wind turbine generator; Y = yellow foundation transition piece

[a] This is the distance to nearest WTG, except for the State Route 24 KOP, which measures the distance to the Project's onshore substation sites

[b] The human FOV is 124 degrees (Sullivan 2021)

[c] All offshore wind projects have a long-term duration and are fully reversible.

Table H-15. Characteristics and visual impacts of other offshore wind projects

KOP	Distance, miles (km)[a] GSOE/ SW-II	SW-I	OW1	OW2	AS-S	AS-N	FOV Degrees (Percent of 124)[b]	Noticeable Elements	Components of Visual Impact Form	Line	Color	Texture	Scale	Contrast	Motion	Visibility[c]	Impact Magnitude
3	35.3 (56.8)	35.0 (56.3)	BVR	BVR	BVR	BVR	56.3 (45.4)	B, N, OL, T	Weak	Weak	Weak	Weak	Small	Weak	Weak	2	Small
4	42.3 (68.1)	42.2 (67.9)	BVR	BVR	BVR	BVR	47.1 (38.0)	B, N, OL	Weak	Weak	Weak	Weak	Small	Weak	Weak	2	Small
6	21.4 (34.4)	21.9 (35.2)	BVR	BVR	BVR	BVR	94.0 (75.8)	B, E, N, OL, T	Medium	Medium	Medium	Weak	Medium	Medium	Medium	4	Medium
15	15.7 (25.3)	18.9 (30.4)	BVR	42.1 (67.8)	BVR	BVR	100.7 (81.2)	B, E, N, OL, T	Strong	Strong	Moderate	Weak	Medium	Strong	Strong	5	Large
18	25.9 (41.7)	25.9 (41.7)	BVR	BVR	BVR	BVR	79.9 (64.4)	B, E, N, OL, T	Medium	Medium	Weak	Weak	Medium	Medium	Medium	3	Medium
19	13.6 (21.9)	20.2 (32.5)	BVR	39.0 (62.8)	BVR	BVR	106.7 (86.0)	B, E, N, OL, T	Medium	Medium	Medium	Weak	Medium	Medium	Medium	4	Medium
20	13.0 (20.9)	21.3 (34.3)	BVR	37.7 (60.7)	BVR	BVR	107.0 (86.3)	B, E, N, OL, T	Medium	Medium	Medium	Weak	Medium	Medium	Medium	4	Medium
21	15.9 (25.6)	29.3 (47.2)	33.9 (54.6)	25.9 (41.7)	BVR	BVR	115.8 (93.4)	B, N, OL, T	Strong	Strong	Medium	Medium	Medium	Strong	Strong	5	Large
22	13.9 (22.4)	24.9 (40.1)	BVR	36.3 (58.4)	BVR	BVR	103.8 (83.7)	B, N, OL, T	Medium	Medium	Medium	Weak	Medium	Medium	Medium	4	Medium
23	17.0 (27.4)	29.5 (47.5)	25.6 (41.2)	17.7 (28.5)	36.9 (59.4)	BVR	124 (100)	B, N, OL	Medium	Medium	Medium	Weak	Medium	Medium	Medium	4	Medium
24	13.2 (21.2)	22.8 (36.7)	BVR	37.0 (59.5)	BVR	BVR	106.1 (85.6)	B, N, OL, T	Strong	Strong	Medium	Weak	Medium	Strong	Strong	5	Large
25	32.3 (52.0)	32.2 (51.8)	BVR	BVR	BVR	BVR	61.4 (49.5)	B, N, OL	Medium	Medium	Weak	Weak	Medium	Medium	Medium	1	Negligible
Onshore	NA	NA	NA	NA	NA	NA	8.3 (6.7)	NA	Weak	Weak	Weak	Weak	Small	Weak	Weak	1	Small
Offshore[d]	Varies	Varies	Varies	Varies	Varies	Varies	Up to 124 (100)	B, E, N, NL, OL, T, Y	Strong	Strong	Strong	Strong	Strong	Strong	Strong	6	Large

AS-N = Atlantic Shores North project; AS-S = Atlantic Shores South project; B = WTG blades; BVR = beyond visual range (more than 43 miles from the KOP); E = electrical service platform; FOV = field of view; GSOE = Garden State Offshore Energy project; KOP = key observation point; N = nacelle; NA = not applicable; NL = navigation light; OL = nacelle-top obstruction lights; OW1 = Ocean Wind 1 project; OW2 = Ocean Wind 2 project; SW-I = Skipjack Wind I project; SW-II = Skipjack Wind II project; T = WTG tower; WTG = wind turbine generator; Y = yellow foundation transition piece

[a] This is the distance to nearest WTG, except for the State Route 24 KOP, which measures the distance to the Project's onshore substation sites.

[b] The human FOV is 124 degrees (Sullivan 2021).

[c] As defined in Table H-11 (Sullivan et al. 2012).

[d] Noticeable elements for offshore viewers would vary based on the location of the viewer relative to the offshore wind projects. Visibility rating reflects closest possible views (i.e., adjacent to or within the WTG array) but could range from 1 to 6 depending on the viewer's location.

Table H-16. Cumulative seascape/landscape impacts of the Project and other Offshore Wind Projects

LSZ	LSZ Sensitivity (Table H-9)	Project SLIA Magnitude (Table H-9)	Other Offshore Wind Project SLIA Magnitudes (Table H-16)	Cumulative SLIA Magnitude	Overall SLIA Impact Rating
Atlantic Ocean	High	Large	Large	Large	Major
Inland Open Water	Medium	Small	Small	Small	Minor
Forest	High	Small	Small	Small	Negligible
Agricultural Land	High	Small	Small	Small	Negligible
Developed Open Space	High	Small	Small	Small	Negligible
Wetlands	High	Small	Small	Small	Negligible
Developed – High Intensity	Medium to High	Large	Large	Large	Major
Developed – Medium Intensity	Medium to High	Large	Large	Large	Major
Developed – Low Intensity	High	Small	Small	Small	Negligible
Beaches	High	Medium to High	Large	Large	Major
Low Vegetation	High	Medium	Large	Large	Major

LSZ = landscape similarity zone; SLIA = seascape/landscape impact assessment

Table H-17. Cumulative visual impacts of the Project and other Offshore Wind Projects

KOP	Receptor Sensitivity (Table H-12)	Proposed Project Impact Magnitude (Table H-10)	Other Offshore Wind Project Magnitudes (Table H-17)	Cumulative Impact Magnitude	Overall Cumulative Impact
3: Assateague Island National Seashore; Assateague Island 3	High	Large	Small	Large	Major
4: Mansion House NRHP and Public Landing 4	High	Small	Small	Medium	Major
6: 84th Street Beach, Isle of Wight Life Saving Station; Ocean City22	High	Large	Medium	Large	Major
15: Bethany Beach Boardwalk and Wreck Site; Bethany Beach 15	High	Large	Large	Large	Major
18 Ocean City Pier, Atlantic Hotel; Ocean City 1	High	Large	Medium	Large	Major
19: Indian River Life Saving Station; Rehoboth Beach 19	High	Medium	Medium	Large	Major
20: Delaware Seashore State Park 20	High	Medium	Medium	Large	Major
21: Cape May Lighthouse, Cape May, NJ24	High	Small	Large	Large	Major
22: Fort Miles Historic District, Cape Henlopen State Park 25	High	Medium	Medium	Medium	Major
23: Wildwood Boardwalk, Wildwood	High	Small	Medium	Medium	Minor
24: Rehoboth Beach Boardwalk 28	High	Medium	Large	Large	Major
25: Assateague Island, Toms Cove Visitor Center2	High	Negligible	Negligible	Negligible	Minor
State Route 24 (Onshore Substation)	Medium	Small	Small	Small	Negligible
Theoretical Offshore Location	High	Large	Large	Large	Major

KOP = key observation point

H.5.5 Conclusions

Sensitivity to seascape/landscape change and to visual contrast in the geographic analysis area is generally high for LSZs and observation points in coastal areas and on the open waters of the Atlantic Ocean. Sensitivity is lower for LSZs and viewpoints further inland. Overall, the Project's offshore components would have negligible to major seascape/landscape impacts and minor to major visual impacts. Due to relatively close view distances and the fundamentally different character of offshore wind structures, LSZs closest to (and within) the Atlantic Ocean would generally experience major seascape/landscape impacts, while LSZs further inland would experience lower impact levels. Similarly, the fundamentally different form, line, and motion of the Project facilities would result in major visual impacts at KOPs along the coast in Virginia, Maryland, and Delaware. Other KOPs and inland areas would experience generally minor visual impacts.

Portions of up to seven other offshore wind projects would be visible from the LSZs and KOPs evaluated in this SLVIA document. In views from New Jersey, the other offshore wind projects would be the dominant offshore wind features in the cumulative view, and in some cases would all but obscure the visible evidence of the Project. In Delaware, the Project and other projects (especially Garden State Offshore Energy and Skipjack Wind I and II) would contribute comparable impact magnitudes. The Project's components would be the dominant offshore wind facilities in views from Maryland and Virginia. Overall, the cumulative seascape/landscape and visual impacts of the Project in combination with other offshore wind projects would range from minor to major, with major impacts occurring for LSZs and KOPs at or near the Atlantic Ocean coast (as well as within the Atlantic Ocean itself).

Considering all of the impact producing factors together, BOEM anticipates that the contribution of the Project to the impacts associated with ongoing and planned activities in combination with other future offshore wind development would be major. The main drivers for this impact rating are the major visual impacts associated with the presence of onshore equipment and WTGs, lighting, and offshore vessel traffic.

H.6 References

BOEM (Bureau of Ocean Energy Management). 2022. *Ocean Wind 1 Offshore Wind Farm Draft Environmental Impact Statement*. OCS EIS/EA BOEM 2022-021. June 2022. Accessed September 30, 2022. Retrieved from: https://www.boem.gov/renewable-energy/state-activities/ocean-wind-1

Capitol Airspace Group. 2023. US Wind Offshore Wind Project Aircraft Detection Lighting System (ADLS), Efficacy Analysis. Construction and Operations Plan Appendix II-J1, Attachment E. 31 March 2023.

Delaware DNREC (Department of Natural Resources and Environmental Control). 2021. Delaware Coastal Management Program Section 309 Enhancement Program 2021-2025 Assessment and Strategy. Available online at https://documents.dnrec.delaware.gov/coastal/Delaware-309-2021-2025-A-and-S.pdf. Accessed May 26, 2023.

Delaware DNREC (Department of Natural Resources and Environmental Control). 2023. Delaware Coastal Management Program. Available online at: https://dnrec.alpha.delaware.gov/coastal-programs/coastal-management/. Accessed May 26, 2023.

Delaware DOT (Department of Transportation). 2023. Delaware Byways, Historic Lewes Byway, Gateway to the Bayshore. Available online at: https://deldot.gov/Programs/byways/index.shtml?dc=lewes. Accessed May 26, 2023

FHWA (Federal Highway Administration). 2023. National Scenic Byways & All-American Roads. Available online at: https://fhwaapps.fhwa.dot.gov/bywaysp. Accessed May 26, 2023.

Maryland DNR (Department of Natural Resources). 2023. Maryland Coastal Consistency Review. Available online at https://mde.maryland.gov/programs/Water/WetlandsandWaterways/Pages/CZM.aspx. Accessed May 26, 2023.

Maryland Office of Tourism. 2023. Cape to Cape. Available online at: https://www.visitmaryland.org/scenic-byways/cape-to-cape. Accessed May 26, 2023.

NOAA (National Oceanic and Atmospheric Administration). 2023. Office for Coastal Management: *Coastal Zone Management Act.* Available online at: https://coast.noaa.gov/czm/act/. Accessed May 26, 2023.

New Jersey DEP (Department of Environmental Protection). 2020. New Jersey Coastal Management Program Section 309 Assessment & Strategy, 2021-2025. Available at: https://www.nj.gov/dep/cmp/docs/309-assessment-and-strategy-2021-2025.pdf Accessed May 26, 2023.

New Jersey DOT. 2013. New Jersey Scenic Byways Program Guidebook. Available online at https://www.state.nj.us/transportation/community/scenic/pdf/2013guidebook.pdf. Accessed May 26, 2023.

New Jersey DOT. 2014. The Bayshore Heritage Byway Corridor Management Plan. Available online at https://www.state.nj.us/transportation/community/scenic/pdf/bhbcmp.pdf. Accessed May 26, 2023.

Rath, W.R., C.P. Kelly, and K.A. Beahm. 2018. *Oceanfront State Coastal Management Program*. Law and Policy White Paper Series. Center for Energy and Environmental Law, UCONN School of Law, May 1. Available online at: https://circa.uconn.edu/wp-content/uploads/sites/1618/2018/03/Oceanfront-State-Coastal-Management-Programs.pdf. Accessed May 26, 2023.

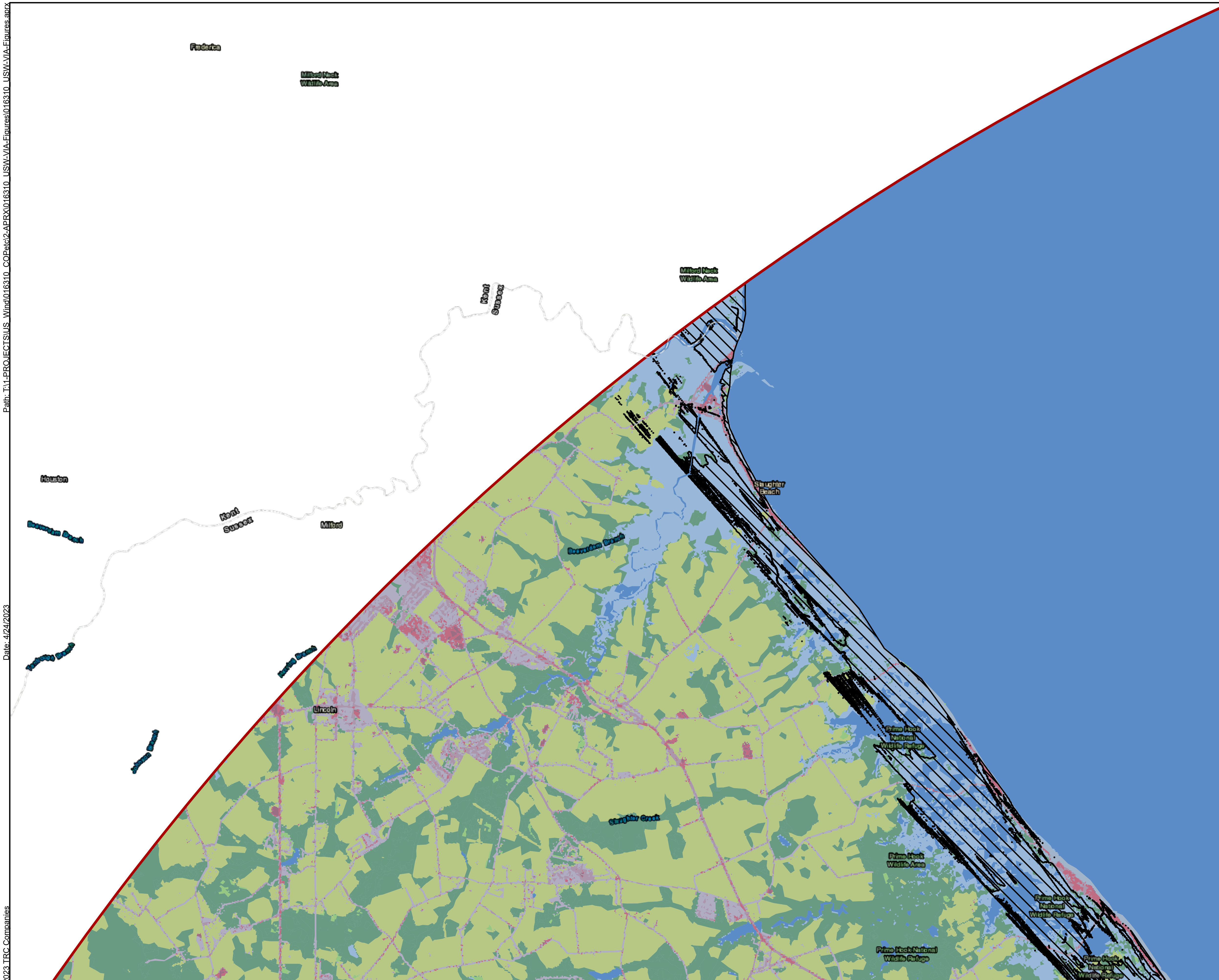
Sullivan, R.G., L.B. Kirchler, T. Lahti, S. Roche, K. Beckman, B. Cantwell, and P. Richond. 2012. *Wind Turbine Visibility and Visual Impact Threshold Distances in Western Landscapes*. In: Proceedings, National Association of Environmental Professionals, 37th Annual Conference, May 21–24, 2012, Portland (OR). Accessed: August 25, 2022. Retrieved from: http://docs.wind-watch.org/WindVITD.pdf

Sullivan, R. 2021. *Assessment of Seascape, Landscape, and Visual Impacts of Offshore Wind Energy Developments on the Outer Continental Shelf of the United States*. OCS Study BOEM 2021-032. Accessed: April 28, 2022. Retrieved from: https://www.boem.gov/sites/default/files/documents/environment/environmental-studies/BOEM-2021-032.pdf

US Wind. 2023. Construction and Operations Plan: Maryland Offshore Wind Project. July 2023. TRC Companies. Waltham (MA). 2 vols + appendices. https://www.boem.gov/renewable-energy/state-activities/us-wind-construction-and-operations-plan.

Virginia DEQ (Department of Environmental Quality). 2023. Coastal Zone Management. Available online at: https://www.deq.virginia.gov/coasts/coastal-zone-management. Accessed May 26, 2023.

Attachment H-1. Viewshed Maps of the Project



Maryland Offshore Wind Project
Offshore Maryland and Delaware

Figure 5
Sheet 1 of 12

Landscape Similarity Zones

Legend

- Selected Simulation Location
- Potential Turbine Blade Visibility (43 mi)

LSZ

- Open Water
- Forest and Forested Wetlands
- Agriculture
- Developed, Open Space
- Wetlands
- Developed, Low Intensity
- Developed, Medium Intensity
- Developed High Intensity
- Beach
- Shrub/Scrub and Grasslands

0 0.5 1 2 Miles
0 1 2 4 Kilometers

Source: 1) BOEM, Lease Area, 2013
2) TNC, Secured Lands, 2015
3) DE Dept. of Agriculture, State Forests, 2021
4) R. Christopher Goodwin & Associates, Inc., Historic Resources, 2022

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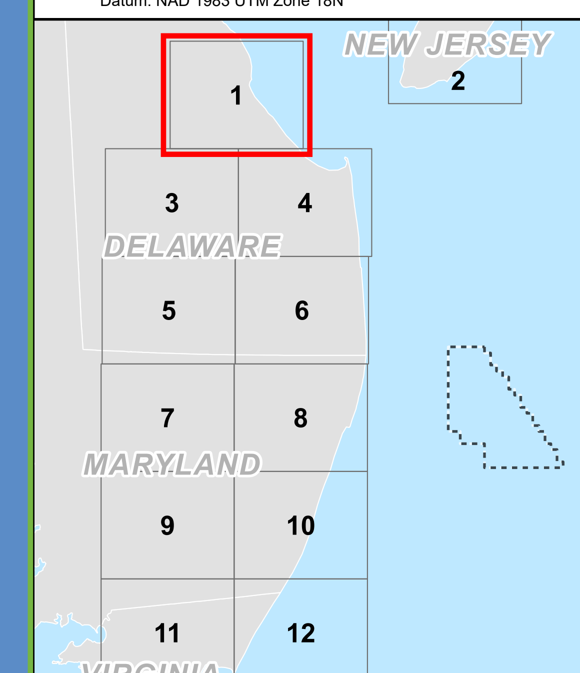

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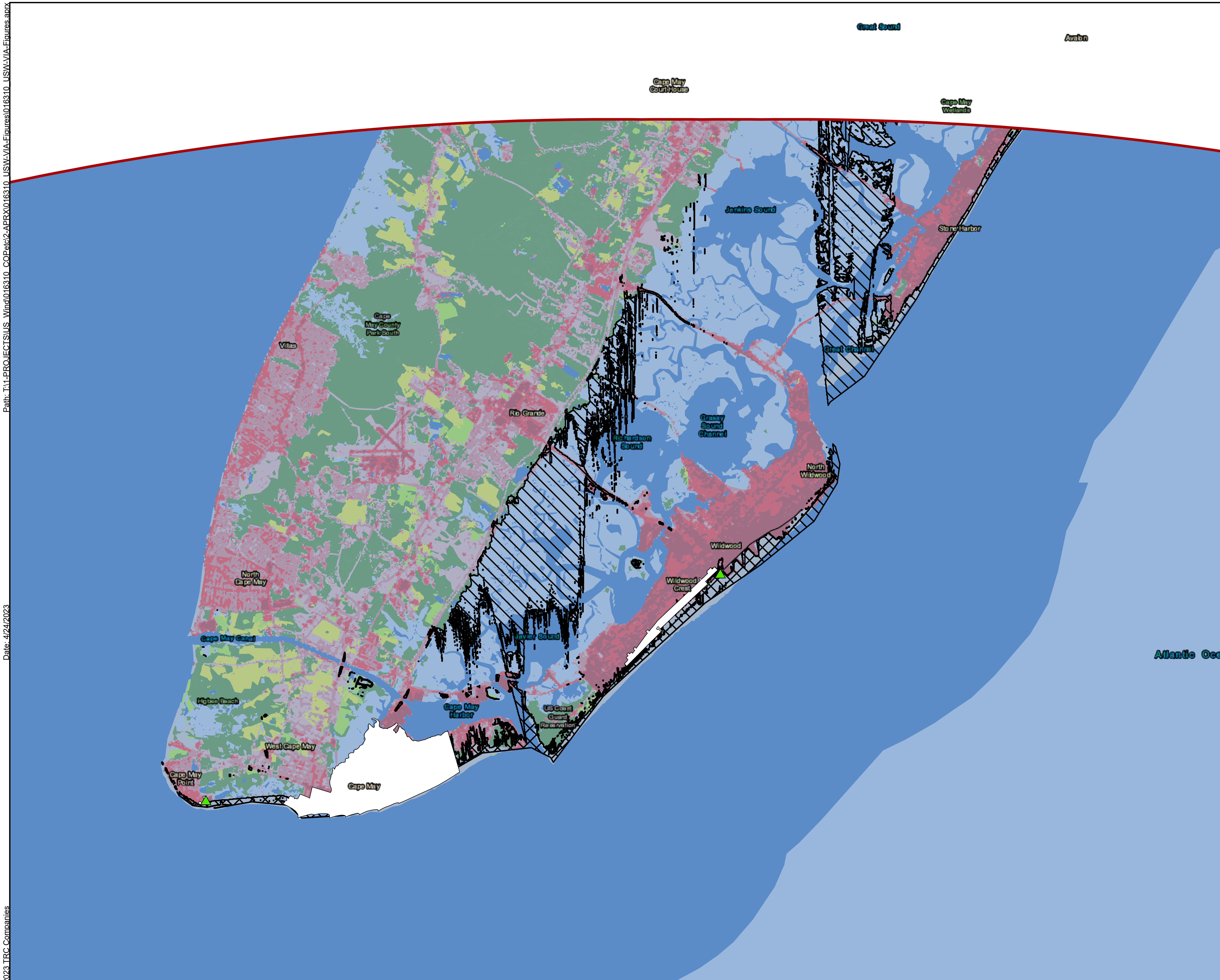

TRC

Maryland Offshore Wind Project

Offshore Maryland and Delaware

Figure 5

Sheet 2 of 12

Landscape Similarity Zones

Legend

- Selected Simulation Location
- Historic Resources (area)
- Potential Turbine Nacelle Visibility (43 mi)
- Potential Turbine Blade Visibility (43 mi)

LSZ

- Open Water
- Forest and Forested Wetlands
- Agriculture
- Developed, Open Space
- Wetlands
- Developed, Low Intensity
- Developed, Medium Intensity
- Developed High Intensity
- Beach
- Shrub/Scrub and Grasslands

0 0.5 1 2 Miles

0 1 2 4 Kilometers

Source: 1) BOEM, Lease Area, 2013
2) TNC, Secured Lands, 2015
3) DE Dept. of Agriculture, State Forests, 2021
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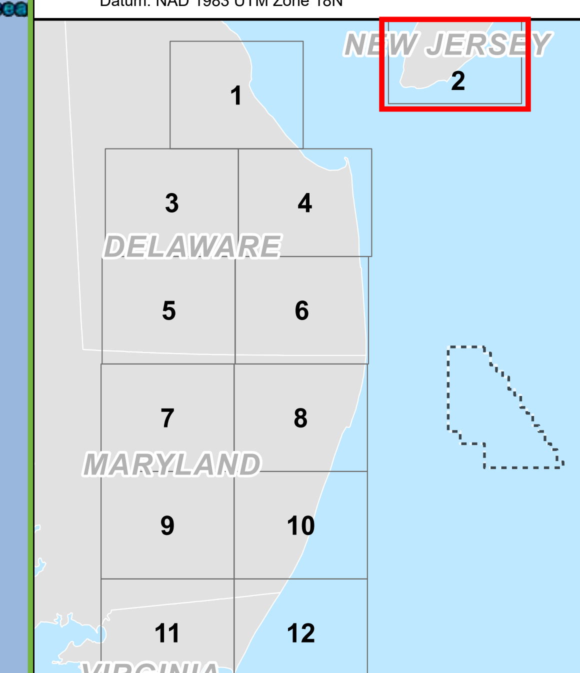

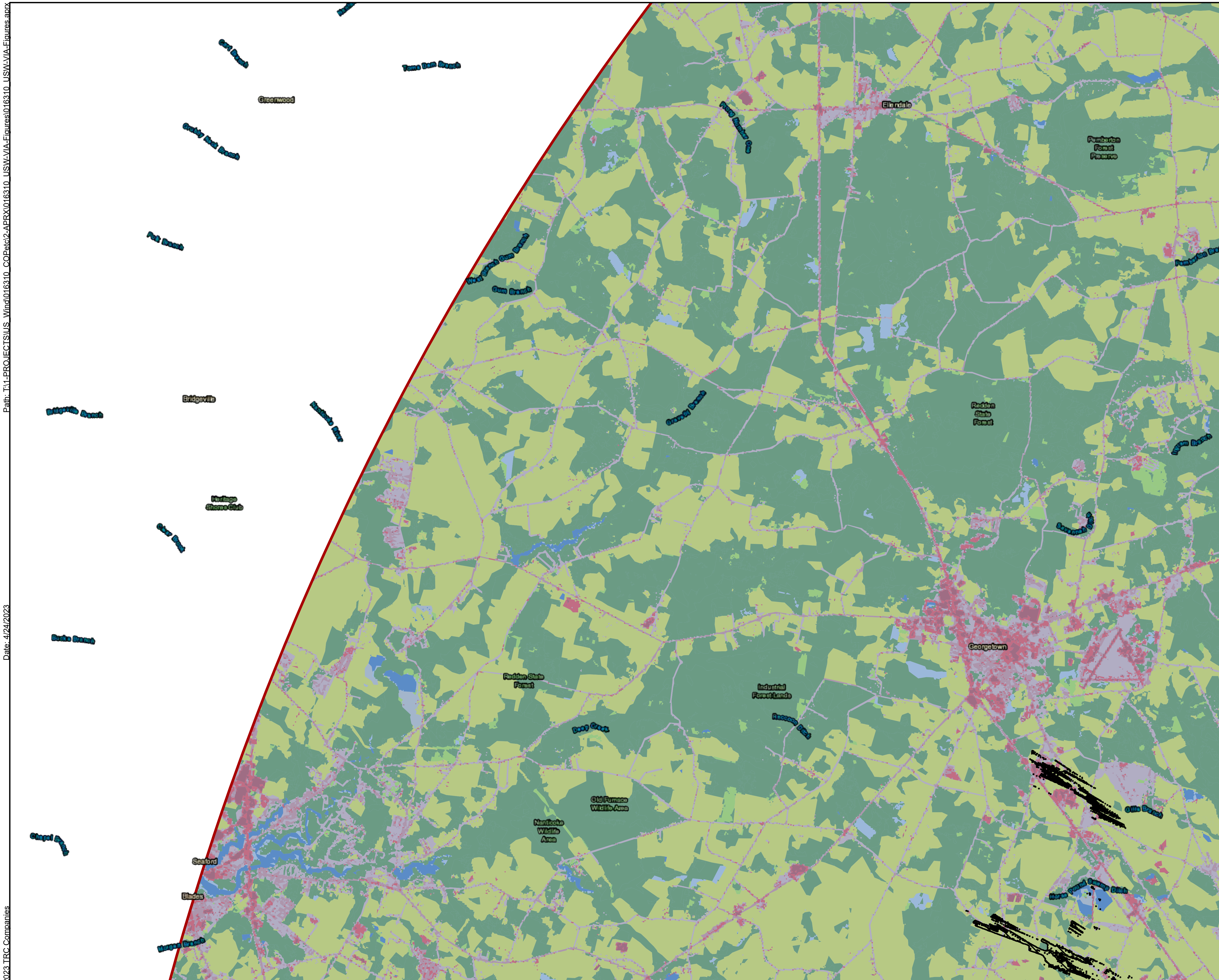

Maryland Offshore Wind Project
Offshore Maryland and Delaware

Figure 5
Sheet 3 of 12

Landscape Similarity Zones

Legend

- Selected Simulation Location
- Potential Turbine Blade Visibility (43 mi)

LSZ

- Open Water
- Forest and Forested Wetlands
- Agriculture
- Developed, Open Space
- Wetlands
- Developed, Low Intensity
- Developed, Medium Intensity
- Developed High Intensity
- Beach
- Shrub/Scrub and Grasslands

0 0.5 1 2 Miles

0 1 2 4 Kilometers

Source: 1) BOEM, Lease Area, 2013
2) TNC, Secured Lands, 2015
3) DE Dept. of Agriculture, State Forests, 2021
4) R. Christopher Goodwin & Associates, Inc., Historic Resources, 2022

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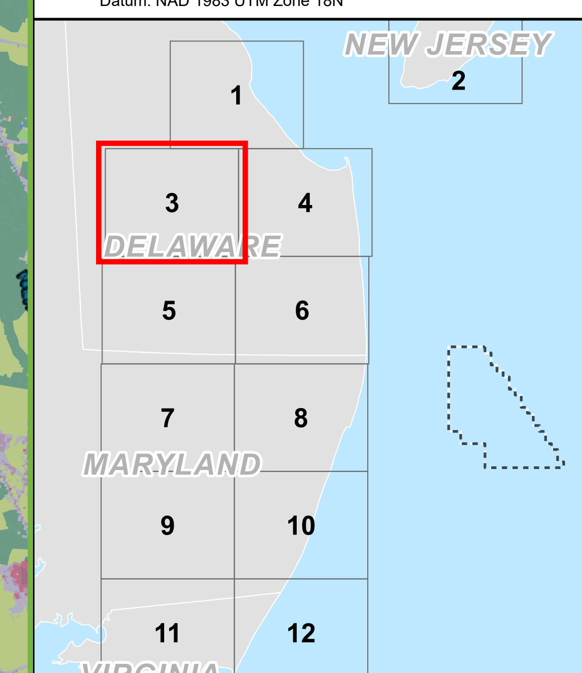

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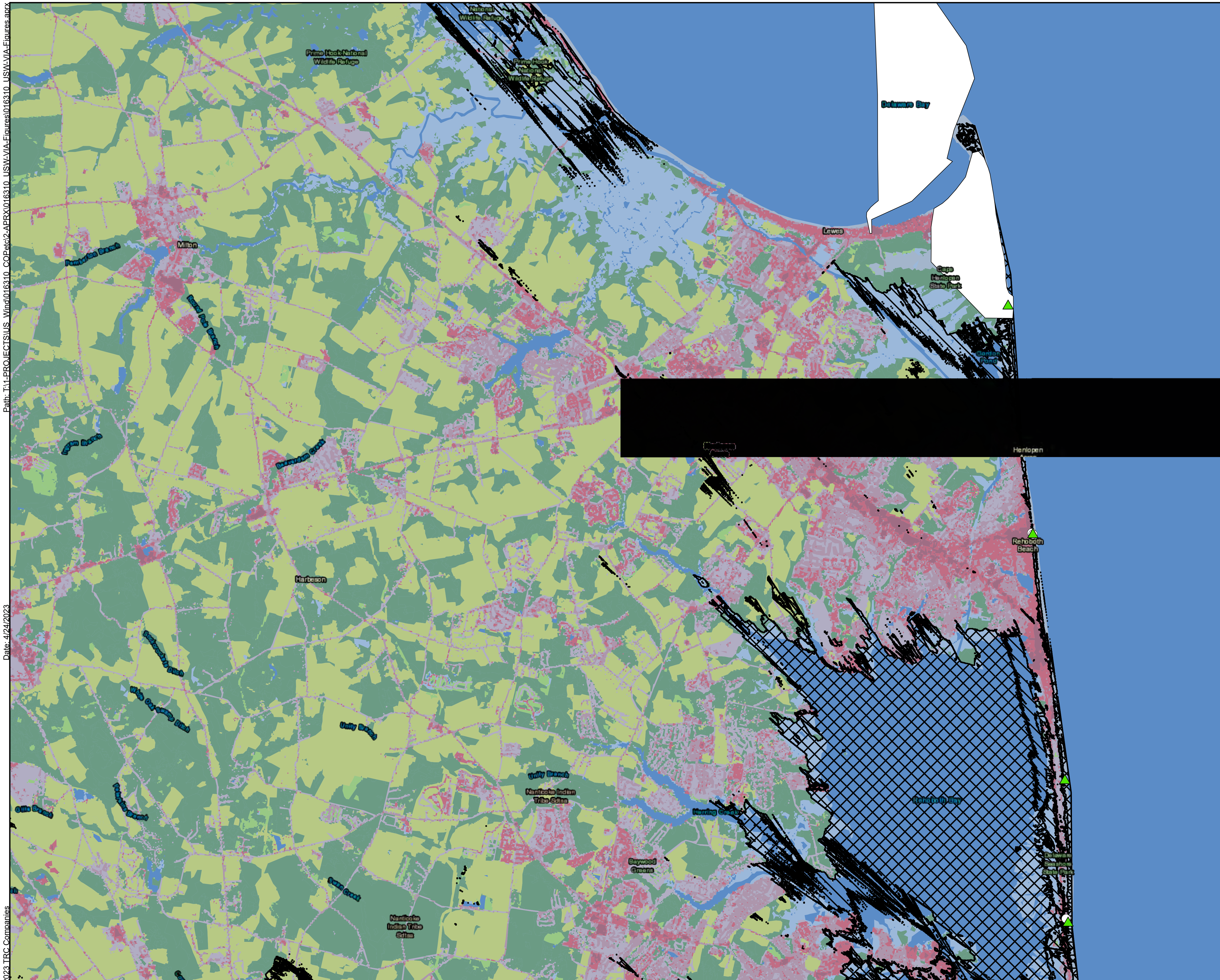

Maryland Offshore Wind Project

Offshore Maryland and Delaware

Figure 5

Sheet 4 of 12

Landscape Similarity Zones

Legend

- Selected Simulation Location
- Historic Resources (point)
- Historic Resources (area)
- Potential Offshore Substation Visibility (43 mi)
- Potential Turbine Nacelle Visibility (43 mi)
- Potential Turbine Blade Visibility (43 mi)

LSZ

- Open Water
- Forest and Forested Wetlands
- Agriculture
- Developed, Open Space
- Wetlands
- Developed, Low Intensity
- Developed, Medium Intensity
- Developed High Intensity
- Beach
- Shrub/Scrub and Grasslands

0 0.5 1 2 Miles

0 1 2 4 Kilometers

Source: 1) BOEM, Lease Area, 2013
2) TNC, Secured Lands, 2015
3) DE Dept. of Agriculture, State Forests, 2021
4) R. Christopher Goodwin & Associates, Inc., Historic Resources, 2022

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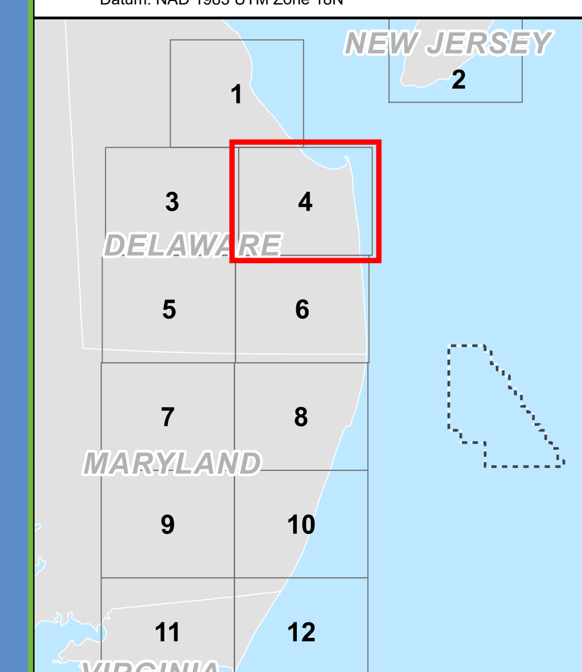

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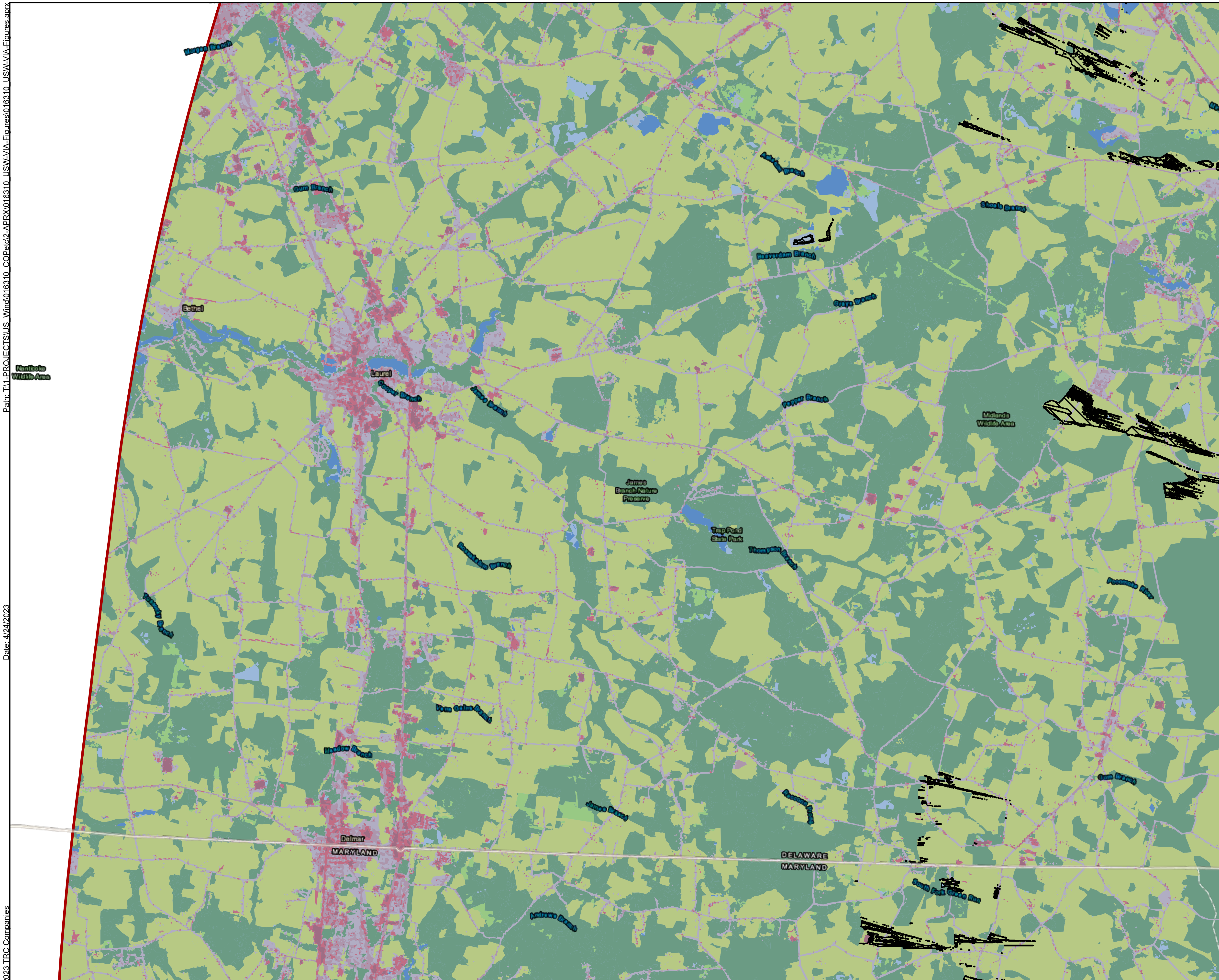


TRC

Maryland Offshore Wind Project
Offshore Maryland and Delaware

Figure 5

Sheet 5 of 12

Landscape Similarity Zones

Legend

- Selected Simulation Location
- Potential Turbine Nacelle Visibility (43 mi)
- Potential Turbine Blade Visibility (43 mi)

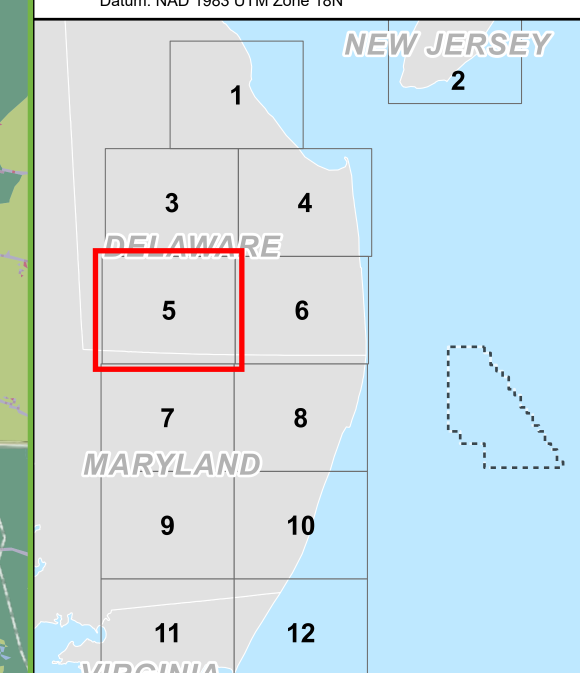
LSZ

- Open Water
- Forest and Forested Wetlands
- Agriculture
- Developed, Open Space
- Wetlands
- Developed, Low Intensity
- Developed, Medium Intensity
- Developed High Intensity
- Beach
- Shrub/Scrub and Grasslands

0 0.5 1 2 Miles
0 1 2 4 Kilometers

Source: 1) BOEM, Lease Area, 2013
2) TNC, Secured Lands, 2015
3) DE Dept. of Agriculture, State Forests, 2021
4) R. Christopher Goodwin & Associates, Inc., Historic Resources, 2022

Datum: NAD 1983 UTM Zone 18N



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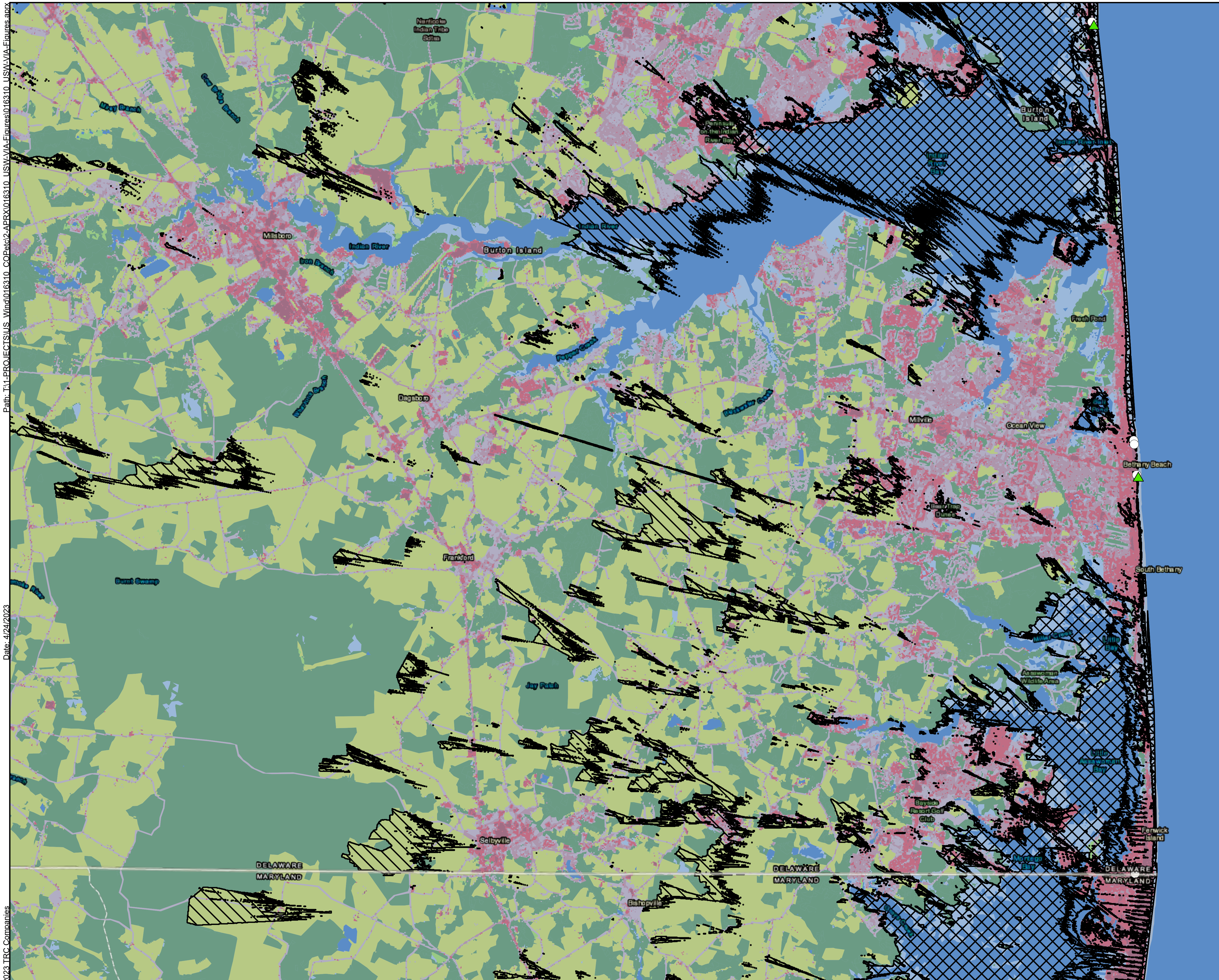


Maryland Offshore Wind Project
Offshore Maryland and Delaware

Figure 5
Sheet 6 of 12

Landscape Similarity Zones

Legend

- Selected Simulation Location
- Historic Resources (point)
- Potential Offshore Substation Visibility (43 mi)
- Potential Turbine Nacelle Visibility (43 mi)
- Potential Turbine Blade Visibility (43 mi)

LSZ

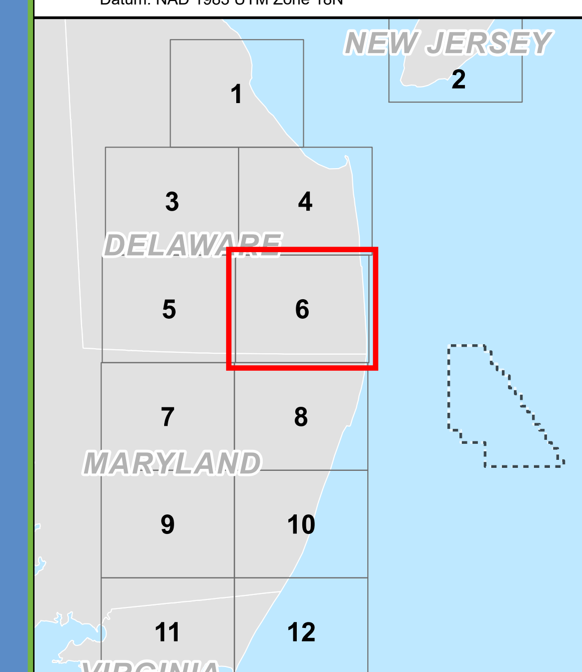
- Open Water
- Forest and Forested Wetlands
- Agriculture
- Developed, Open Space
- Wetlands
- Developed, Low Intensity
- Developed, Medium Intensity
- Developed High Intensity
- Beach
- Shrub/Scrub and Grasslands

0 0.5 1 2 Miles

0 1 2 4 Kilometers

Source: 1) BOEM, Lease Area, 2013
2) TNC, Secured Lands, 2015
3) DE Dept. of Agriculture, State Forests, 2021
4) R. Christopher Goodwin & Associates, Inc., Historic Resources, 2022

Datum: NAD 1983 UTM Zone 18N



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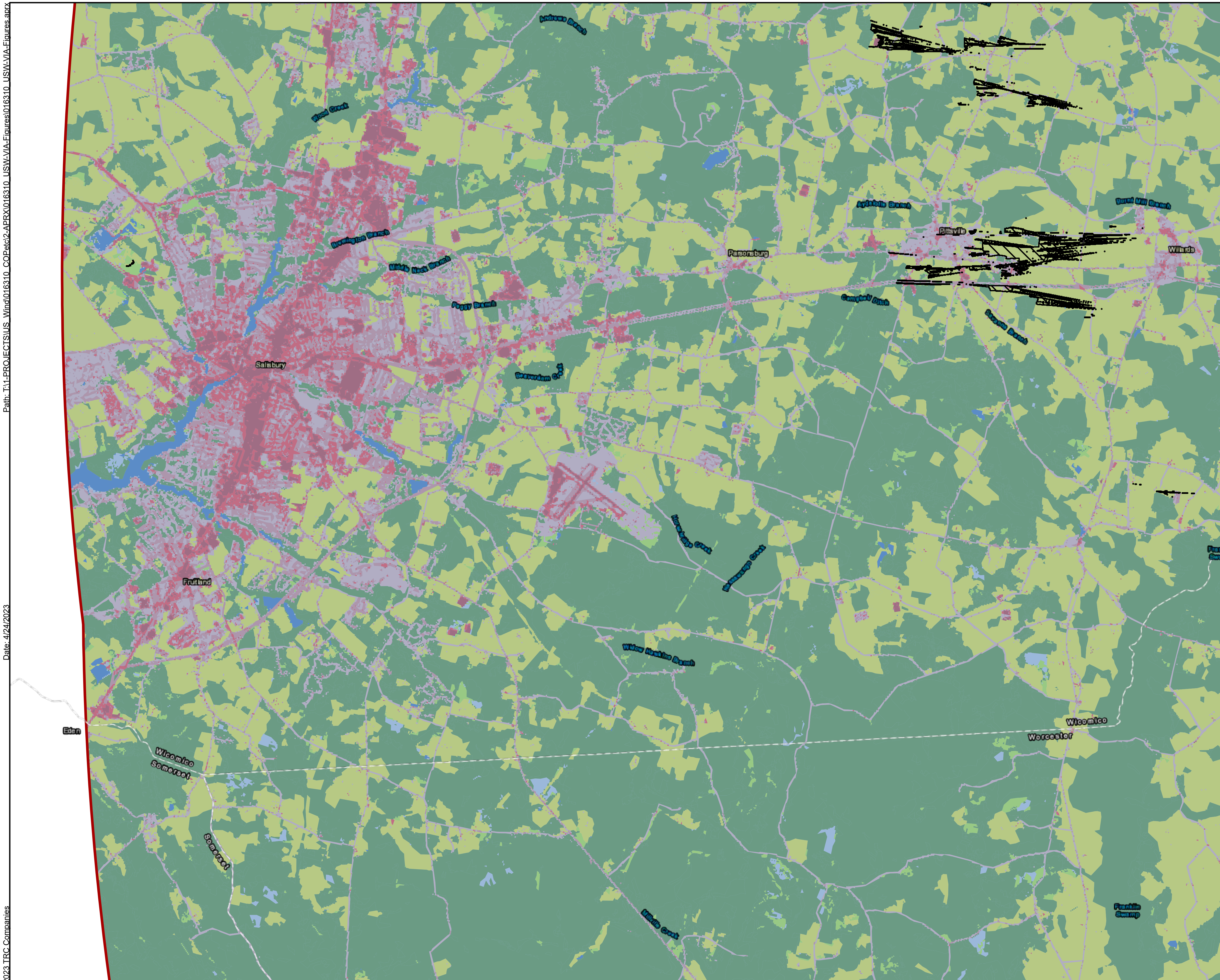

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Maryland Offshore Wind Project
Offshore Maryland and Delaware

Figure 5
Sheet 7 of 12

Landscape Similarity Zones

Legend

- Selected Simulation Location
- Potential Turbine Blade Visibility (43 mi)

LSZ

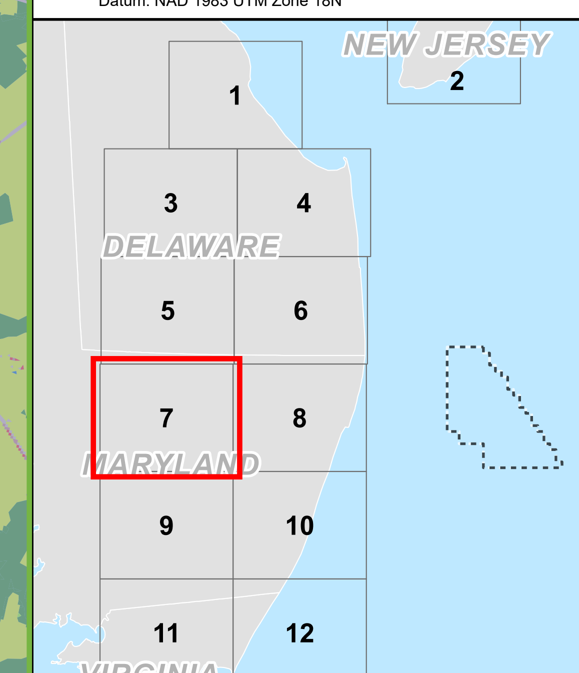
- Open Water
- Forest and Forested Wetlands
- Agriculture
- Developed, Open Space
- Wetlands
- Developed, Low Intensity
- Developed, Medium Intensity
- Developed High Intensity
- Beach
- Shrub/Scrub and Grasslands

0 0.5 1 2 Miles

0 1 2 4 Kilometers

Source: 1) BOEM, Lease Area, 2013
2) TNC, Secured Lands, 2015
3) DE Dept. of Agriculture, State Forests, 2021
4) R. Christopher Goodwin & Associates, Inc., Historic Resources, 2022

Datum: NAD 1983 UTM Zone 18N



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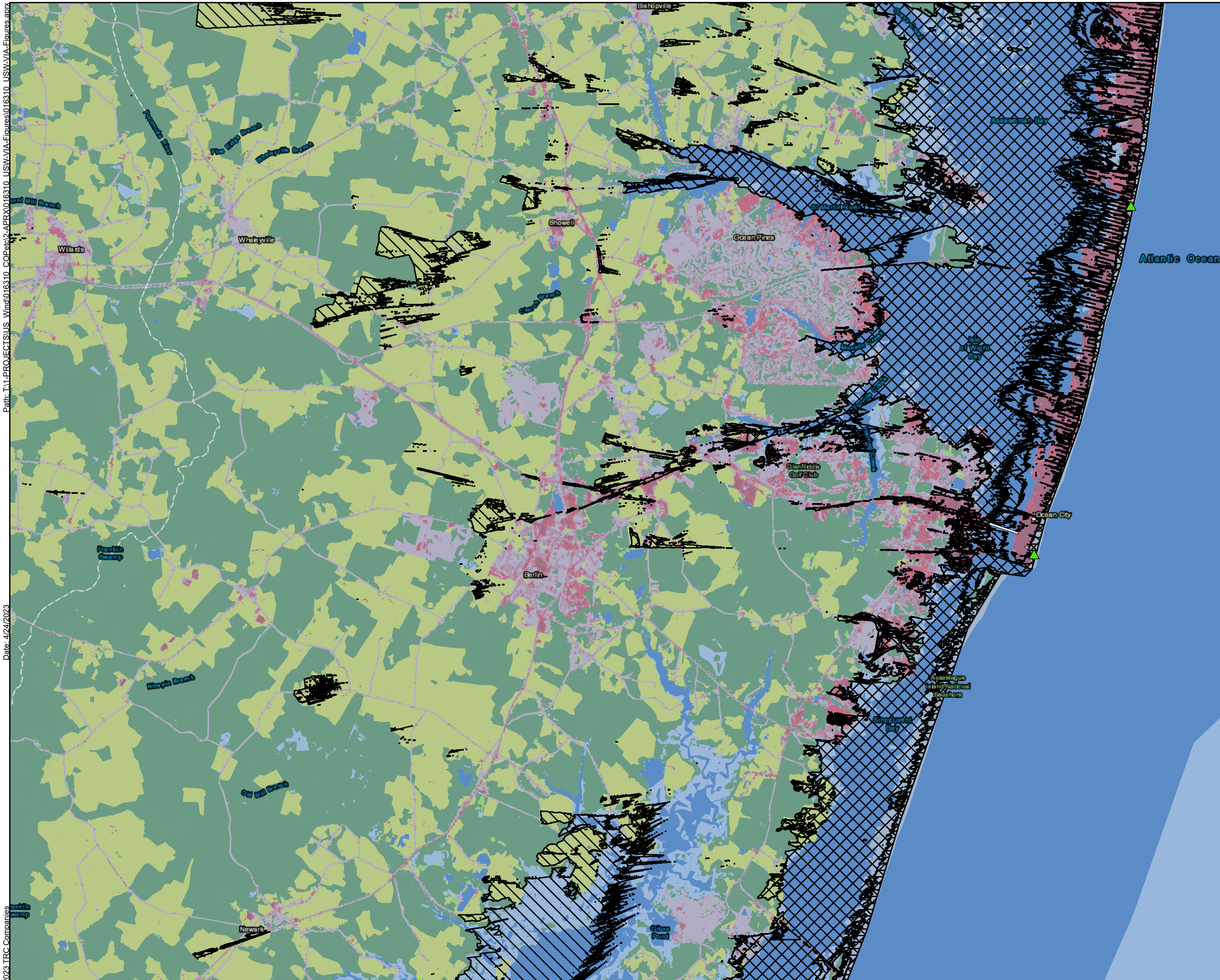

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Maryland Offshore Wind Project
Offshore Maryland and Delaware

Figure 5
Sheet 8 of 12

Landscape Similarity Zones

Legend

- Selected Simulation Location
- Historic Resources (area)
- Potential Offshore Substation Visibility (43 mi)
- Potential Turbine Nacelle Visibility (43 mi)
- Potential Turbine Blade Visibility (43 mi)

LSZ

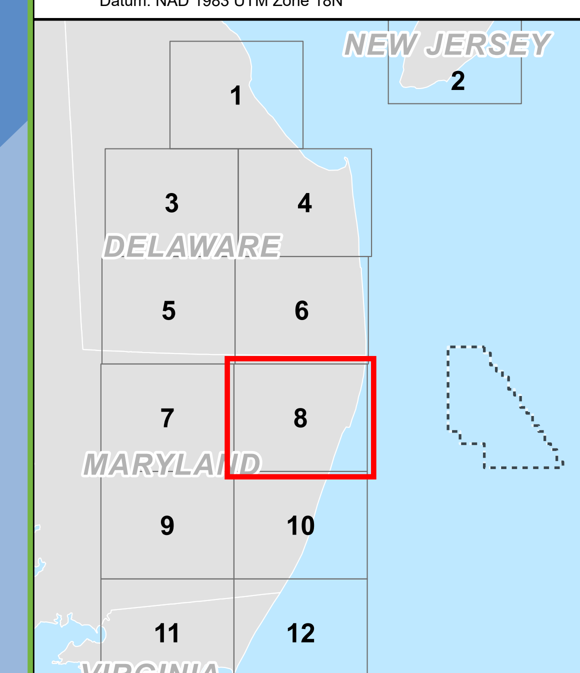
- Open Water
- Forest and Forested Wetlands
- Agriculture
- Developed, Open Space
- Wetlands
- Developed, Low Intensity
- Developed, Medium Intensity
- Developed High Intensity
- Beach
- Shrub/Scrub and Grasslands

0 0.5 1 2 Miles

0 1 2 4 Kilometers

Source: 1) BOEM, Lease Area, 2013
2) TNC, Secured Lands, 2015
3) DE Dept. of Agriculture, State Forests, 2021
4) R. Christopher Goodwin & Associates, Inc., Historic Resources, 2022

Datum: NAD 1983 UTM Zone 18N



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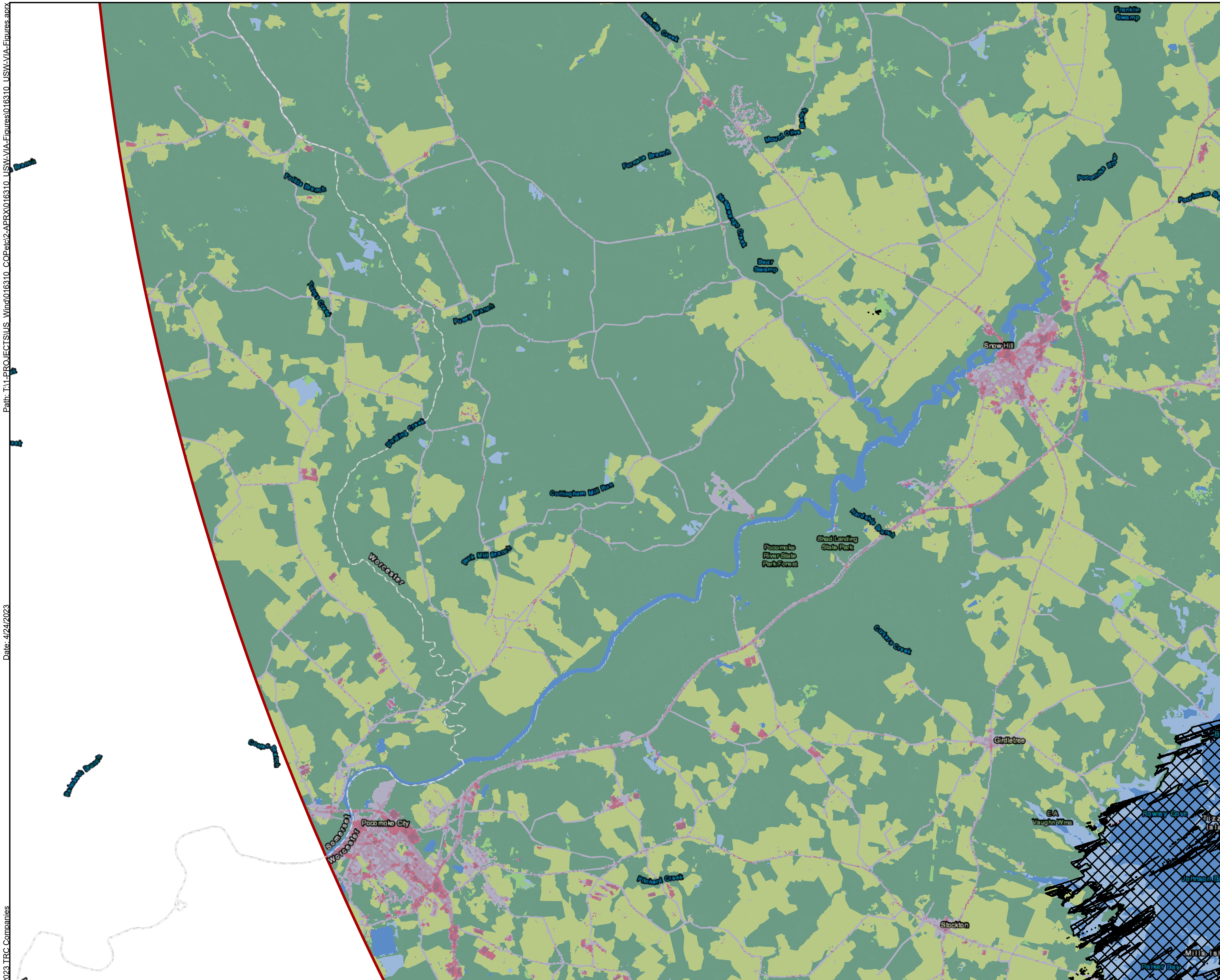


Maryland Offshore Wind Project

Offshore Maryland and Delaware

Figure 5

Sheet 9 of 12

Landscape Similarity Zones

Legend

- Selected Simulation Location
- Potential Turbine Nacelle Visibility (43 mi)
- Potential Turbine Blade Visibility (43 mi)

LSZ

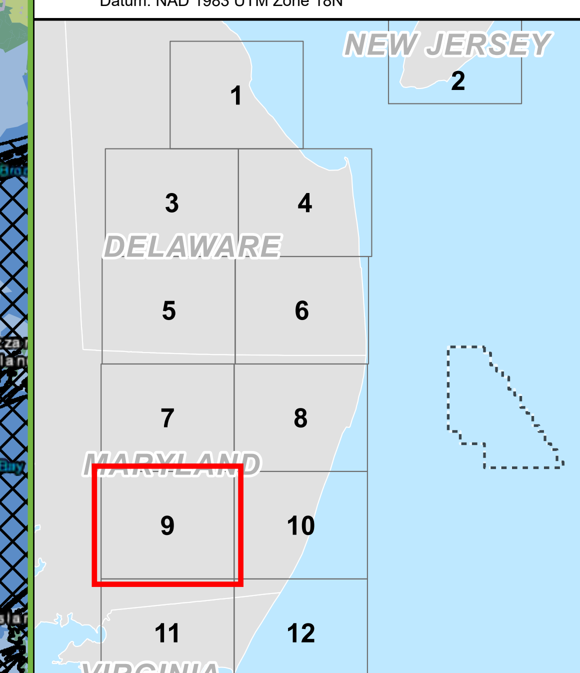
- Open Water
- Forest and Forested Wetlands
- Agriculture
- Developed, Open Space
- Wetlands
- Developed, Low Intensity
- Developed, Medium Intensity
- Developed High Intensity
- Beach
- Shrub/Scrub and Grasslands

0 0.5 1 2 Miles

0 1 2 4 Kilometers

Source: 1) BOEM, Lease Area, 2013
2) TNC, Secured Lands, 2015
3) DE Dept. of Agriculture, State Forests, 2021
4) R. Christopher Goodwin & Associates, Inc., Historic Resources, 2022

Datum: NAD 1983 UTM Zone 18N



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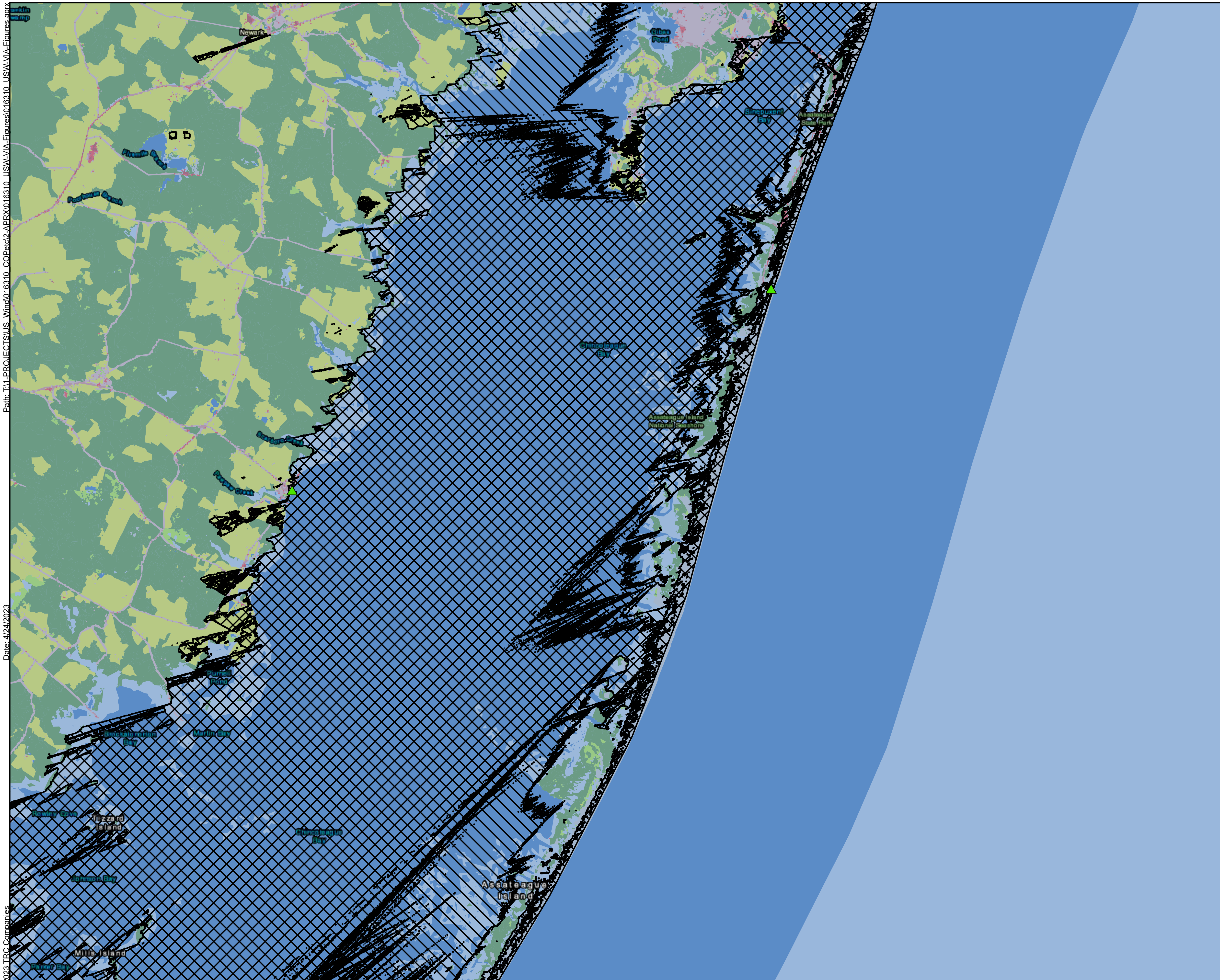


Maryland Offshore Wind Project
Offshore Maryland and Delaware

Figure 5
Sheet 10 of 12

Landscape Similarity Zones

Legend

- Selected Simulation Location
- Potential Offshore Substation Visibility (43 mi)
- Potential Turbine Nacelle Visibility (43 mi)
- Potential Turbine Blade Visibility (43 mi)

LSZ

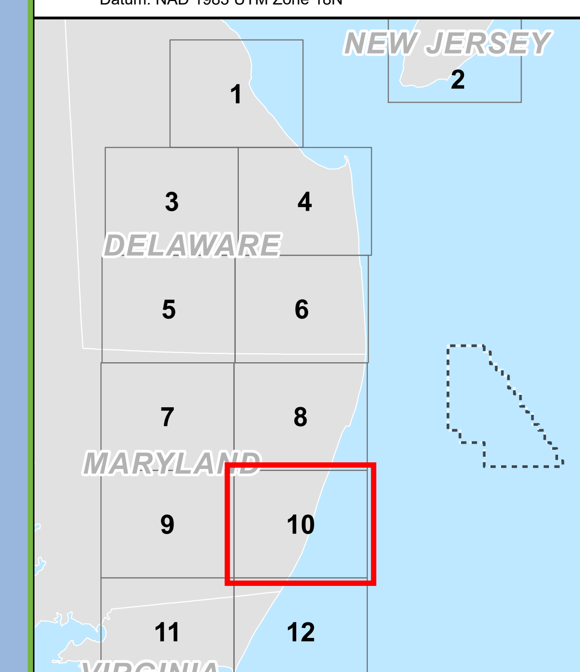
- Open Water
- Forest and Forested Wetlands
- Agriculture
- Developed, Open Space
- Wetlands
- Developed, Low Intensity
- Developed, Medium Intensity
- Developed High Intensity
- Beach
- Shrub/Scrub and Grasslands

0 0.5 1 2 Miles

0 1 2 4 Kilometers

Source: 1) BOEM, Lease Area, 2013
2) TNC, Secured Lands, 2015
3) DE Dept. of Agriculture, State Forests, 2021
4) R. Christopher Goodwin & Associates, Inc., Historic Resources, 2022

Datum: NAD 1983 UTM Zone 18N



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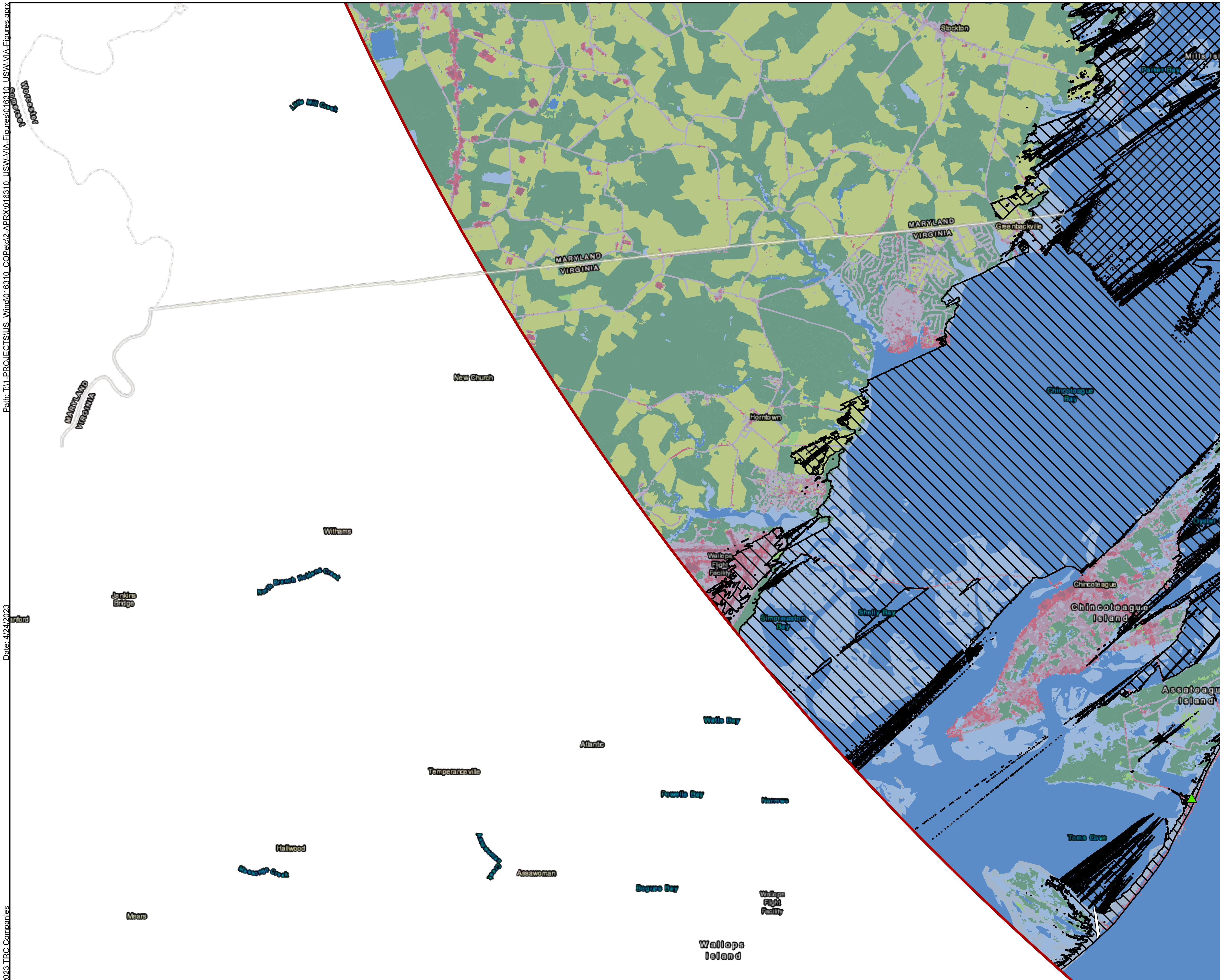

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Maryland Offshore Wind Project

Offshore Maryland and Delaware

Figure 5

Sheet 11 of 12

Landscape Similarity Zones

Legend

- Selected Simulation Location
- Historic Resources (area)
- Potential Turbine Nacelle Visibility (43 mi)
- Potential Turbine Blade Visibility (43 mi)

LSZ

- Open Water
- Forest and Forested Wetlands
- Agriculture
- Developed, Open Space
- Wetlands
- Developed, Low Intensity
- Developed, Medium Intensity
- Developed High Intensity
- Beach
- Shrub/Scrub and Grasslands

0 0.5 1 2 Miles

0 1 2 4 Kilometers

Source: 1) BOEM, Lease Area, 2013
2) TNC, Secured Lands, 2015
3) DE Dept. of Agriculture, State Forests, 2021
4) R. Christopher Goodwin & Associates, Inc., Historic Resources, 2022

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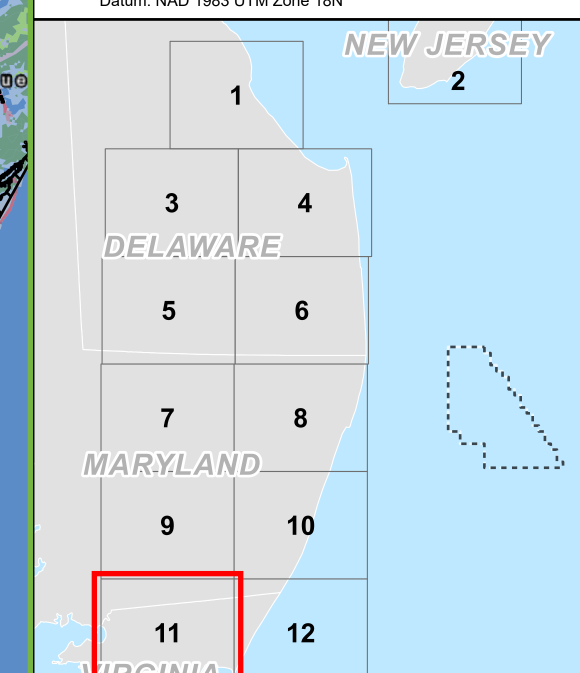

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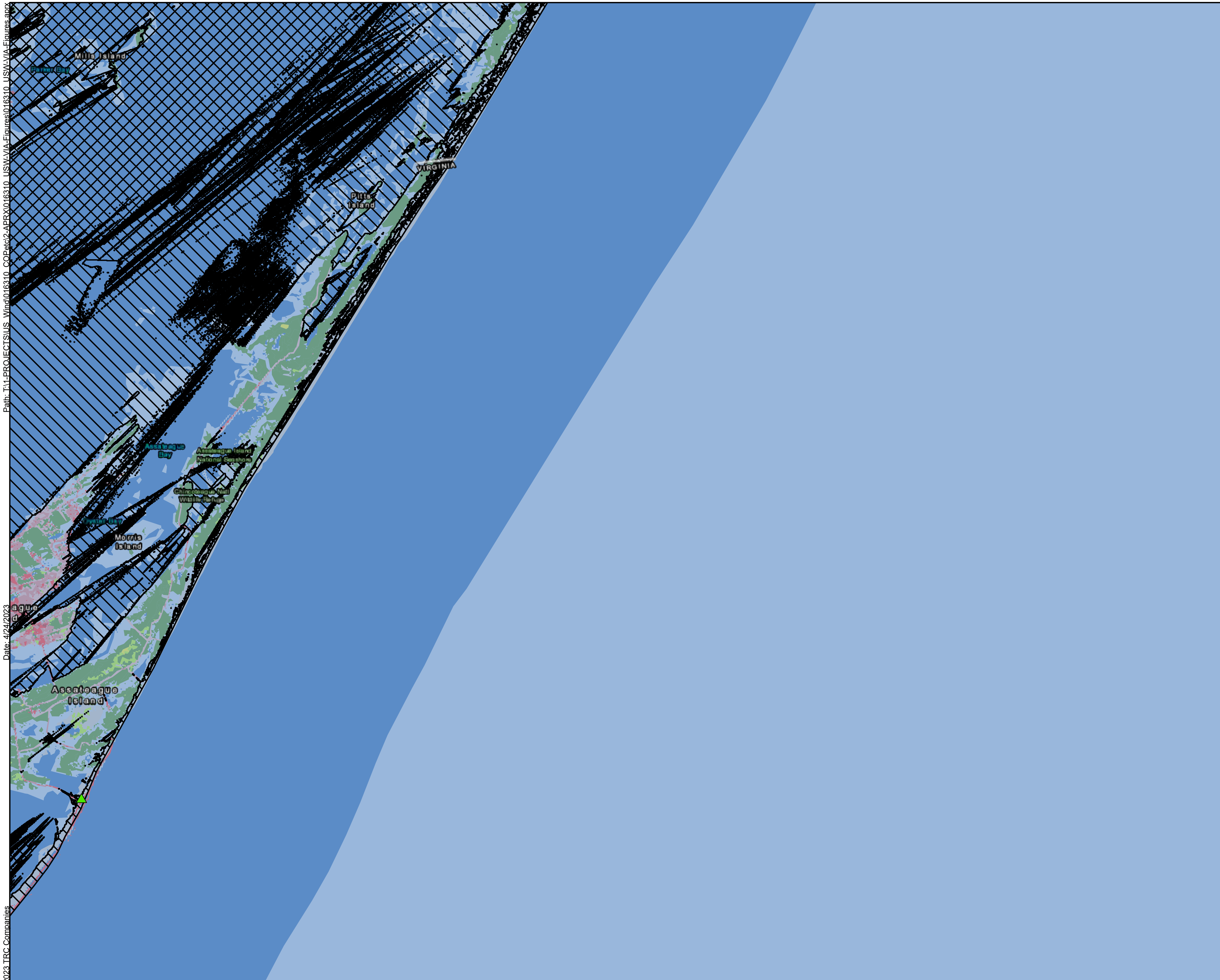

Maryland Offshore Wind Project
Offshore Maryland and Delaware

Figure 5
Sheet 12 of 12

Landscape Similarity Zones

Legend

- Selected Simulation Location
- Potential Turbine Nacelle Visibility (43 mi)
- Potential Turbine Blade Visibility (43 mi)

LSZ

- Open Water
- Forest and Forested Wetlands
- Agriculture
- Developed, Open Space
- Wetlands
- Developed, Low Intensity
- Developed, Medium Intensity
- Developed High Intensity
- Beach
- Shrub/Scrub and Grasslands

0 0.5 1 2 Miles

0 1 2 4 Kilometers

Source: 1) BOEM, Lease Area, 2013
2) TNC, Secured Lands, 2015
3) DE Dept. of Agriculture, State Forests, 2021
4) R. Christopher Goodwin & Associates, Inc., Historic Resources, 2022

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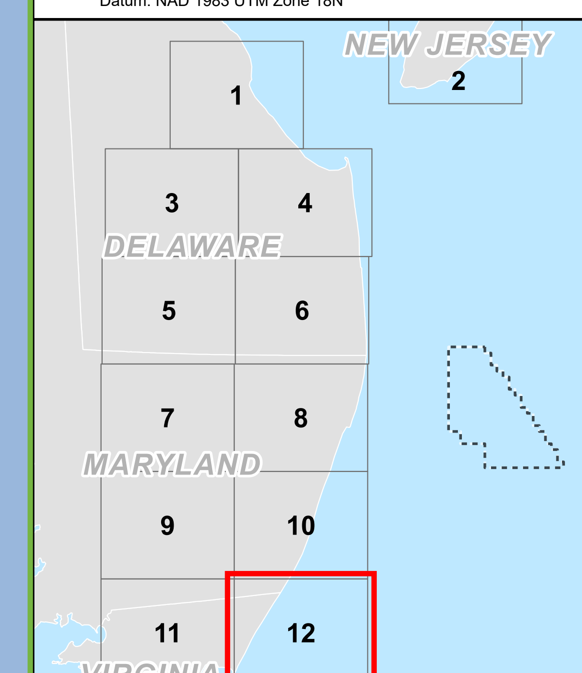

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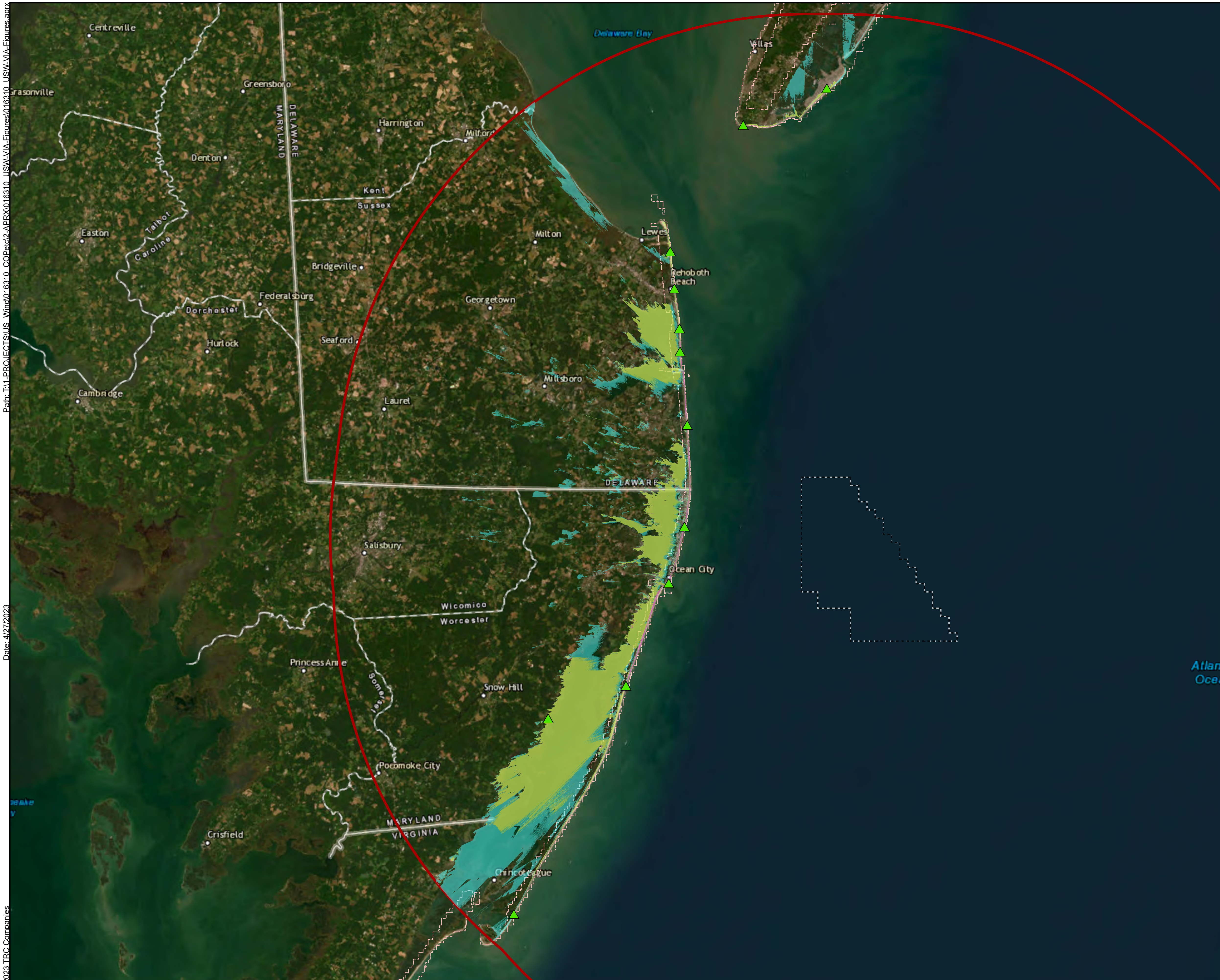

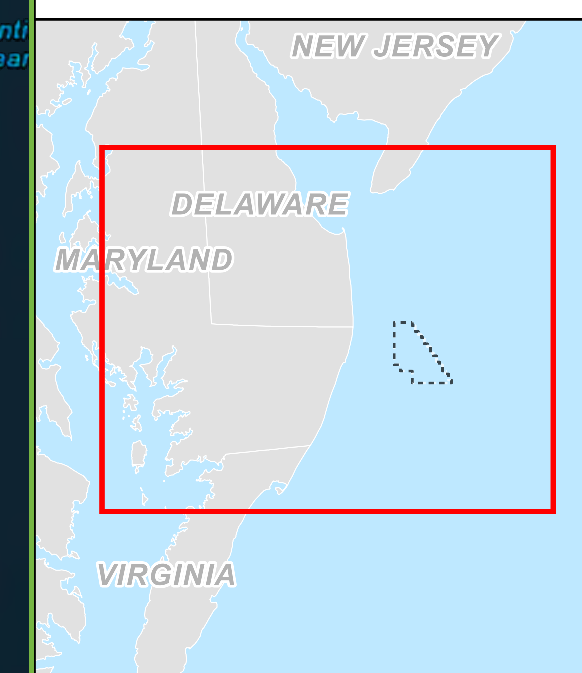

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Maryland Offshore Wind Project

Offshore Maryland and Delaware

Figure 6

Overall Project Viewshed

Legend

- US Wind Lease Area
- Selected Simulation Location
- Potential Turbine Nacelle Visibility (43 mi)
- Potential Turbine Blade Visibility (43 mi)
- Potential Offshore Substation Visibility (43 mi)
- USACE NCMP Topobathy Lidar

0 2.5 5 10 Miles

0 3.5 7 14 Kilometers

Source: 1) ESRI, Imagery, Various Dates
2) USACE NCMP Topobathy Lidar- East Coast, 2017

Datum: NAD 1983 UTM Zone 18N

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Maryland Offshore Wind Project

Offshore Maryland and Delaware

Figure 7

Sheet 1 of 12

Project Viewshed

Legend

43-Mile Visual Study Area

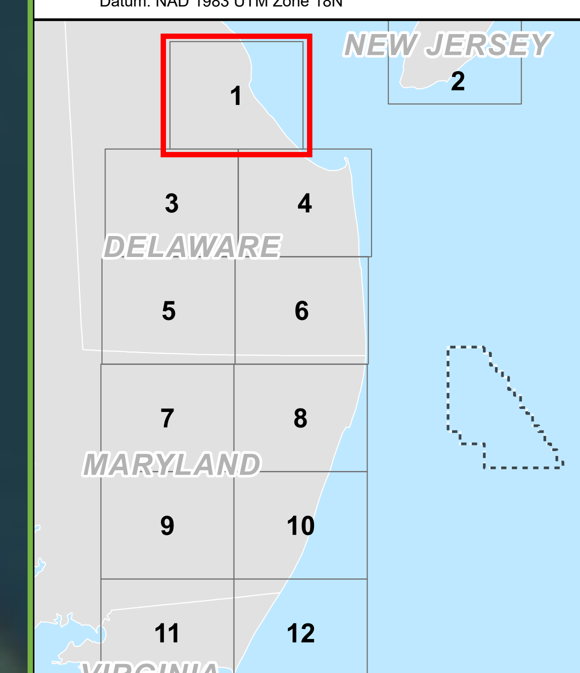
Potential Turbine Blade Visibility (43 mi)

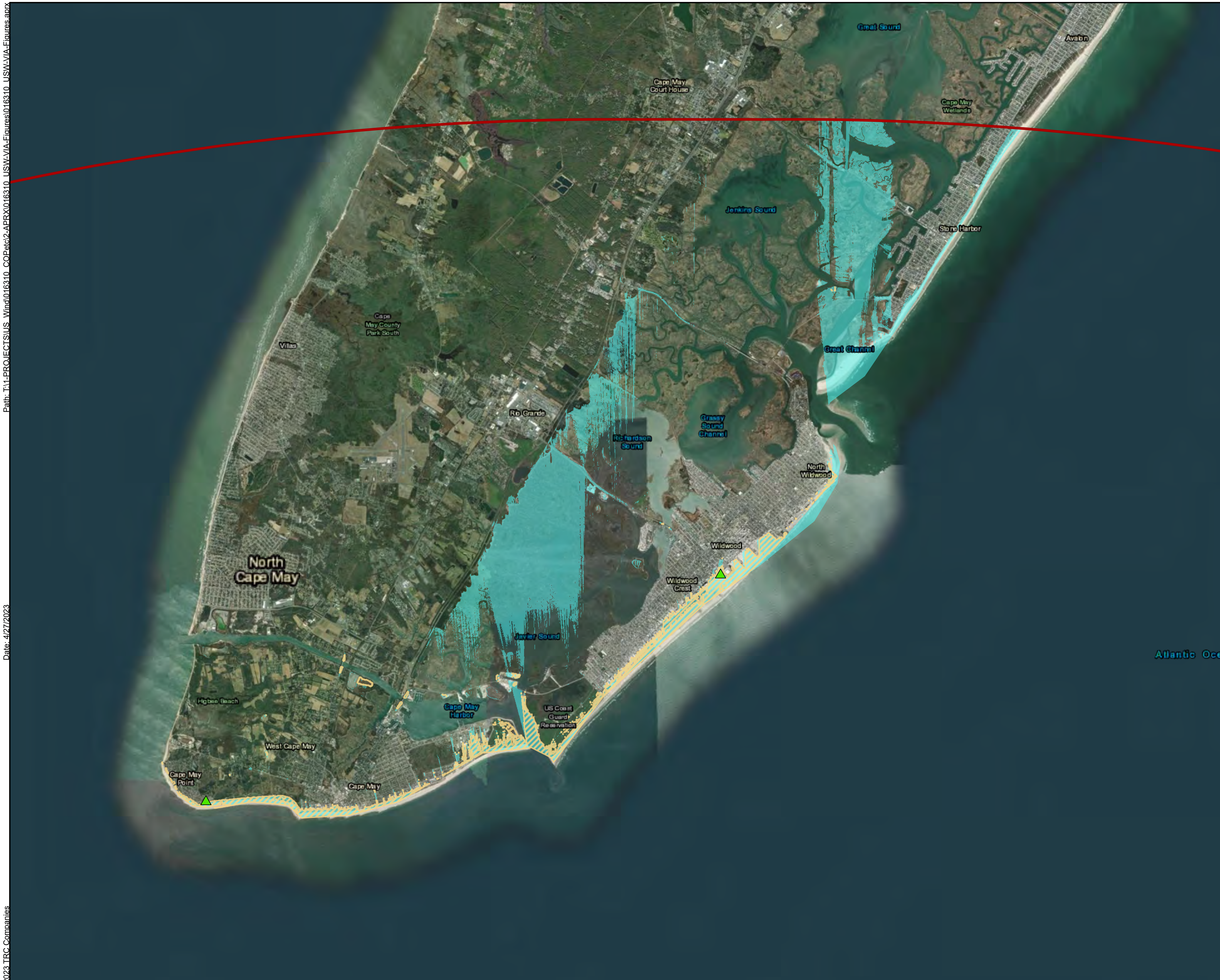
0 0.5 1 2 Miles

0 1 2 4 Kilometers

Source: 1) ESRI, Imagery, Various Dates

Datum: NAD 1983 UTM Zone 18N





Maryland Offshore Wind Project
Offshore Maryland and Delaware

Figure 7
Sheet 2 of 12

Project Viewshed

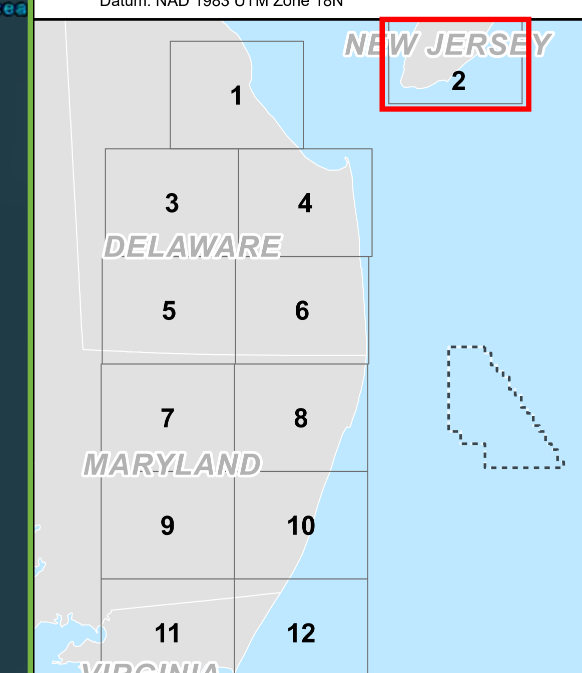
Legend

- 43-Mile Visual Study Area
- Selected Simulation Location
- Potential Turbine Nacelle Visibility (43 mi)
- Potential Turbine Blade Visibility (43 mi)

0 0.5 1 2 Miles
0 1 2 4 Kilometers

Source: 1) ESRI, Imagery, Various Dates

Datum: NAD 1983 UTM Zone 18N



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Date: 4/27/2023

Maryland Offshore Wind Project

Offshore Maryland and Delaware

Figure 7

Sheet 3 of 12

Project Viewshed

Legend

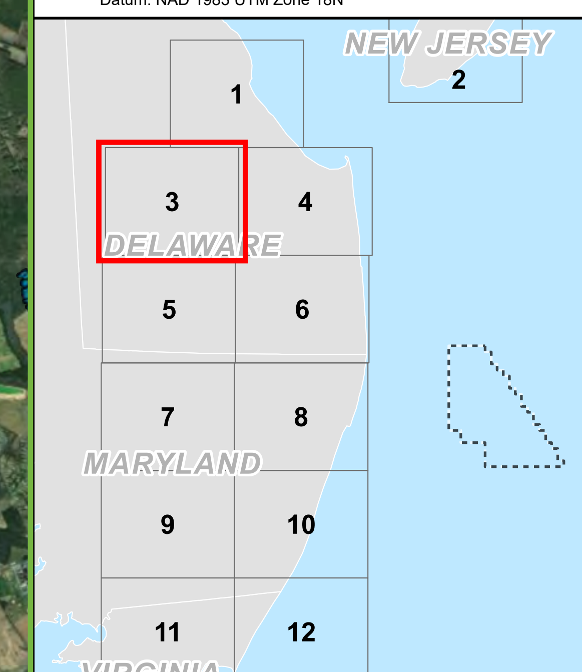
- 43-Mile Visual Study Area
- Potential Turbine Blade Visibility (43 mi)

0 0.5 1 2 Miles

0 1 2 4 Kilometers

Source: 1) ESRI, Imagery, Various Dates

Datum: NAD 1983 UTM Zone 18N



Maryland Offshore Wind Project

Offshore Maryland and Delaware

Figure 7

Sheet 4 of 12

Project Viewshed

Legend

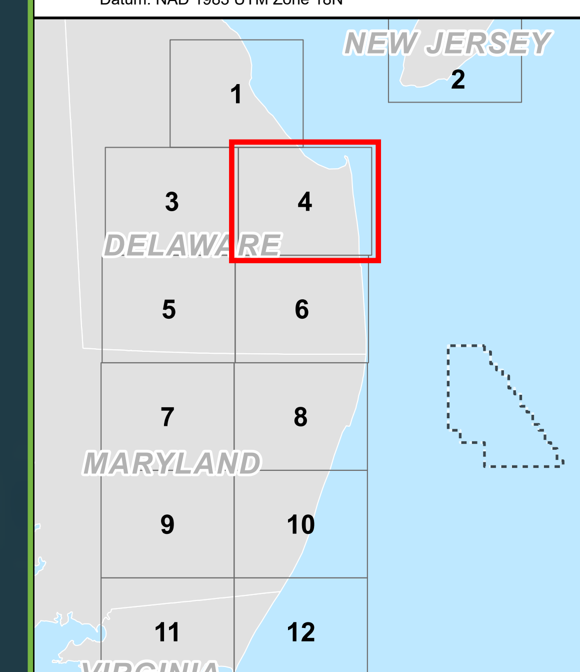
- 43-Mile Visual Study Area
- Selected Simulation Location
- Potential Offshore Substation Visibility (43 mi)
- Potential Turbine Nacelle Visibility (43 mi)
- Potential Turbine Blade Visibility (43 mi)

0 0.5 1 2 Miles

0 1 2 4 Kilometers

Source: 1) ESRI, Imagery, Various Dates

Datum: NAD 1983 UTM Zone 18N



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Date: 4/27/2023

Maryland Offshore Wind Project
Offshore Maryland and Delaware

Figure 7
Sheet 5 of 12

Project Viewshed

Legend

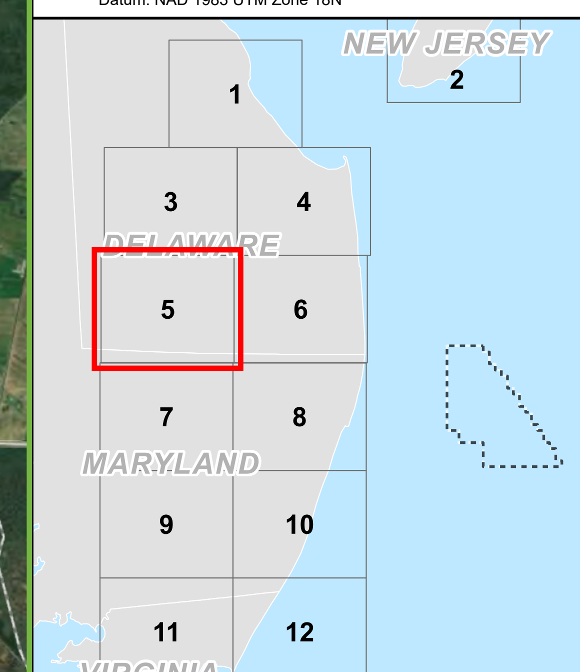
- 43-Mile Visual Study Area
- Potential Turbine Nacelle Visibility (43 mi)
- Potential Turbine Blade Visibility (43 mi)

0 0.5 1 2 Miles

0 1 2 4 Kilometers

Source: 1) ESRI, Imagery, Various Dates

Datum: NAD 1983 UTM Zone 18N



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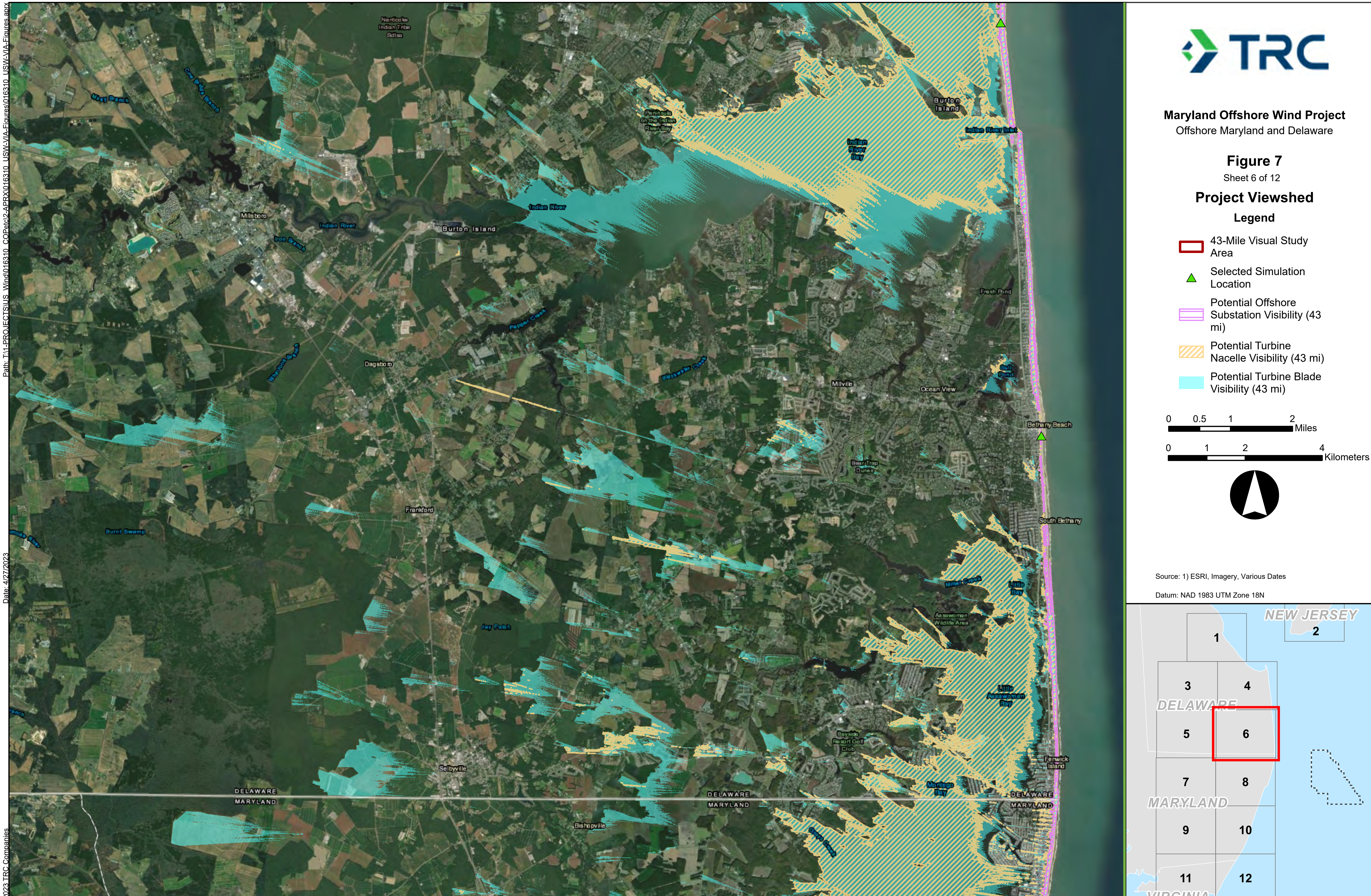
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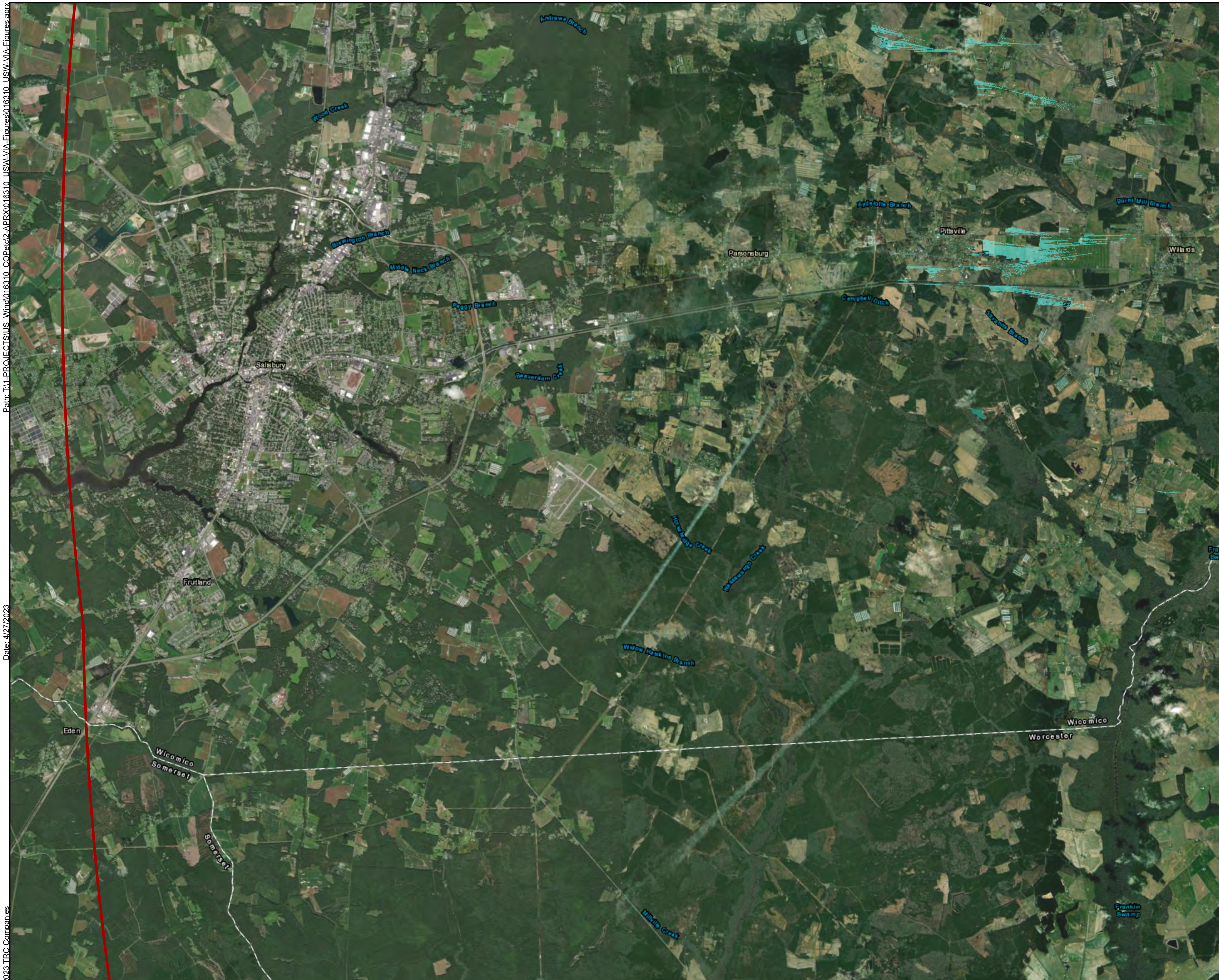
Maryland Offshore Wind Project
Offshore Maryland and Delaware
Figure 7
Sheet 6 of 12
Project Viewshed
Legend
43-Mile Visual Study Area
Selected Simulation Location
Potential Offshore Substation Visibility (43 mi)
Potential Turbine Nacelle Visibility (43 mi)
Potential Turbine Blade Visibility (43 mi)
0 0.5 1 2 Miles
0 1 2 4 Kilometers
Source: 1) ESRI, Imagery, Various Dates
Datum: NAD 1983 UTM Zone 18N
NEW JERSEY
DELAWARE
MARYLAND
VIRGINIA
1
2
3
4
5
6
7
8
9
10
11
12
Millsboro
Dagsboro
Frankford
Selbyville
Bishopville
Millville
Ocean View
Bethany Beach
South Bethany
Fenwick Island
Indian River
Indian River Bay
Indian River Inlet
Burton Island
DELAWARE
MARYLAND



Maryland Offshore Wind Project
Offshore Maryland and Delaware

Figure 7
Sheet 7 of 12

Project Viewshed

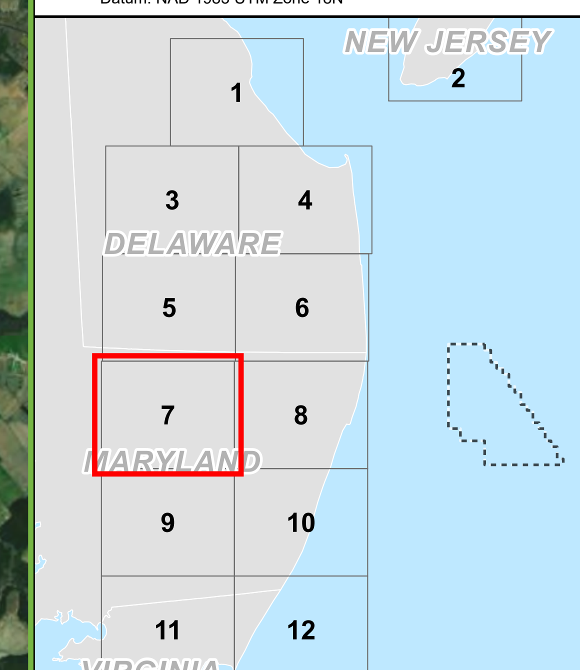
Legend

- 43-Mile Visual Study Area
- Potential Turbine Blade Visibility (43 mi)

0 0.5 1 2 Miles
0 1 2 4 Kilometers

Source: 1) ESRI, Imagery, Various Dates

Datum: NAD 1983 UTM Zone 18N



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Maryland Offshore Wind Project
Offshore Maryland and Delaware

Figure 7
Sheet 8 of 12

Project Viewshed

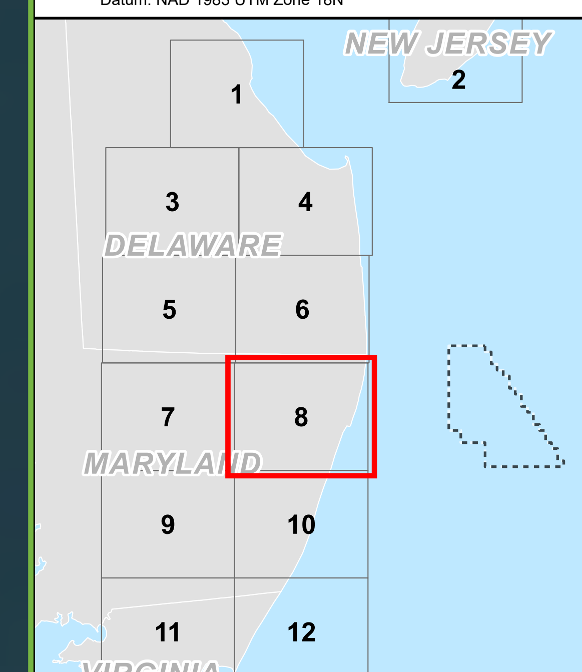
Legend

- 43-Mile Visual Study Area
- Selected Simulation Location
- Potential Offshore Substation Visibility (43 mi)
- Potential Turbine Nacelle Visibility (43 mi)
- Potential Turbine Blade Visibility (43 mi)

0 0.5 1 2 Miles
0 1 2 4 Kilometers

Source: 1) ESRI, Imagery, Various Dates

Datum: NAD 1983 UTM Zone 18N



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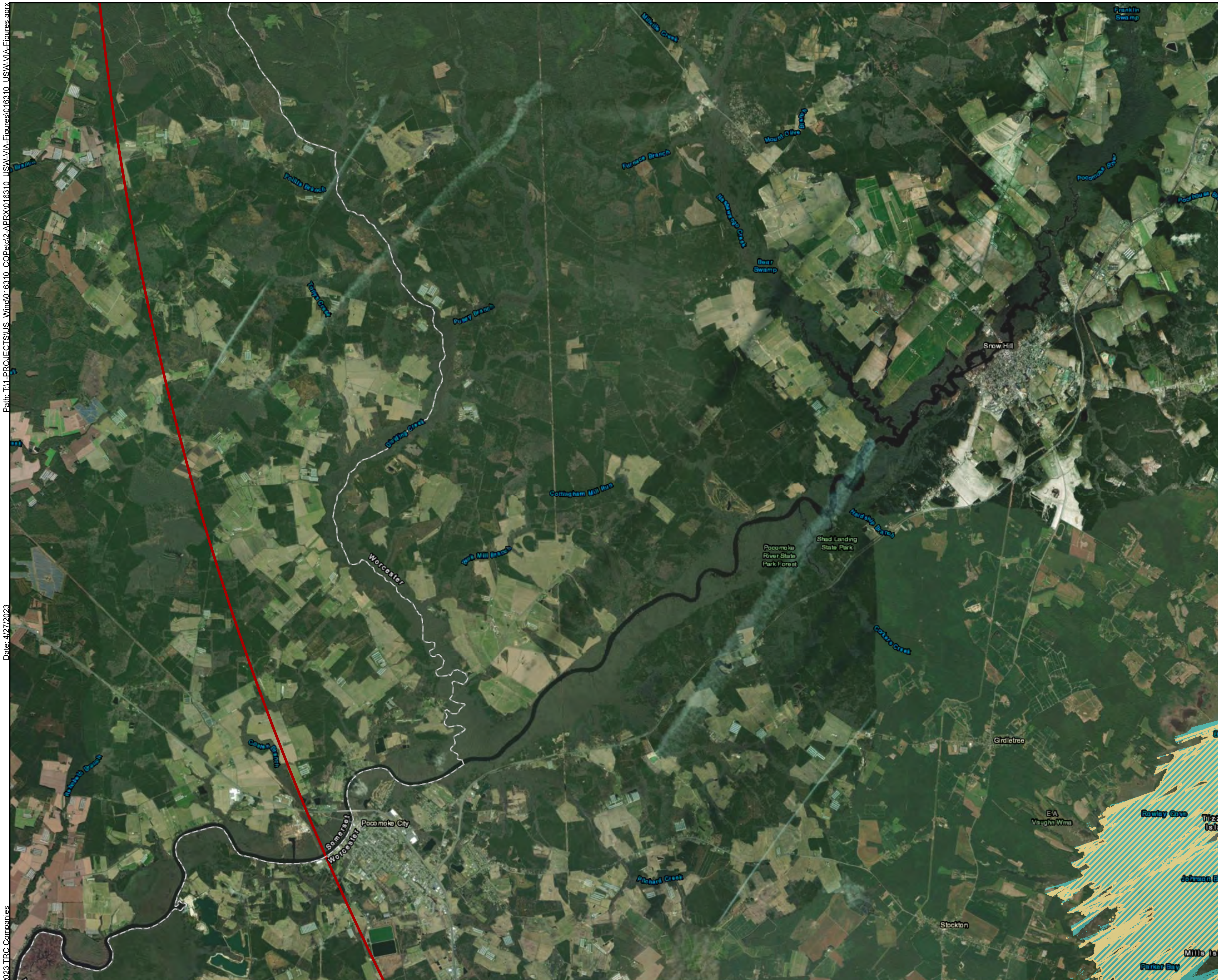

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Maryland Offshore Wind Project
Offshore Maryland and Delaware

Figure 7
Sheet 9 of 12

Project Viewshed

Legend

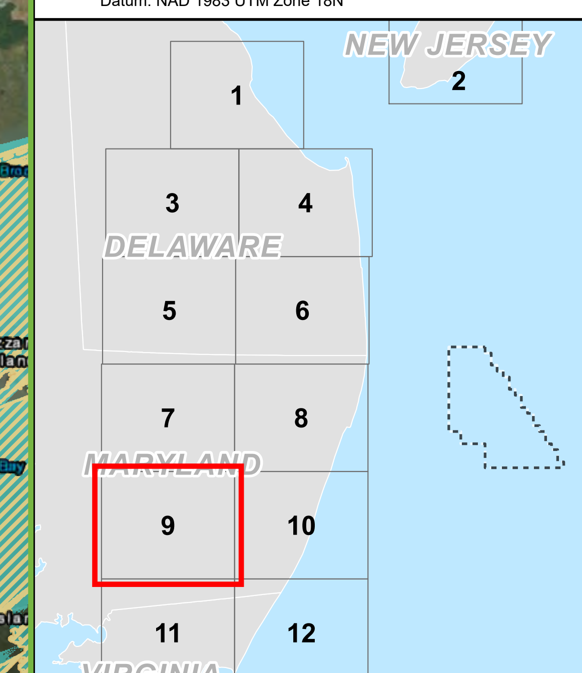
- 43-Mile Visual Study Area
- Potential Turbine Nacelle Visibility (43 mi)
- Potential Turbine Blade Visibility (43 mi)

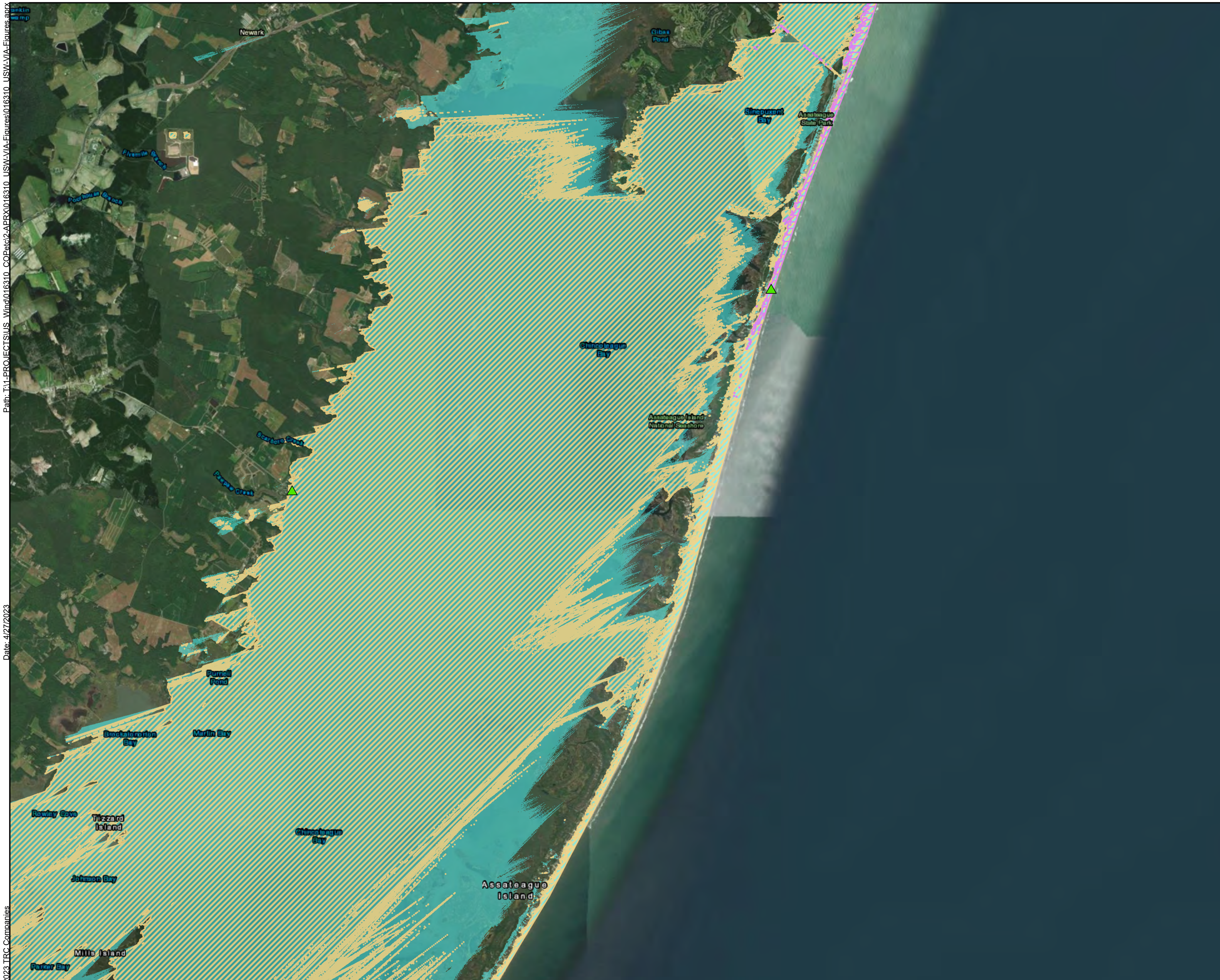
0 0.5 1 2 Miles

0 1 2 4 Kilometers

Source: 1) ESRI, Imagery, Various Dates

Datum: NAD 1983 UTM Zone 18N





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Maryland Offshore Wind Project
Offshore Maryland and Delaware

Figure 7

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Project Viewshed

Legend

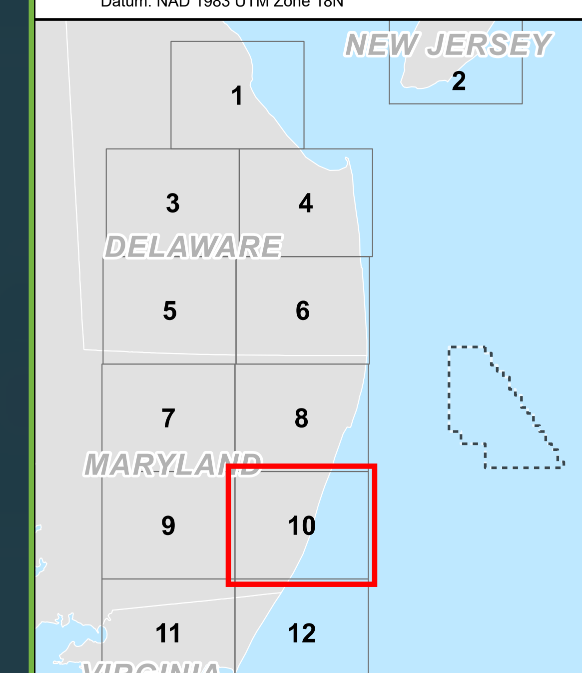
- 43-Mile Visual Study Area
- Selected Simulation Location
- Potential Offshore Substation Visibility (43 mi)
- Potential Turbine Nacelle Visibility (43 mi)
- Potential Turbine Blade Visibility (43 mi)

0 0.5 1 2 Miles

0 1 2 4 Kilometers

Source: 1) ESRI, Imagery, Various Dates

Datum: NAD 1983 UTM Zone 18N



Maryland Offshore Wind Project

Offshore Maryland and Delaware

Figure 7

Sheet 11 of 12

Project Viewshed

Legend

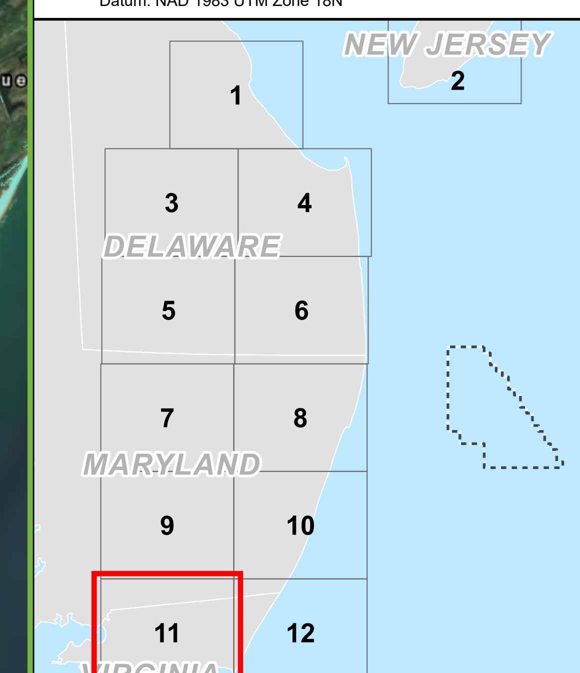
- 43-Mile Visual Study Area
- Selected Simulation Location
- Potential Turbine Nacelle Visibility (43 mi)
- Potential Turbine Blade Visibility (43 mi)

0 0.5 1 2 Miles

0 1 2 4 Kilometers

Source: 1) ESRI, Imagery, Various Dates

Datum: NAD 1983 UTM Zone 18N



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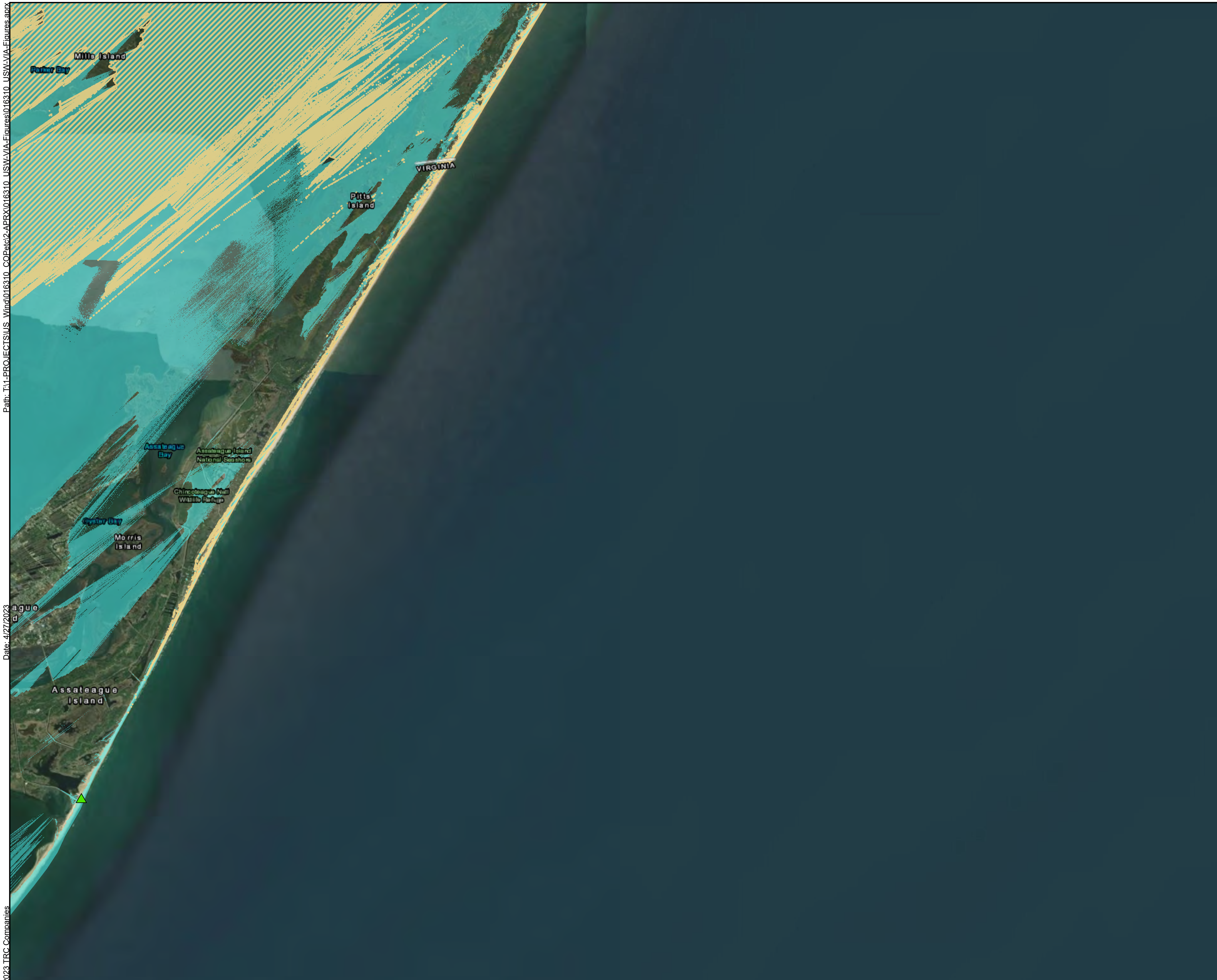

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Date: 4/27/2023

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Maryland Offshore Wind Project

Offshore Maryland and Delaware

Figure 7

Sheet 12 of 12

Project Viewshed

Legend

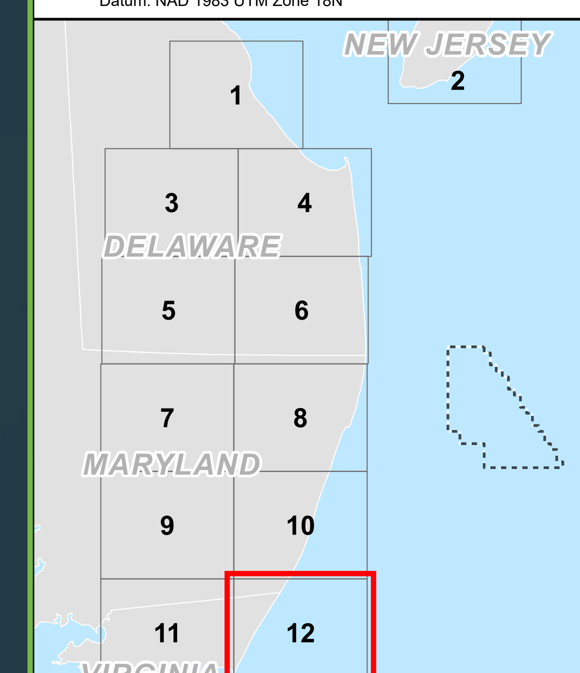
- 43-Mile Visual Study Area
- Selected Simulation Location
- Potential Turbine Nacelle Visibility (43 mi)
- Potential Turbine Blade Visibility (43 mi)

0 0.5 1 2 Miles

0 1 2 4 Kilometers

Source: 1) ESRI, Imagery, Various Dates

Datum: NAD 1983 UTM Zone 18N



Path: J:\U167 - US Wind MD\04 Graphics\GIS\MXD\Visual Impact Assessment\U167_VIA_Fig10_UplandViewshed.mxd

Date: 11/30/2022

Maryland Offshore Wind Project
Offshore Maryland and Delaware

Figure 10
Onshore Substation Viewshed

Legend

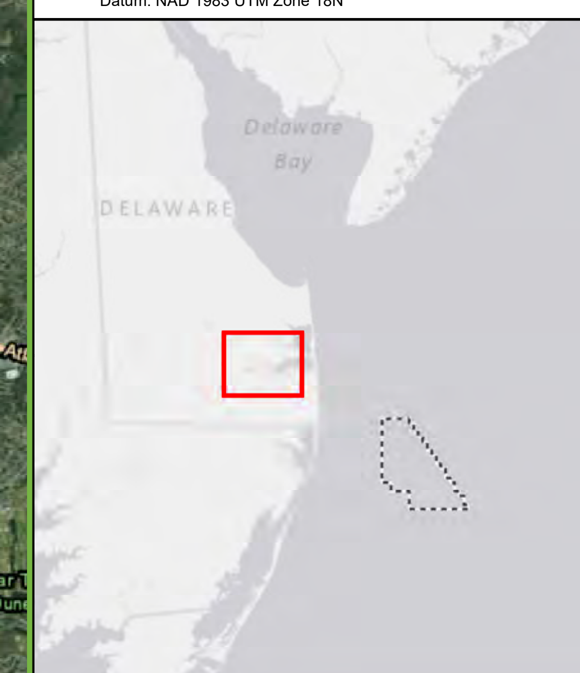
- US Wind Lease Area
- Substation LiDAR Viewshed (60' PDE)

0 0.5 1 Miles

0 1 2 Kilometers

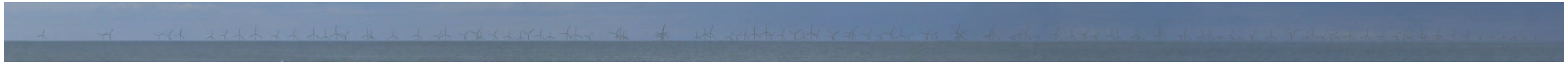
Source: 1) ESRI, Imagery, Various Dates
2) USGS, DE LiDAR, 2014

Datum: NAD 1983 UTM Zone 18N



Attachment H-2. US Wind-Prepared Simulations, Maryland Wind Project

Detail



VIEWING INSTRUCTIONS: To approximate the field of view represented by a 14.5" panorama it should be printed on an 11" x 17" sheet of paper and viewed from 7 inches away[1]. If viewed in a digital format (i.e. on screen), then similar size and distance should be used. In all cases care must be taken to not over or underrepresent the visual contrasts[2]. Typical binocular human field of view is assumed to be 124-degrees horizontal and 55-degrees vertical. See Sheet 1 for citations.

3. ASSATEAGUE ISLAND NATIONAL SEASHORE, MARYLAND PANORAMA VIEW WITH SIMULATION, MORNING (8:53 AM)

Maryland Offshore Wind Project Visual Impact Assessment Simulations

Sheet 4

TRC

3. ASSATEAGUE ISLAND NATIONAL SEASHORE, MARYLAND
SINGLE FRAME (50-mm LENS) SIMULATION, MID-DAY (2:52 PM)

Maryland Offshore Wind Project Visual Impact Assessment Simulations

Sheet 5

TRC

VIEWING INSTRUCTIONS: To approximate the field of view represented by a 14.5" single frame simulation captured with a 50-mm lens it should be printed on an 11" x 17" sheet of paper and viewed from 21 inches away[1]. If viewed in a digital format (i.e. on screen) then similar size and distance should be used. In all cases care must be taken to not over or under represent the visual contrasts[2]. See Sheet 1 for citations.

VIEWING INSTRUCTIONS: To approximate the field of view represented by a 14.5" single frame simulation captured with a 50-mm lens it should be printed on an 11" x 17" sheet of paper and viewed from 21 inches away[1]. If viewed in a digital format (i.e. on screen) then similar size and distance should be used. In all cases care must be taken to not over or under represent the visual contrasts[2]. See Sheet 1 for citations.

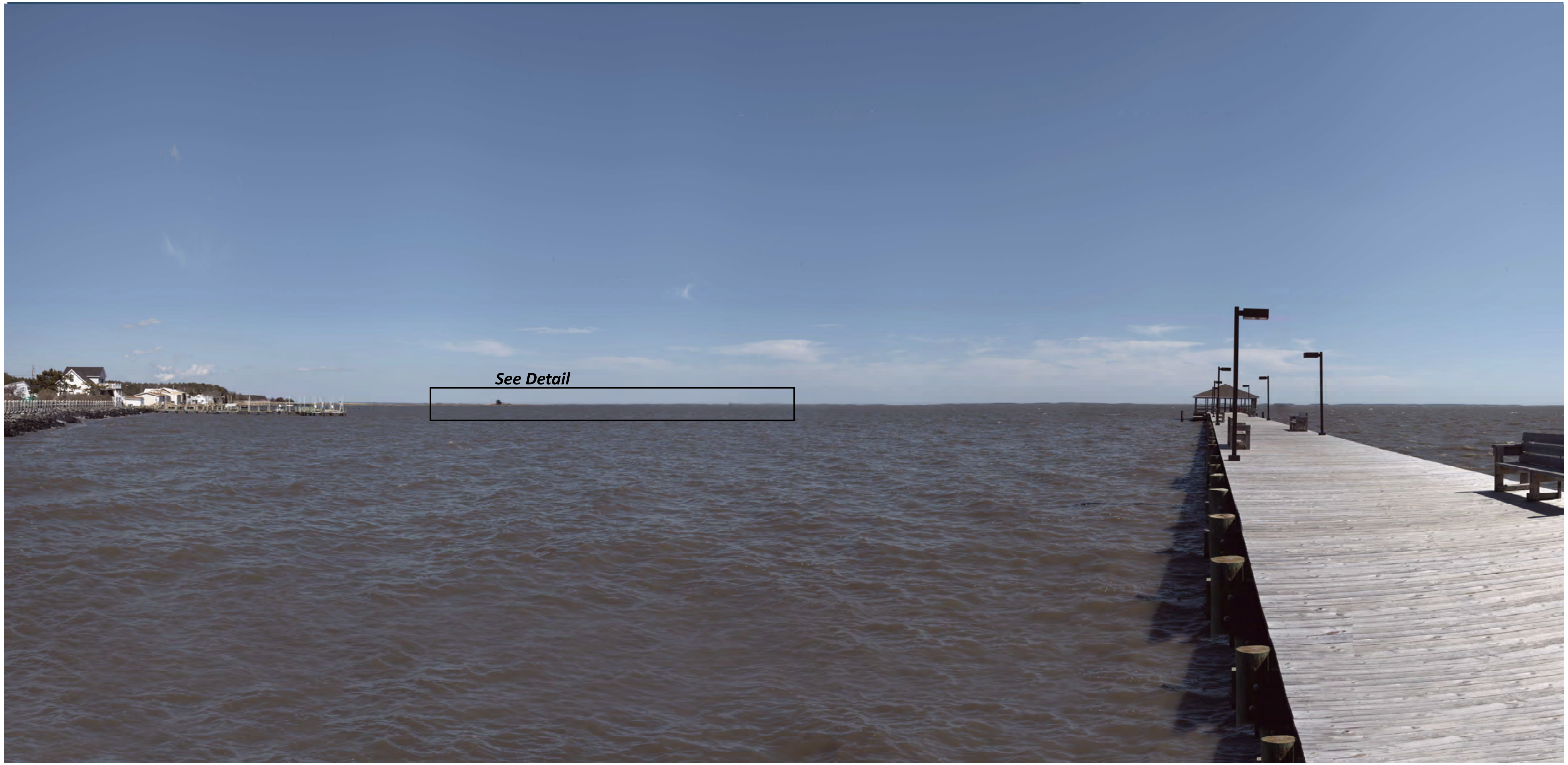
3. ASSATEAGUE ISLAND NATIONAL SEASHORE, MARYLAND

SINGLE FRAME (50-mm LENS) SIMULATION, LATE AFTERNOON (5:38 PM)

Maryland Offshore Wind Project Visual Impact Assessment Simulations

TRC

Detail



VIEWING INSTRUCTIONS: To approximate the field of view represented by a 14.5" panorama it should be printed on an 11" x 17" sheet of paper and viewed from 7 inches away[1]. If viewed in a digital format (i.e. on screen) then similar size and distance should be used. In all cases care must be taken to not over or underrepresent the visual contrasts[2]. Typical binocular human field of view is assumed to be 124-degrees horizontal and 55-degrees vertical. See Sheet 1 for citations.

4. MANSION HOUSE, MARYLAND
PANORAMA VIEW WITH SIMULATION, MID-DAY (1:21 PM)

Maryland Offshore Wind Project Visual Impact Assessment Simulations

Sheet 4

TRC

VIEWING INSTRUCTIONS: To approximate the field of view represented by a 14.5" single frame simulation captured with a 50-mm lens it should be printed on an 11" x 17" sheet of paper and viewed from 21 inches away[1]. If viewed in a digital format (i.e. on screen) then similar size and distance should be used. In all cases care must be taken to not over or under represent the visual contrasts[2]. See Sheet 1 for citations.

4. MANSION HOUSE, MARYLAND

SINGLE FRAME (50-mm LENS) SIMULATION, MORNING (8:23 AM)

Maryland Offshore Wind Project Visual Impact Assessment Simulations

Sheet 5

TRC

VIEWING INSTRUCTIONS: To approximate the field of view represented by a 14.5” single frame simulation captured with a 50-mm lens it should be printed on an 11” x 17” sheet of paper and viewed from 21 inches away[1]. If viewed in a digital format (i.e. on screen) then similar size and distance should be used. In all cases care must be taken to not over or under represent the visual contrasts[2]. See Sheet 1 for citations.

4. MANSION HOUSE, MARYLAND

SINGLE FRAME (50-mm LENS) SIMULATION, LATE AFTERNOON (5:47 PM)

Maryland Offshore Wind Project Visual Impact Assessment Simulations

Sheet 6

TRC

Detail

VIEWING INSTRUCTIONS: To approximate the field of view represented by a 14.5" panorama it should be printed on an 11" x 17" sheet of paper and viewed from 7 inches away[1]. If viewed in a digital format (i.e. on screen) then similar size and distance should be used. In all cases care must be taken to not over or underrepresent the visual contrasts[2]. Typical binocular human field of view is assumed to be 124-degrees horizontal and 55-degrees vertical. See Sheet 1 for citations.

6. 84TH STREET BEACH, OCEAN CITY, MARYLAND

PANORAMA VIEW WITH SIMULATION, MID-DAY (1:00 PM)

Maryland Offshore Wind Project Visual Impact Assessment Simulations

Sheet 4

TRC

6. 84TH STREET BEACH, OCEAN CITY, MARYLAND
SINGLE FRAME (50-mm LENS) SIMULATION, MORNING (6:22 AM)

Maryland Offshore Wind Project Visual Impact Assessment Simulations

Sheet 5

VIEWING INSTRUCTIONS: To approximate the field of view represented by a 14.5” single frame simulation captured with a 50-mm lens it should be printed on an 11” x 17” sheet of paper and viewed from 21 inches away[1]. If viewed in a digital format (i.e. on screen) then similar size and distance should be used. In all cases care must be taken to not over or underrepresent the visual contrasts[2]. See Sheet 1 for citations.

VIEWING INSTRUCTIONS: To approximate the field of view represented by a 14.5" single frame simulation captured with a 50-mm lens it should be printed on an 11" x 17" sheet of paper and viewed from 21 inches away[1]. If viewed in a digital format (i.e. on screen) then similar size and distance should be used. In all cases care must be taken to not over or underrepresent the visual contrasts[2]. See Sheet 1 for citations.

6. 84TH STREET BEACH, OCEAN CITY, MARYLAND
SINGLE FRAME (50-mm LENS) SIMULATION, LATE AFTERNOON (5:00 PM)

Maryland Offshore Wind Project Visual Impact Assessment Simulations

Detail

VIEWING INSTRUCTIONS: To approximate the field of view represented by a 14.5" panorama it should be printed on an 11" x 17" sheet of paper and viewed from 7 inches away[1]. If viewed in a digital format (i.e. on screen) then similar size and distance should be used. In all cases care must be taken to not over or underrepresent the visual contrasts[2]. Typical binocular human field of view is assumed to be 124-degrees horizontal and 55-degrees vertical. See Sheet 1 for citations.

15. BETHANY BEACH, DELAWARE

PANORAMA VIEW WITH SIMULATION, LATE AFTERNOON (3:51 PM)

Maryland Offshore Wind Project Visual Impact Assessment Simulations

Sheet 4

TRC

VIEWING INSTRUCTIONS: To approximate the field of view represented by a 14.5” single frame simulation captured with a 50-mm lens it should be printed on an 11” x 17” sheet of paper and viewed from 21 inches away[1]. If viewed in a digital format (i.e. on screen) then similar size and distance should be used. In all cases care must be taken to not over or underrepresent the visual contrasts[2]. See Sheet 1 for citations.

15. BETHANY BEACH, DELAWARE
SINGLE FRAME (50-mm LENS) SIMULATION, MORNING (9:20 AM)

Maryland Offshore Wind Project Visual Impact Assessment Simulations

Sheet 5

15. BETHANY BEACH, DELAWARE

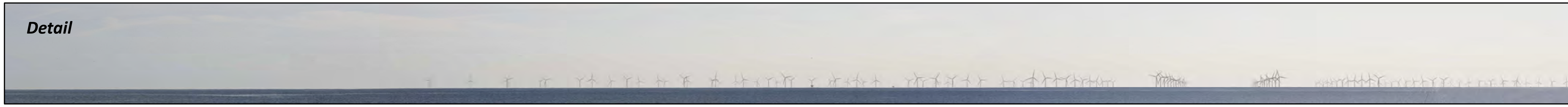
SINGLE FRAME (50-mm LENS) SIMULATION, MID-DAY (12:23 PM)

Maryland Offshore Wind Project Visual Impact Assessment Simulations

Sheet 6

TRC

VIEWING INSTRUCTIONS: To approximate the field of view represented by a 14.5” single frame simulation captured with a 50-mm lens it should be printed on an 11” x 17” sheet of paper and viewed from 21 inches away[1]. If viewed in a digital format (i.e. on screen) then similar size and distance should be used. In all cases care must be taken to not over or under represent the visual contrasts[2]. See Sheet 1 for citations.



VIEWING INSTRUCTIONS: To approximate the field of view represented by a 14.5" panorama it should be printed on an 11" x 17" sheet of paper and viewed from 7 inches away[1]. If viewed in a digital format (i.e. on screen) then similar size and distance should be used. In all cases care must be taken to not over or underrepresent the visual contrasts[2]. Typical binocular human field of view is assumed to be 124-degrees horizontal and 55-degrees vertical. See Sheet 1 for citations.

18. OCEAN CITY BOARDWALK, MARYLAND
PANORAMA VIEW WITH SIMULATION, MORNING (8:21 AM)

Maryland Offshore Wind Project Visual Impact Assessment Simulations

Sheet 4

TRC

18. OCEAN CITY BOARDWALK, MARYLAND

SINGLE FRAME (50-mm LENS) SIMULATION, MID-DAY (12:45 PM)

Maryland Offshore Wind Project Visual Impact Assessment Simulations

Sheet 5

TRC

VIEWING INSTRUCTIONS: To approximate the field of view represented by a 14.5" single frame simulation captured with a 50-mm lens it should be printed on an 11" x 17" sheet of paper and viewed from 21 inches away[1]. If viewed in a digital format (i.e. on screen) then similar size and distance should be used. In all cases care must be taken to not over or underrepresent the visual contrasts[2]. See Sheet 1 for citations.

18. OCEAN CITY BOARDWALK, MARYLAND
SINGLE FRAME (50-mm LENS) SIMULATION, LATE AFTERNOON (4:30 PM)

Maryland Offshore Wind Project Visual Impact Assessment Simulations

Sheet 6

TRC

VIEWING INSTRUCTIONS: To approximate the field of view represented by a 14.5” single frame simulation captured with a 50-mm lens it should be printed on an 11” x 17” sheet of paper and viewed from 21 inches away[1]. If viewed in a digital format (i.e. on screen) then similar size and distance should be used. In all cases care must be taken to not over or underrepresent the visual contrasts[2]. See Sheet 1 for citations.

Detail

VIEWING INSTRUCTIONS: To approximate the field of view represented by a 14.5" panorama it should be printed on an 11" x 17" sheet of paper and viewed from 7 inches away[1]. If viewed in a digital format (i.e. on screen) then similar size and distance should be used. In all cases care must be taken to not over or under represent the visual contrasts[2]. Typical binocular human field of view is assumed to be 124-degrees horizontal and 55-degrees vertical. See Sheet 1 for citations.

19. INDIAN RIVER LIFE SAVING STATION, DELAWARE
PANORAMA VIEW WITH SIMULATION, MORNING (8:50 AM)

Maryland Offshore Wind Project Visual Impact Assessment Simulations

Sheet 4

TRC

VIEWING INSTRUCTIONS: To approximate the field of view represented by a 14.5” single frame simulation captured with a 50-mm lens it should be printed on an 11” x 17” sheet of paper and viewed from 21 inches away[1]. If viewed in a digital format (i.e. on screen) then similar size and distance should be used. In all cases care must be taken to not over or under represent the visual contrasts[2]. See Sheet 1 for citations.

19. INDIAN RIVER LIFE SAVING STATION, DELAWARE
SINGLE FRAME (50-mm LENS) SIMULATION, MID-DAY (1:16 PM)

Maryland Offshore Wind Project Visual Impact Assessment Simulations

Sheet 5

19. INDIAN RIVER LIFE SAVING STATION, DELAWARE
SINGLE FRAME (50-mm LENS) SIMULATION, LATE AFTERNOON (5:07 PM)

VIEWING INSTRUCTIONS: To approximate the field of view represented by a 14.5" single frame simulation captured with a 50-mm lens it should be printed on an 11" x 17" sheet of paper and viewed from 21 inches away[1]. If viewed in a digital format (i.e. on screen) then similar size and distance should be used. In all cases care must be taken to not over or under represent the visual contrasts[2]. See Sheet 1 for citations.

Detail

VIEWING INSTRUCTIONS: To approximate the field of view represented by a 14.5" panorama it should be printed on an 11" x 17" sheet of paper and viewed from 7 inches away[1]. If viewed in a digital format (i.e. on screen) then similar size and distance should be used. In all cases care must be taken to not over or underrepresent the visual contrasts[2]. Typical binocular human field of view is assumed to be 124-degrees horizontal and 55-degrees vertical. See Sheet 1 for citations.

20. DELAWARE SEASHORE STATE PARK, DELAWARE
PANORAMA VIEW WITH SIMULATION, MORNING (8:40 AM)

Maryland Offshore Wind Project Visual Impact Assessment Simulations

Sheet 4

TRC

VIEWING INSTRUCTIONS: To approximate the field of view represented by a 14.5” single frame simulation captured with a 50-mm lens it should be printed on an 11” x 17” sheet of paper and viewed from 21 inches away[1]. If viewed in a digital format (i.e. on screen) then similar size and distance should be used. In all cases care must be taken to not over or underrepresent the visual contrasts[2]. See Sheet 1 for citations.

20. DELAWARE SEASHORE STATE PARK, DELAWARE
SINGLE FRAME (50-mm LENS) SIMULATION, MID-DAY (1:30 PM)

Maryland Offshore Wind Project Visual Impact Assessment Simulations

Sheet 5

TRC

VIEWING INSTRUCTIONS: To approximate the field of view represented by a 14.5” single frame simulation captured with a 50-mm lens it should be printed on an 11” x 17” sheet of paper and viewed from 21 inches away[1]. If viewed in a digital format (i.e. on screen) then similar size and distance should be used. In all cases care must be taken to not over or underrepresent the visual contrasts[2]. See Sheet 1 for citations.

20. DELAWARE SEASHORE STATE PARK, DELAWARE
SINGLE FRAME (50-mm LENS) SIMULATION, LATE AFTERNOON (4:19 PM)

Maryland Offshore Wind Project Visual Impact Assessment Simulations

Sheet 6

TRC

Detail

VIEWING INSTRUCTIONS: To approximate the field of view represented by a 14.5" panorama it should be printed on an 11" x 17" sheet of paper and viewed from 7 inches away[1]. If viewed in a digital format (i.e. on screen) then similar size and distance should be used. In all cases care must be taken to not over or underrepresent the visual contrasts[2]. Typical binocular human field of view is assumed to be 124-degrees horizontal and 55-degrees vertical. See Sheet 1 for citations.

21. CAPE MAY LIGHTHOUSE, CAPE MAY NEW JERSEY
ELEVATED (146') PANORAMA VIEW WITH SIMULATION, MID-DAY (12:20 PM)

Maryland Offshore Wind Project Visual Impact Assessment Simulations

Sheet 4

TRC

VIEWING INSTRUCTIONS: To approximate the field of view represented by a 14.5” single frame simulation captured with a 50-mm lens it should be printed on an 11” x 17” sheet of paper and viewed from 21 inches away[1]. If viewed in a digital format (i.e. on screen) then similar size and distance should be used. In all cases care must be taken to not over or under represent the visual contrasts[2]. See Sheet 1 for citations.

21. CAPE MAY LIGHTHOUSE, CAPE MAY NEW JERSEY
SINGLE FRAME (50-mm LENS) SIMULATION, MORNING (7:58 AM)

Maryland Offshore Wind Project Visual Impact Assessment Simulations

21. CAPE MAY LIGHTHOUSE, CAPE MAY NEW JERSEY

SINGLE FRAME (50-mm LENS) SIMULATION, LATE AFTERNOON (4:53 PM)

Maryland Offshore Wind Project Visual Impact Assessment Simulations

Sheet 6

VIEWING INSTRUCTIONS: To approximate the field of view represented by a 14.5" single frame simulation captured with a 50-mm lens it should be printed on an 11" x 17" sheet of paper and viewed from 21 inches away[1]. If viewed in a digital format (i.e. on screen) then similar size and distance should be used. In all cases care must be taken to not over or under represent the visual contrasts[2]. See Sheet 1 for citations.

Detail

VIEWING INSTRUCTIONS: To approximate the field of view represented by a 14.5" panorama it should be printed on an 11" x 17" sheet of paper and viewed from 7 inches away[1]. If viewed in a digital format (i.e. on screen) then similar size and distance should be used. In all cases care must be taken to not over or underrepresent the visual contrasts[2]. Typical binocular human field of view is assumed to be 124-degrees horizontal and 55-degrees vertical. See Sheet 1 for citations.

22. FORT MILES HISTORIC DISTRICT, CAPE HENLOPEN, DELAWARE

PANORAMA VIEW WITH SIMULATION, LATE AFTERNOON (5:17 PM)

Maryland Offshore Wind Project Visual Impact Assessment Simulations

Sheet 4

TRC

22. FORT MILES HISTORIC DISTRICT, CAPE HENLOPEN, DELAWARE
SINGLE FRAME (50-mm LENS) SIMULATION, MORNING (8:09 AM)

Maryland Offshore Wind Project Visual Impact Assessment Simulations

Sheet 5

VIEWING INSTRUCTIONS: To approximate the field of view represented by a 14.5" single frame simulation captured with a 50-mm lens it should be printed on an 11" x 17" sheet of paper and viewed from 21 inches away[1]. If viewed in a digital format (i.e. on screen) then similar size and distance should be used. In all cases care must be taken to not over or underrepresent the visual contrasts[2]. See Sheet 1 for citations.

22. FORT MILES HISTORIC DISTRICT, CAPE HENLOPEN, DELAWARE
SINGLE FRAME (50-mm LENS) SIMULATION, MID-DAY (2:28 PM)

Maryland Offshore Wind Project Visual Impact Assessment Simulations

Sheet 6

TRC

VIEWING INSTRUCTIONS: To approximate the field of view represented by a 14.5” single frame simulation captured with a 50-mm lens it should be printed on an 11” x 17” sheet of paper and viewed from 21 inches away[1]. If viewed in a digital format (i.e. on scree) then similar size and distance should be used. In all cases care must be taken to not over or underrepresent the visual contrasts[2]. See Sheet 1 for citations.

Detail

VIEWING INSTRUCTIONS: To approximate the field of view represented by a 14.5" panorama it should be printed on an 11" x 17" sheet of paper and viewed from 7 inches away[1]. If viewed in a digital format (i.e. on screen) then similar size and distance should be used. In all cases care must be taken to not over or underrepresent the visual contrasts[2]. Typical binocular human field of view is assumed to be 124-degrees horizontal and 55-degrees vertical. See Sheet 1 for citations.

23. WILDWOOD BOARDWALK, NEW JERSEY
PANORAMA VIEW WITH SIMULATION, LATE AFTERNOON (6:20 PM)

Maryland Offshore Wind Project Visual Impact Assessment Simulations

Sheet 4

TRC

VIEWING INSTRUCTIONS: To approximate the field of view represented by a 14.5" single frame simulation captured with a 50-mm lens it should be printed on an 11" x 17" sheet of paper and viewed from 21 inches away[1]. If viewed in a digital format (i.e on screen) then similar size and distance should be used. In all cases care must be taken to not over or underrepresent the visual contrasts[2]. See Sheet 1 for citations.

23. WILDWOOD BOARDWALK, NEW JERSEY
SINGLE FRAME (50-mm LENS) SIMULATION, MORNING (9:59 AM)

Maryland Offshore Wind Project Visual Impact Assessment Simulations

Sheet 5

TRC

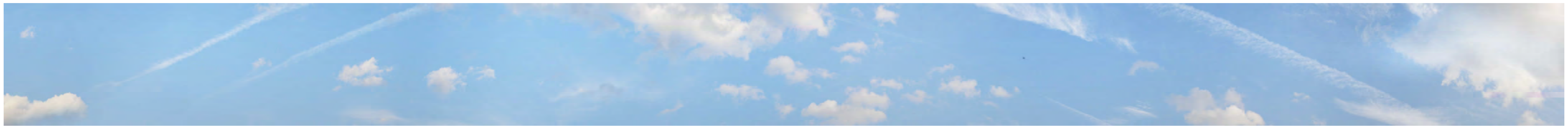
VIEWING INSTRUCTIONS: To approximate the field of view represented by a 14.5" single frame simulation captured with a 50-mm lens it should be printed on an 11" x 17" sheet of paper and viewed from 21 inches away[1]. If viewed in a digital format (i.e. on screen) then similar size and distance should be used. In all cases care must be taken to not over or underrepresent the visual contrasts[2]. See Sheet 1 for citations.

23. WILDWOOD BOARDWALK, NEW JERSEY
SINGLE FRAME (50-mm LENS) SIMULATION, MID-DAY (1:34 PM)

Maryland Offshore Wind Project Visual Impact Assessment Simulations

TRC

Detail



VIEWING INSTRUCTIONS: To approximate the field of view represented by a 14.5" panorama it should be printed on an 11" x 17" sheet of paper and viewed from 7 inches away[1]. If viewed in a digital format (i.e. on screen), then similar size and distance should be used. In all cases care must be taken to not over or underrepresent the visual contrasts[2]. Typical binocular human field of view is assumed to be 124-degrees horizontal and 55-degrees vertical. See Sheet 1 for citations.

24. REHOBOTH BEACH BOARDWALK, DELAWARE
PANORAMA VIEW WITH SIMULATION, LATE AFTERNOON (6:30 PM)

Maryland Offshore Wind Project Visual Impact Assessment Simulations

Sheet 4

TRC

24. REHOBOTH BEACH BOARDWALK, DELAWARE
SINGLE FRAME (50-mm LENS) SIMULATION, MORNING (10:43 AM)

Maryland Offshore Wind Project Visual Impact Assessment Simulations

Sheet 5

VIEWING INSTRUCTIONS: To approximate the field of view represented by a 14.5” single frame simulation captured with a 50-mm lens it should be printed on an 11” x 17” sheet of paper and viewed from 21 inches away[1]. If viewed in a digital format (i.e. on screen) then similar size and distance should be used. In all cases care must be taken to not over or underrepresent the visual contrasts[2]. See Sheet 1 for citations.

VIEWING INSTRUCTIONS: To approximate the field of view represented by a 14.5" single frame simulation captured with a 50-mm lens it should be printed on an 11" x 17" sheet of paper and viewed from 21 inches away[1]. If viewed in a digital format (i.e. on screen) then similar size and distance should be used. In all cases care must be taken to not over or underrepresent the visual contrasts[2]. See Sheet 1 for citations.

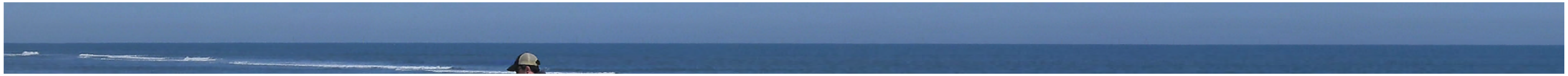
24. REHOBOTH BEACH BOARDWALK, DELAWARE

SINGLE FRAME (50-mm LENS) SIMULATION, MID-DAY (2:37 PM)

Maryland Offshore Wind Project Visual Impact Assessment Simulations

TRC

Detail



VIEWING INSTRUCTIONS: To approximate the field of view represented by a 14.5" panorama it should be printed on an 11" x 17" sheet of paper and viewed from 7 inches away[1]. If viewed in a digital format (i.e. on screen) then similar size and distance should be used. In all cases care must be taken to not over or underrepresent the visual contrasts[2]. Typical binocular human field of view is assumed to be 124-degrees horizontal and 55-degrees vertical. See Sheet 1 for citations.

25. ASSATEAGUE BEACH (TOMS COVE), VIRGINIA
PANORAMA VIEW WITH SIMULATION, MID-DAY (1:00 PM)

Maryland Offshore Wind Project Visual Impact Assessment Simulations

Sheet 4

TRC

VIEWING INSTRUCTIONS: To approximate the field of view represented by a 14.5" single frame simulation captured with a 50-mm lens it should be printed on an 11" x 17" sheet of paper and viewed from 21 inches away[1]. If viewed in a digital format (i.e. on screen) then similar size and distance should be used. In all cases care must be taken to not over or underrepresent the visual contrasts[2]. See Sheet 1 for citations.

25. ASSATEAGUE BEACH (TOMS COVE), VIRGINIA

SINGLE FRAME (50-mm LENS) SIMULATION, MORNING (10:06 AM)

Maryland Offshore Wind Project Visual Impact Assessment Simulations

Sheet 5

TRC

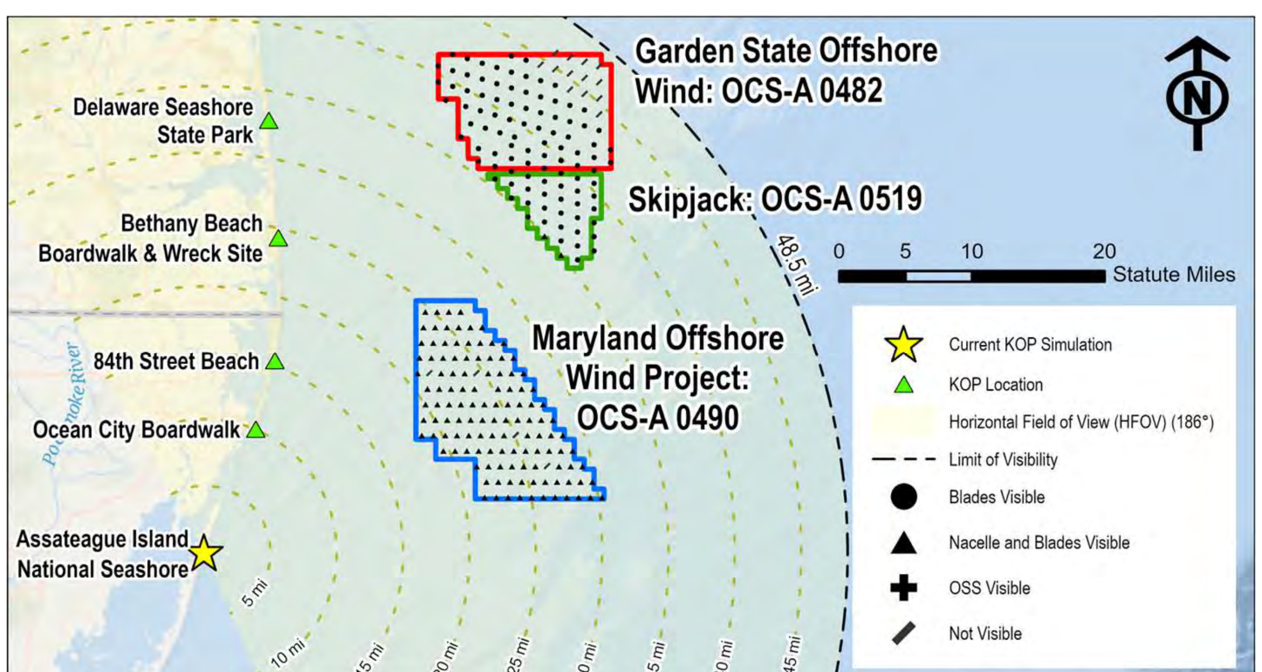
VIEWING INSTRUCTIONS: To approximate the field of view represented by a 14.5” single frame simulation captured with a 50-mm lens it should be printed on an 11” x 17” sheet of paper and viewed from 21 inches away[1]. If viewed in a digital format (i.e. on screen) then similar size and distance should be used. In all cases care must be taken to not over or underrepresent the visual contrasts[2]. See Sheet 1 for citations.

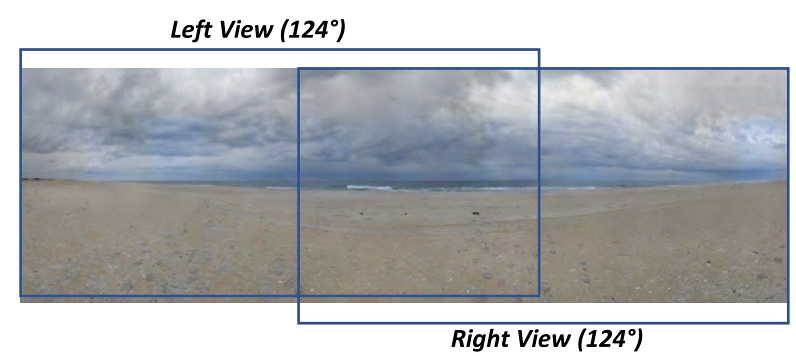
25. ASSATEAGUE BEACH (TOMS COVE), VIRGINIA
SINGLE FRAME (50-mm LENS) SIMULATION, LATE AFTERNOON (4:29 PM)
Maryland Offshore Wind Project Visual Impact Assessment Simulations

Sheet 6

TRC

Attachment H-3. US Wind-Prepared Simulations, Cumulative Offshore Wind Projects





Total Panorama Field of View Extents (186°)

VIEWING INSTRUCTIONS: To approximate the field of view represented by a single 11" panorama it should be printed on an 11" x 17" sheet of paper and viewed from 5 inches away[1]. If viewed in a digital format (i.e. on screen) then similar size and distance should be used. In all cases care must be taken to not over or underrepresent the visual contrasts[2]. Typical binocular human field of view is assumed to be 124-degrees horizontal and 55-degrees vertical. See Sheet 1 for citations.

KOP 3 ASSATEAGUE ISLAND NATIONAL SEASHORE, MARYLAND SUCCESSIVE 124° PANORAMAS (186° TOTAL), LEFT VIEW WITH SIMULATIONS

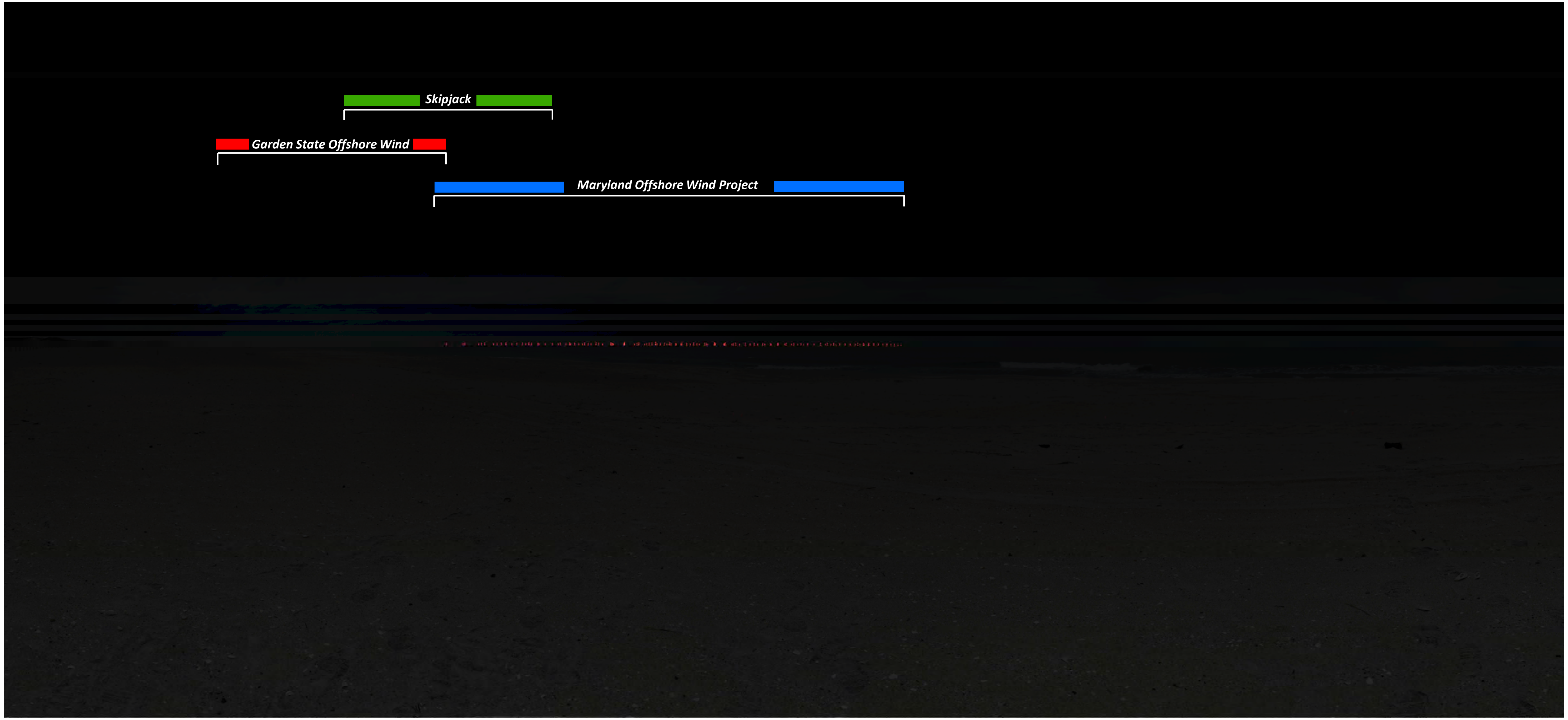
Maryland Offshore Wind Project Cumulative Visual Effects Assessment Simulations
Scenario 3, Project Construction by 2030

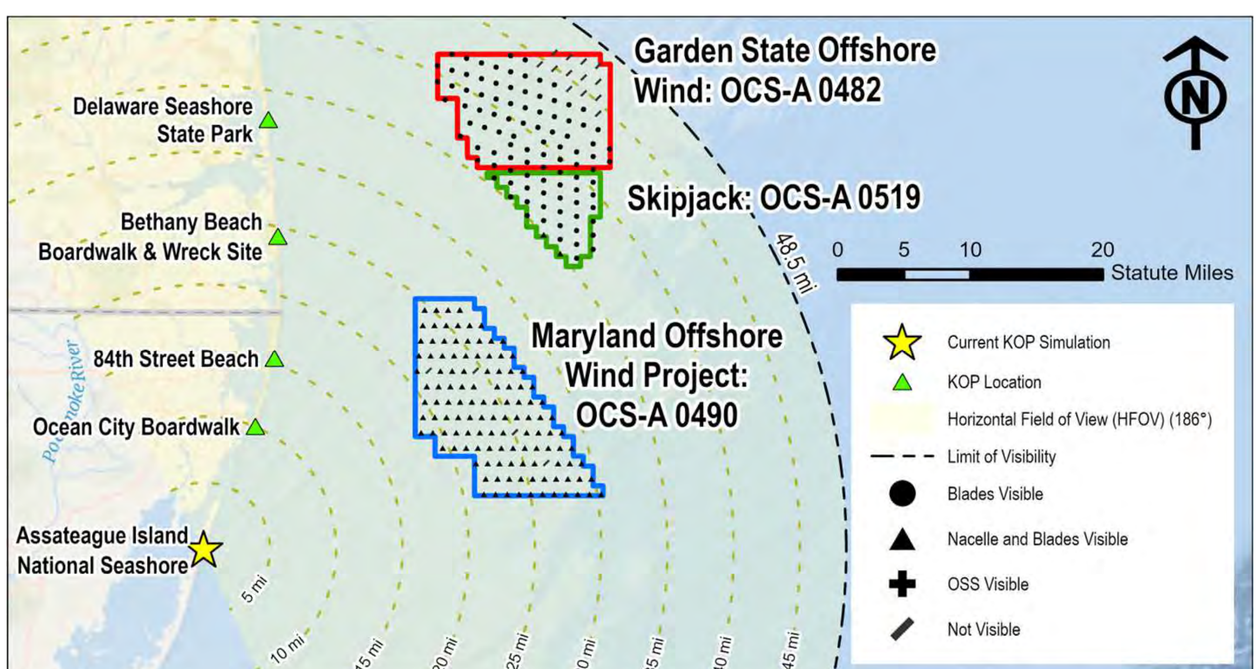
Sheet 6

TRC

KOP 3 ASSATEAGUE ISLAND NATIONAL SEASHORE, MARYLAND
124° PANORAMA WITH NIGHTTIME SIMULATIONS

Maryland Offshore Wind Project Cumulative Visual Effects Assessment Simulations
Scenario 3, Project Construction by 2030





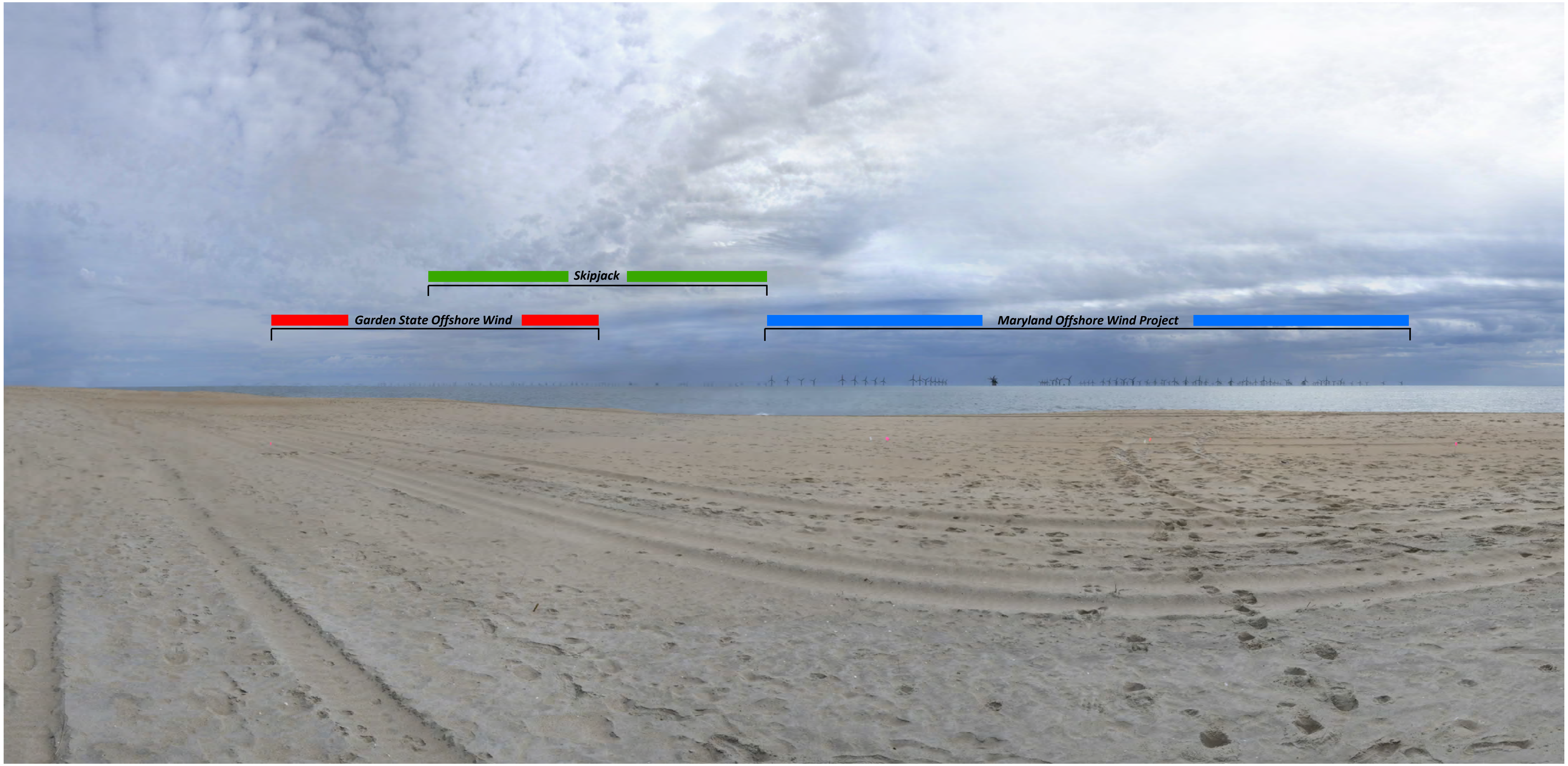
An Aircraft Detection Lighting System (ADLS) Efficacy Report, included with the Visual Impact Assessment, indicated that use of an ADLS would reduce aviation obstruction lighting by 99% and that lights of the Maryland Offshore Wind Project would be illuminated less than 6 hours each year. Multiple projects employing ADLS would be illuminated a small fraction of 1% of the year, if at all.

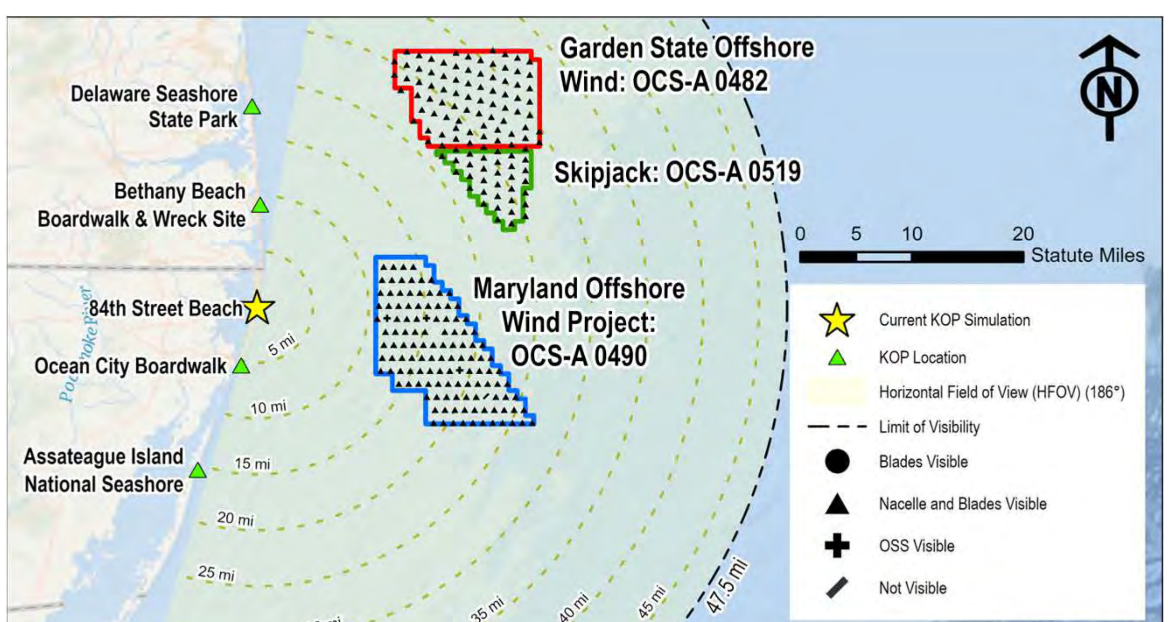
Left View (124°)

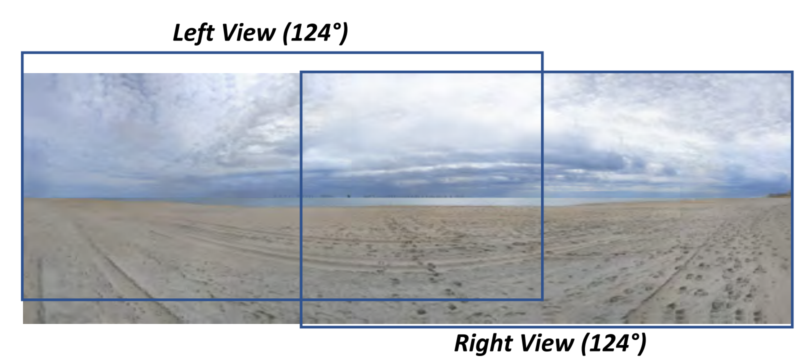
VIEWING INSTRUCTIONS: To approximate the field of view represented by a single 11" panorama it should be printed on an 11" x 17" sheet of paper and viewed from 5 inches away[1]. If viewed in a digital format (i.e. on screen) then similar size and distance should be used. In all cases care must be taken to not over or underrepresent the visual contrasts[2]. Typical binocular human field of view is assumed to be 124-degrees horizontal and 55-degrees vertical. See Sheet 1 for citations.

Sheet 8

TRC







Total Panorama Field of View Extents (186°)

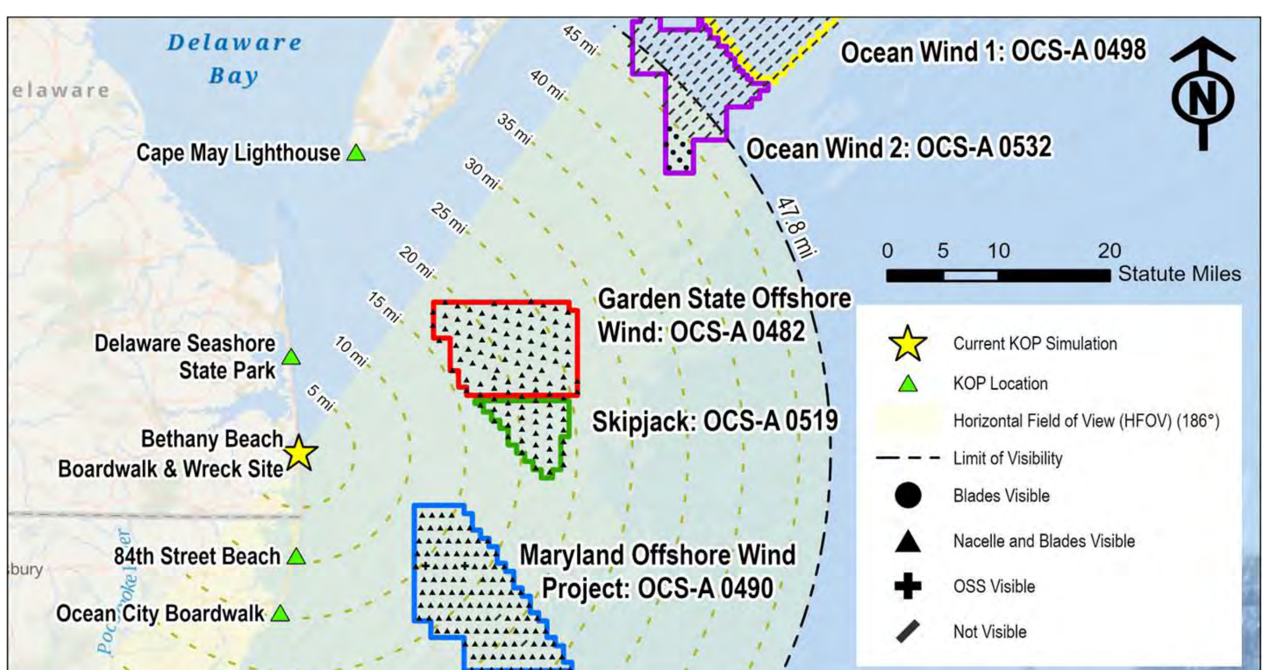
VIEWING INSTRUCTIONS: To approximate the field of view represented by a single 11" panorama it should be printed on an 11" x 17" sheet of paper and viewed from 5 inches away[1]. If viewed in a digital format (i.e. on screen) then similar size and distance should be used. In all cases care must be taken to not over or underrepresent the visual contrasts[2]. Typical binocular human field of view is assumed to be 124-degrees horizontal and 55-degrees vertical. See Sheet 1 for citations.

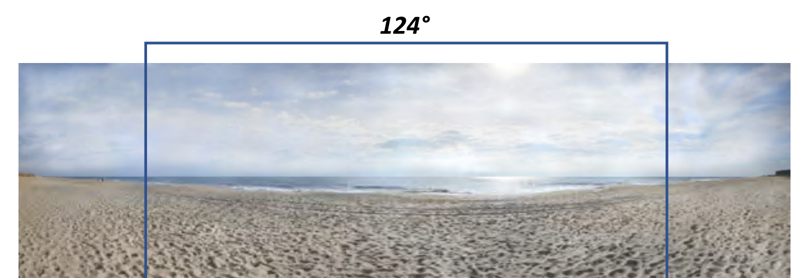
KOP 6: 84TH STREET BEACH, OCEAN CITY MARYLAND SUCCESSIVE 124° PANORAMAS (186° TOTAL), LEFT VIEW WITH SIMULATIONS

Maryland Offshore Wind Project Cumulative Visual Effects Assessment Simulations
Scenario 3, Project Construction by 2030

Sheet 6

TRC





Total Panorama Field of View Extents (186°)

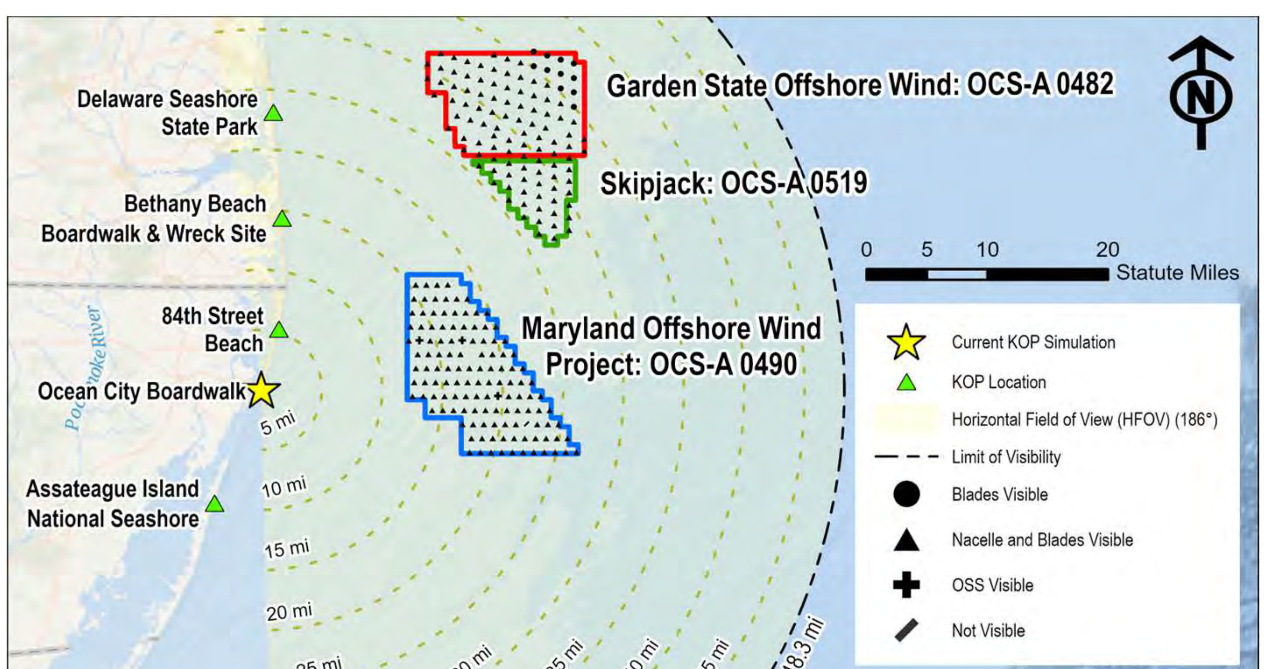
VIEWING INSTRUCTIONS: To approximate the field of view represented by a 14.5" panorama it should be printed on an 11" x 17" sheet of paper and viewed from 7 inches away[1]. If viewed in a digital format (i.e. on screen) then similar size and distance should be used. In all cases care must be taken to not over or underrepresent the visual contrasts[2]. Typical binocular human field of view is assumed to be 124-degrees horizontal and 55-degrees vertical. See Sheet 1 for citations.

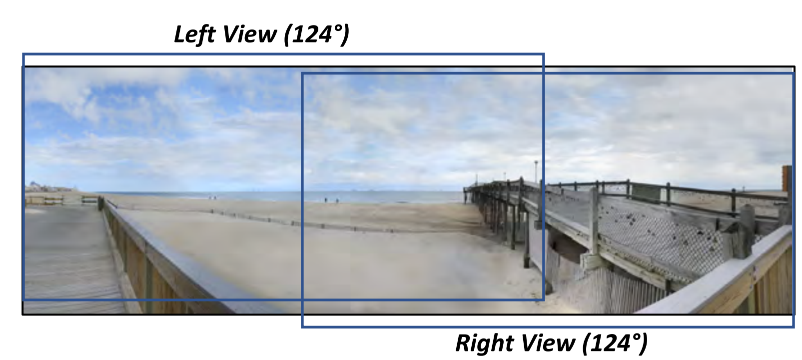
KOP 15: BETHANY BEACH, DELAWARE
PANORAMA VIEW (124°) WITH SIMULATIONS

Maryland Offshore Wind Project Cumulative Visual Effects Assessment Simulations
Scenario 3, Project Construction by 2030

Sheet 5

TRC





Total Panorama Field of View Extents (186°)

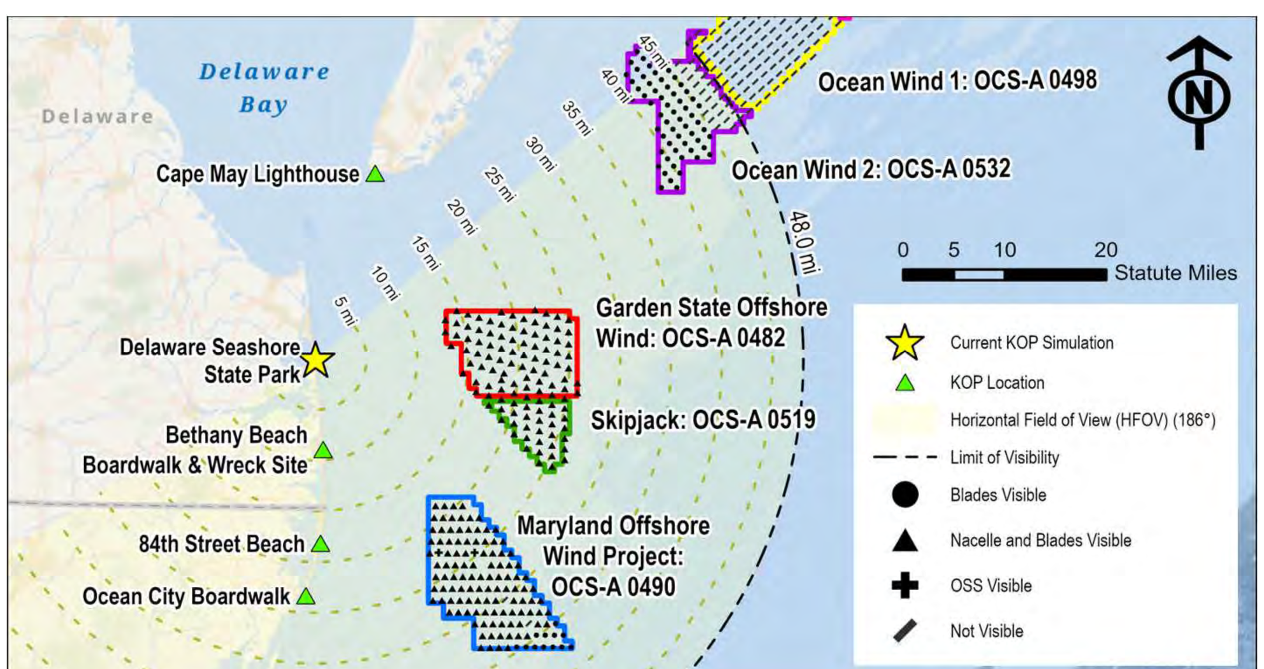
VIEWING INSTRUCTIONS: To approximate the field of view represented by a single 11" panorama it should be printed on an 11" x 17" sheet of paper and viewed from 5 inches away[1]. If viewed in a digital format (i.e. on screen) then similar size and distance should be used. In all cases care must be taken to not over or underrepresent the visual contrasts[2]. Typical binocular human field of view is assumed to be 124-degrees horizontal and 55-degrees vertical. See Sheet 1 for citations.

KOP 18: OCEAN CITY BOARDWALK, MARYLAND
SUCCESSIVE 124° PANORAMAS (186° TOTAL), LEFT VIEW WITH SIMULATIONS

Maryland Offshore Wind Project Cumulative Visual Effects Assessment Simulations
Scenario 3, Project Construction by 2030

Sheet 6

TRC



124°

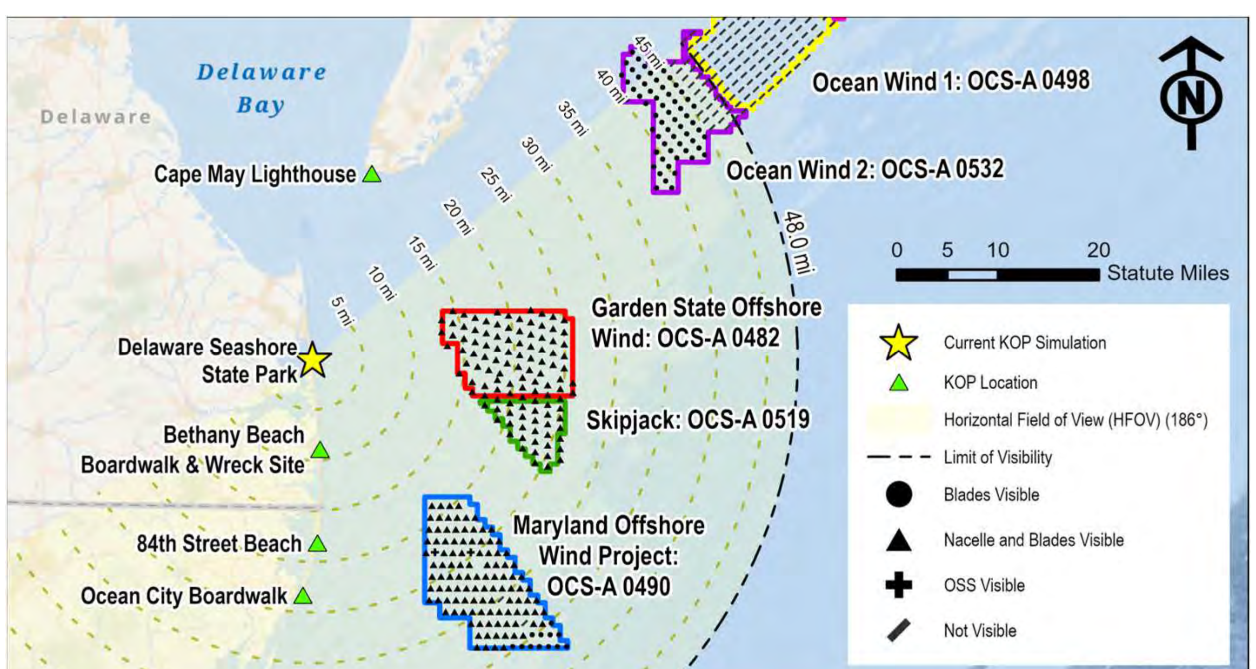
Total Panorama Field of View Extents (186°)

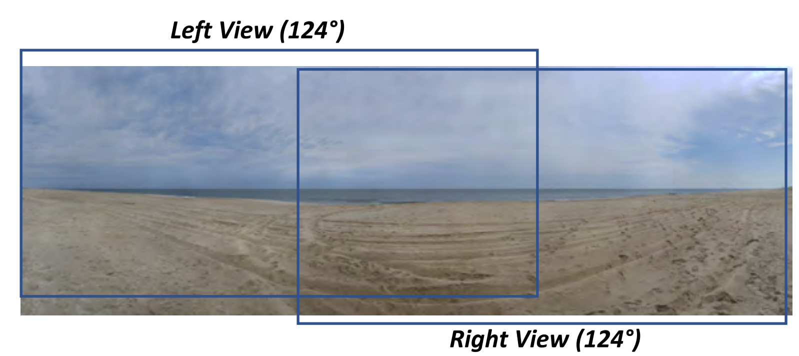
VIEWING INSTRUCTIONS: To approximate the field of view represented by a 14.5" panorama it should be printed on an 11" x 17" sheet of paper and viewed from 7 inches away[1]. If viewed in a digital format (i.e. on screen) then similar size and distance should be used. In all cases care must be taken to not over or underrepresent the visual contrasts[2]. Typical binocular human field of view is assumed to be 124-degrees horizontal and 55-degrees vertical. See Sheet 1 for citations.

KOP 20: DELAWARE SEASHORE STATE PARK, DELAWARE PANORAMA VIEW (124°) WITH SIMULATIONS

Maryland Offshore Wind Project Cumulative Visual Effects Assessment Simulations Scenario 3, Project Construction by 2030

Sheet 5





Total Panorama Field of View Extents (186°)

VIEWING INSTRUCTIONS: To approximate the field of view represented by a single 11” panorama it should be printed on an 11” x 17” sheet of paper and viewed from 5 inches away[1]. If viewed in a digital format (i.e. on screen) then similar size and distance should be used. In all cases care must be taken to not over or underrepresent the visual contrasts[2]. Typical binocular human field of view is assumed to be 124-degrees horizontal and 55-degrees vertical. See Sheet 1 for citations.

KOP 20: DELAWARE SEASHORE STATE PARK, DELAWARE
SUCCESSIVE 124° PANORAMAS (186° TOTAL), RIGHT VIEW WITH SIMULATIONS

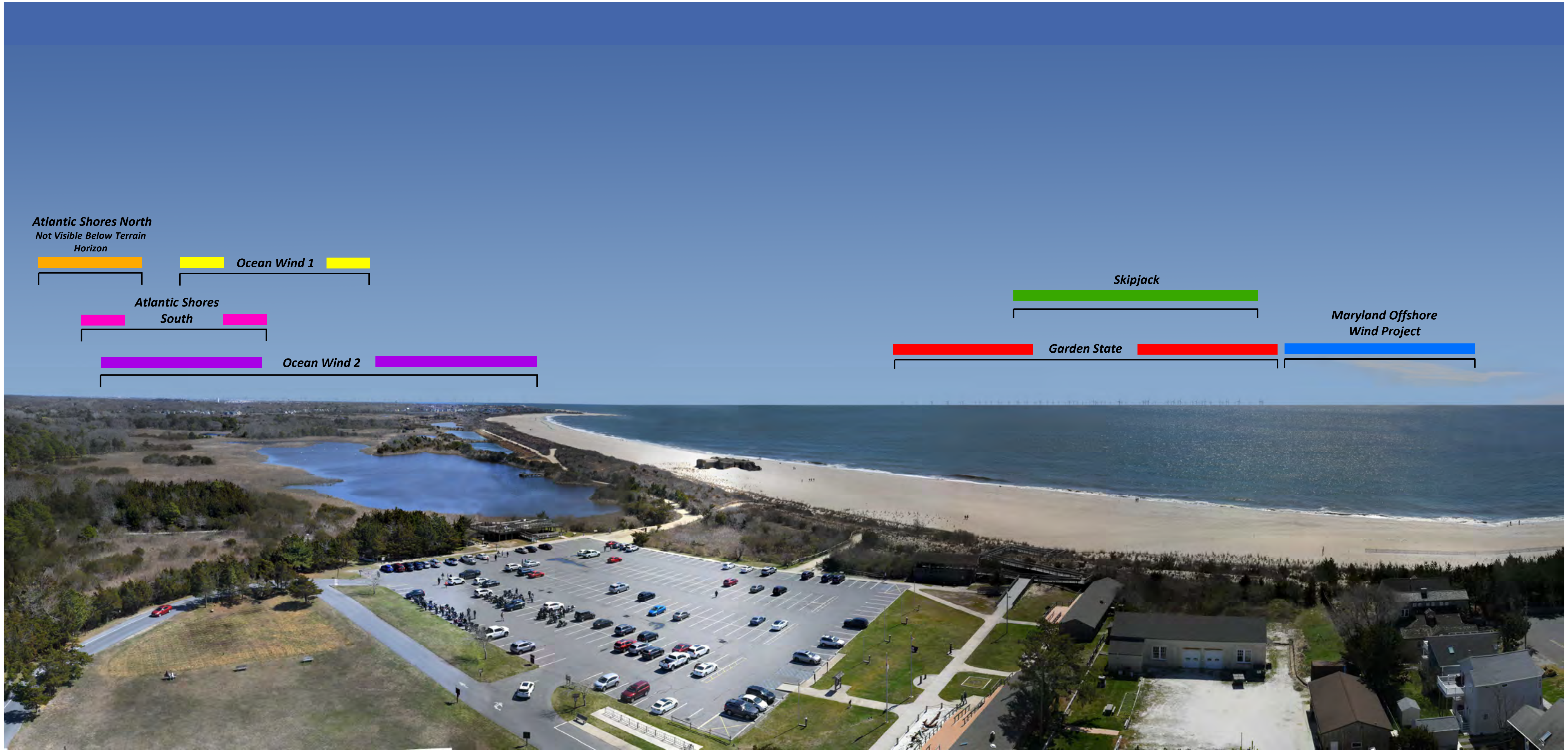
Maryland Offshore Wind Project Cumulative Visual Effects Assessment Simulations
Scenario 3, Project Construction by 2030

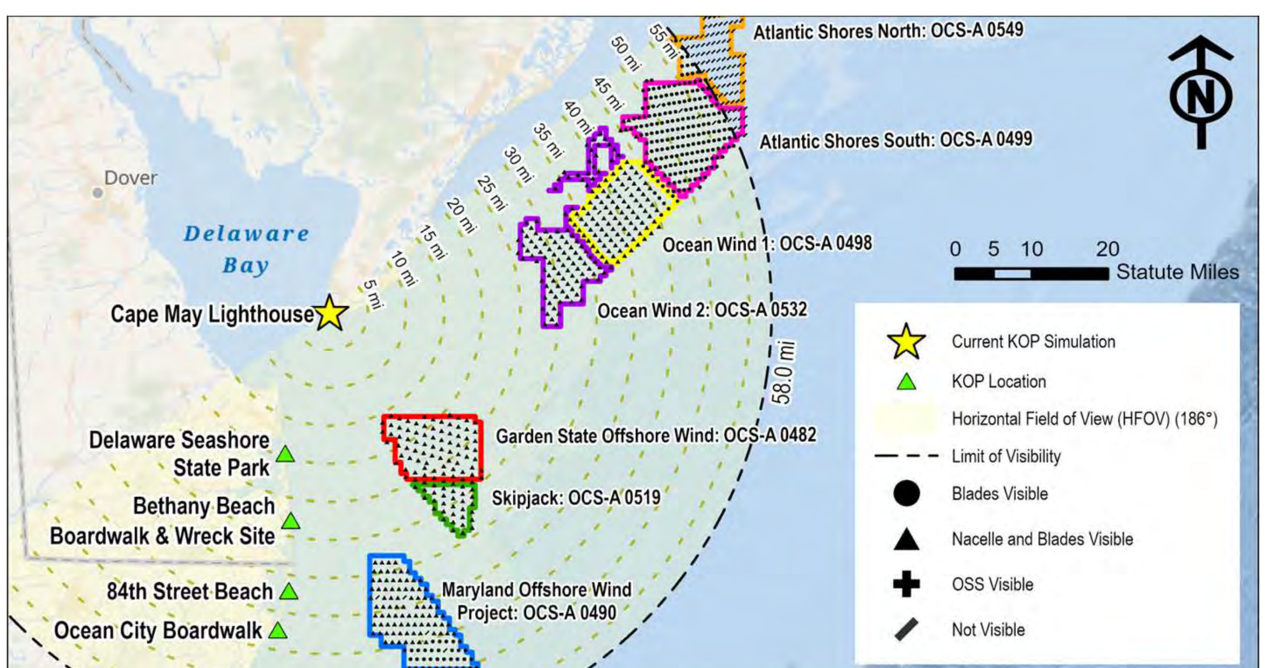
Sheet 7

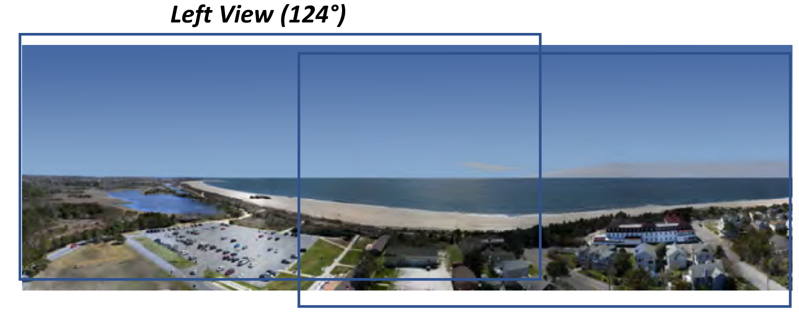
TRC

KOP 21: CAPE MAY LIGHTHOUSE, CAPE MAY NEW JERSEY
SUCCESSIVE 124° PANORAMAS (186° TOTAL), LEFT VIEW WITH SIMULATIONS

Maryland Offshore Wind Project Cumulative Visual Effects Assessment Simulations
Scenario 3, Project Construction by 2030







Total Panorama Field of View Extents (186°)

VIEWING INSTRUCTIONS: To approximate the field of view represented by a single 11" panorama it should be printed on an 11" x 17" sheet of paper and viewed from 5 inches away[1]. If viewed in a digital format (i.e. on screen) then similar size and distance should be used. In all cases care must be taken to not over or underrepresent the visual contrasts[2]. Typical binocular human field of view is assumed to be 124-degrees horizontal and 55-degrees vertical. See Sheet 1 for citations.

Sheet 6

TRC

Attachment H-4. Field of View Analysis

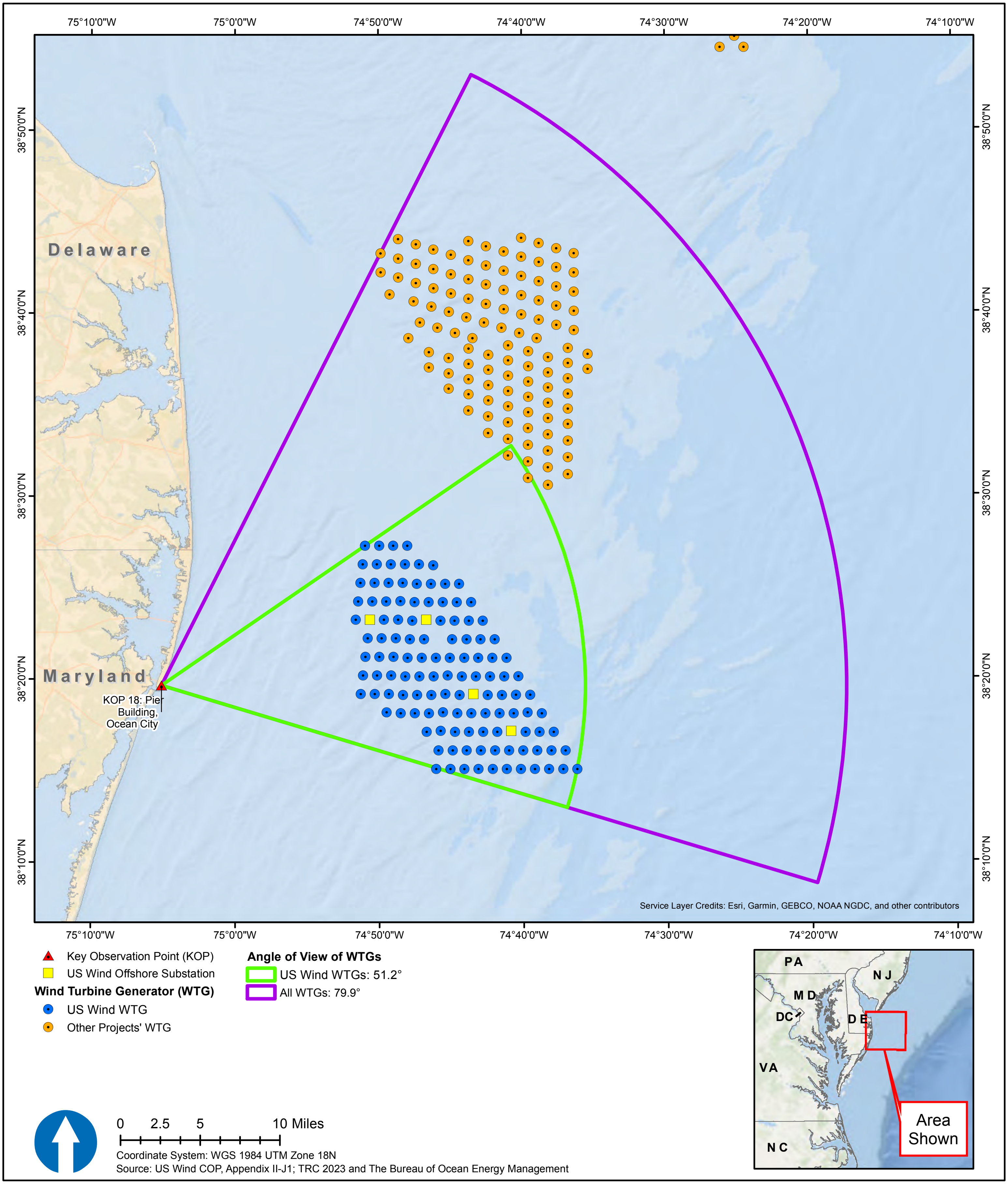


Figure H.3-1. KOP 18: Pier Building, Ocean City.

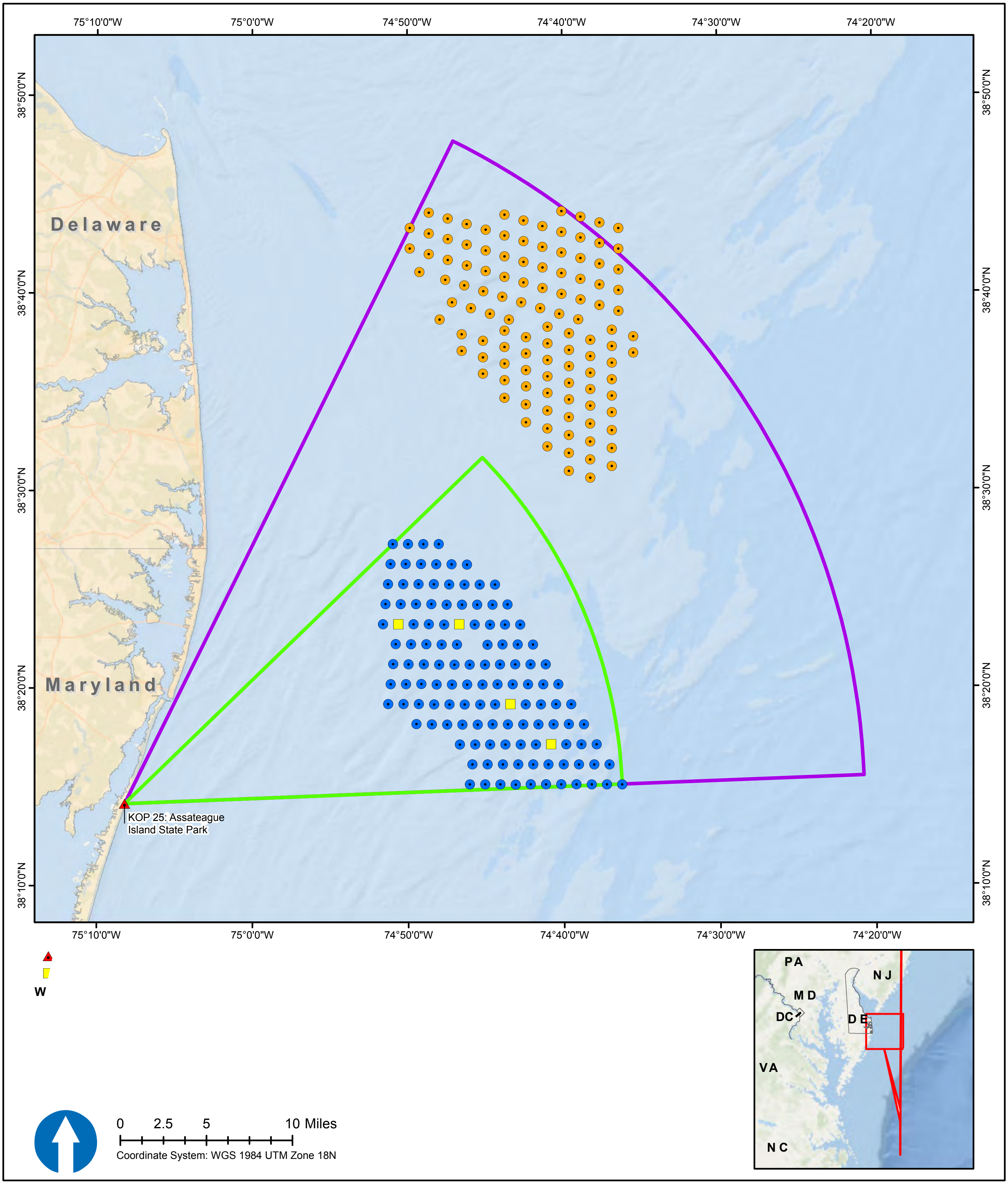


Figure H.3-2. KOP 25: Assateague Island State Park.

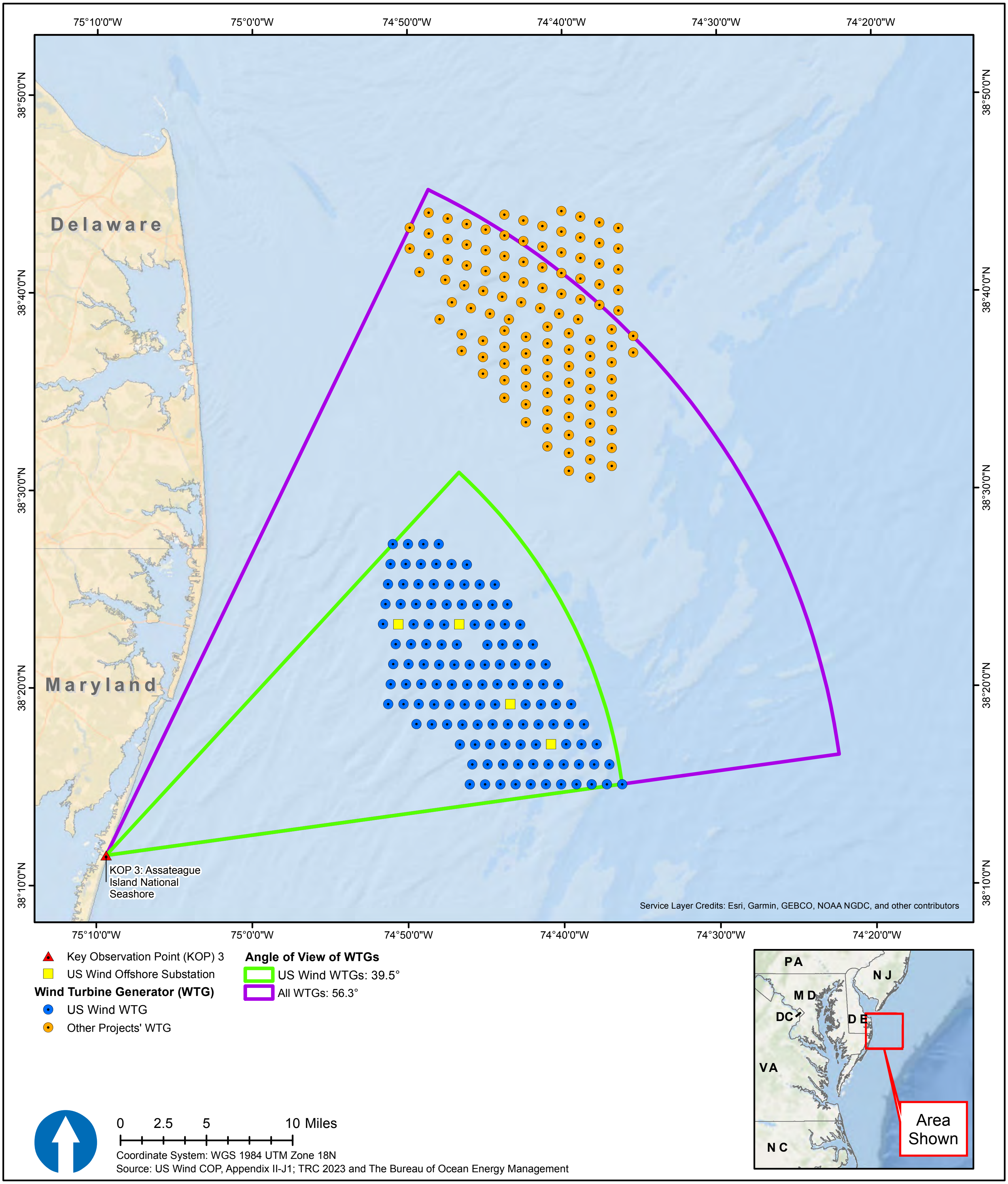


Figure H.3-3. KOP 3: Assateague Island National Seashore.

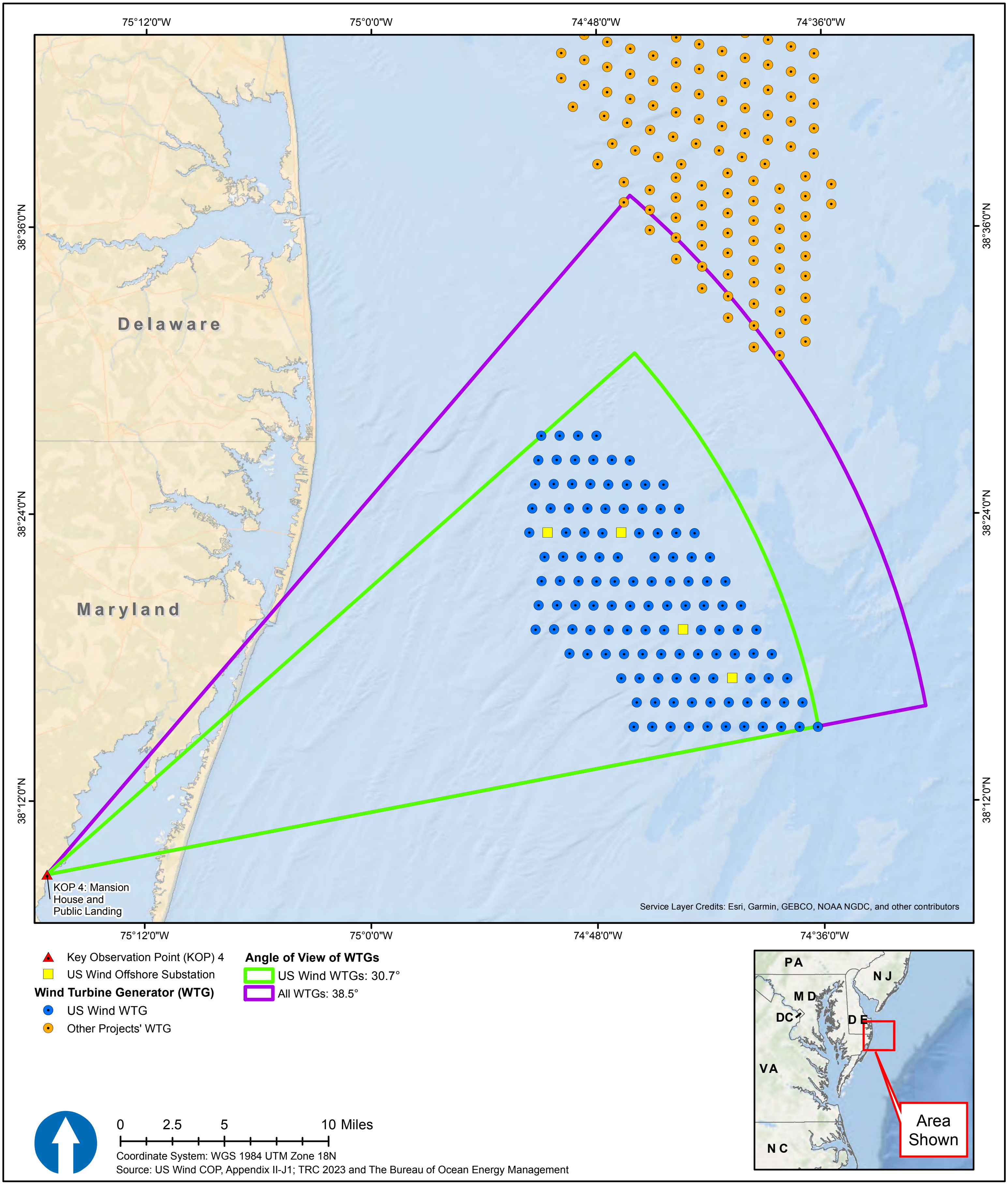


Figure H.3-4. KOP 4: Mansion House and Public Landing.

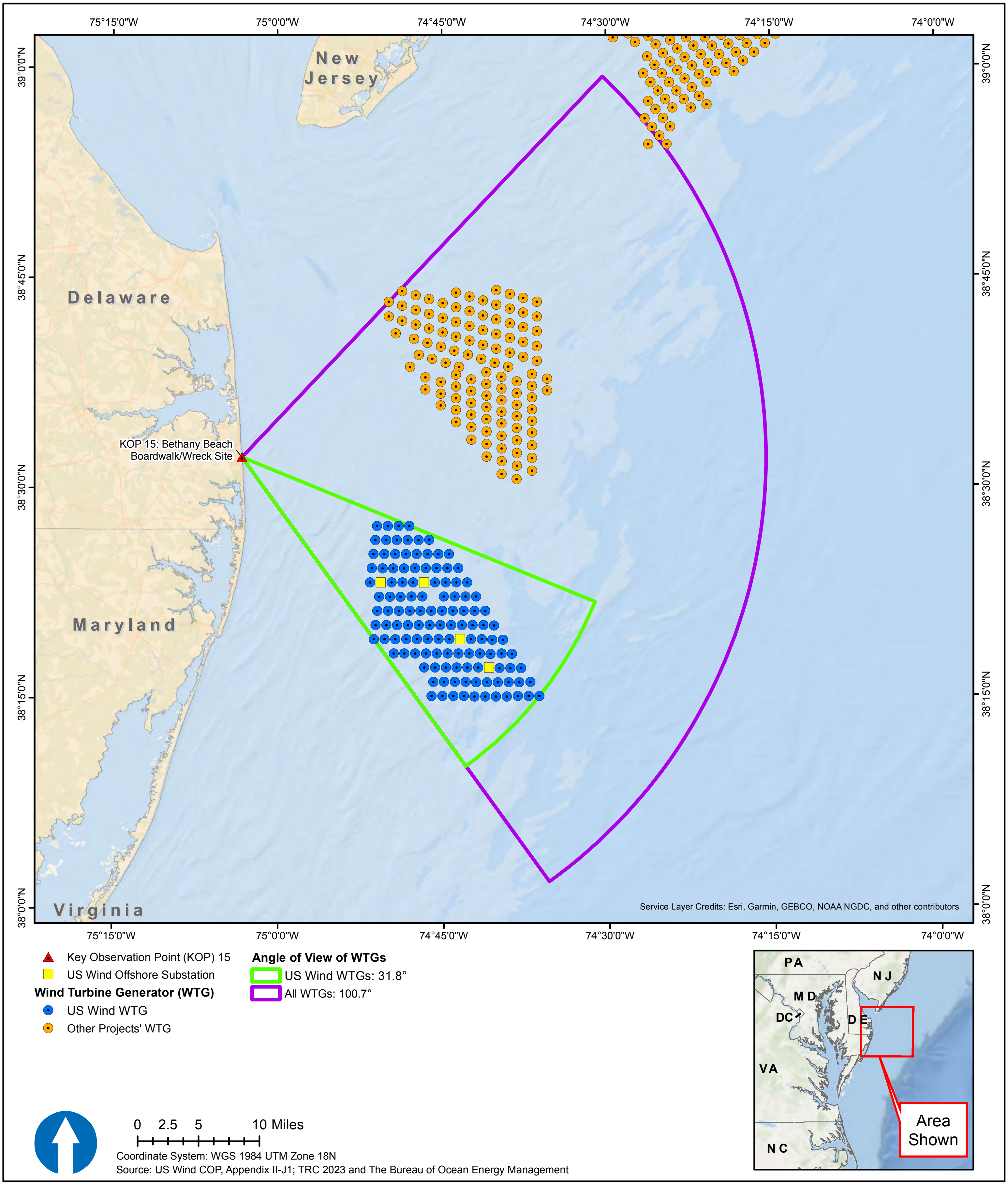


Figure H.3-5. KOP 15: Bethany Beach Boardwalk/Wreck Site.

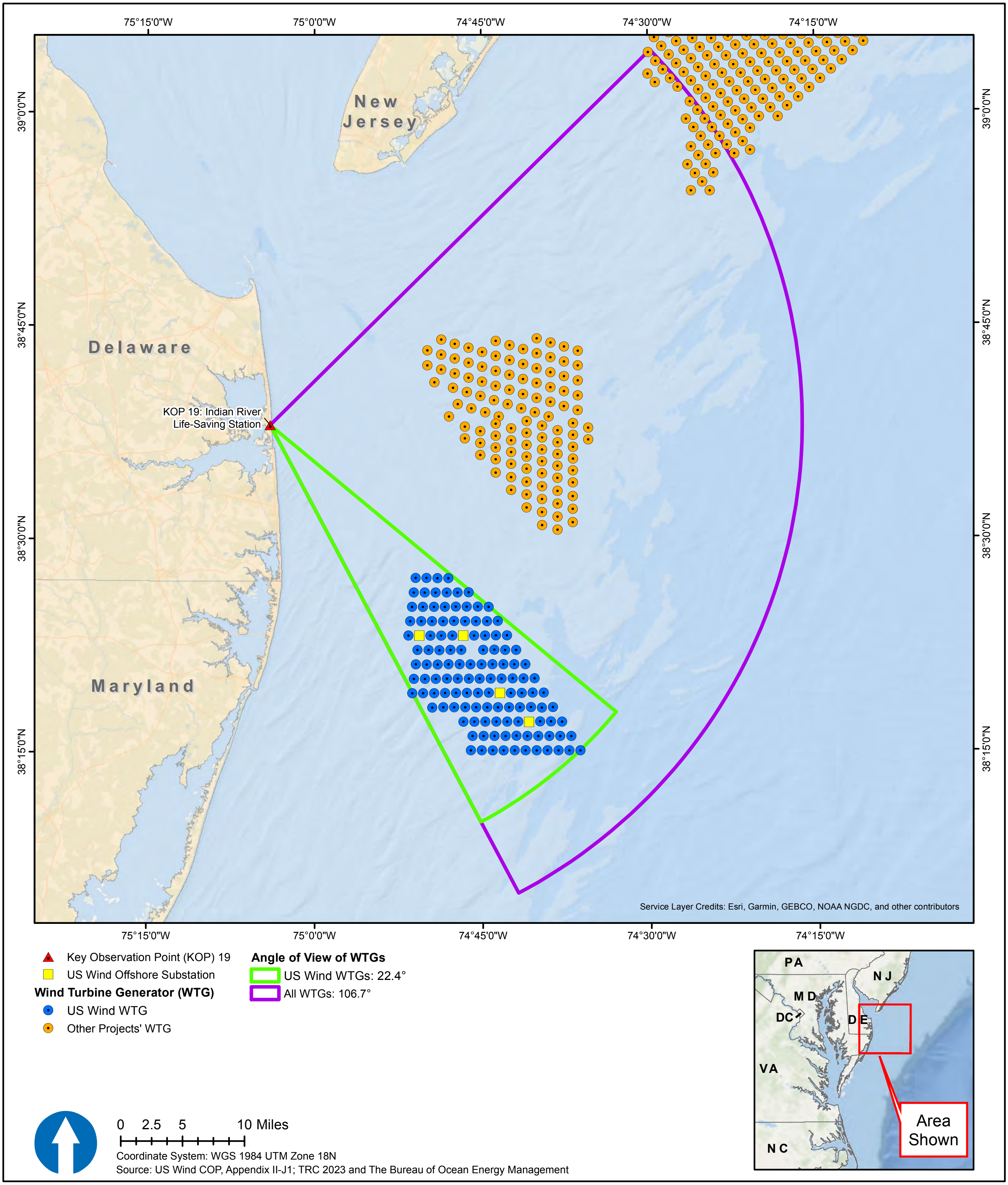


Figure H.3-6. KOP 19: Indian River Life-Saving Station.

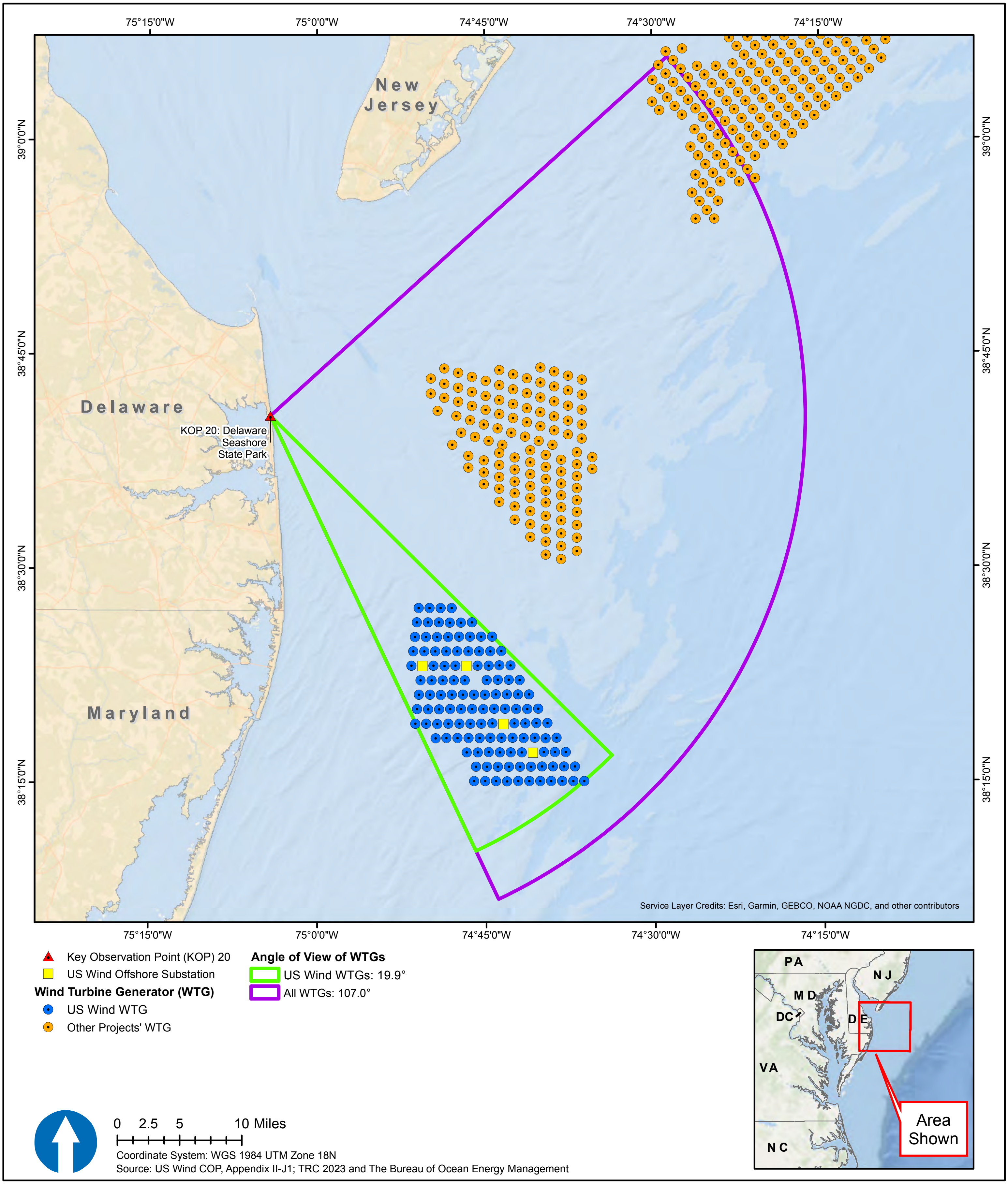


Figure H.3-7. KOP 20: Delaware Seashore State Park.

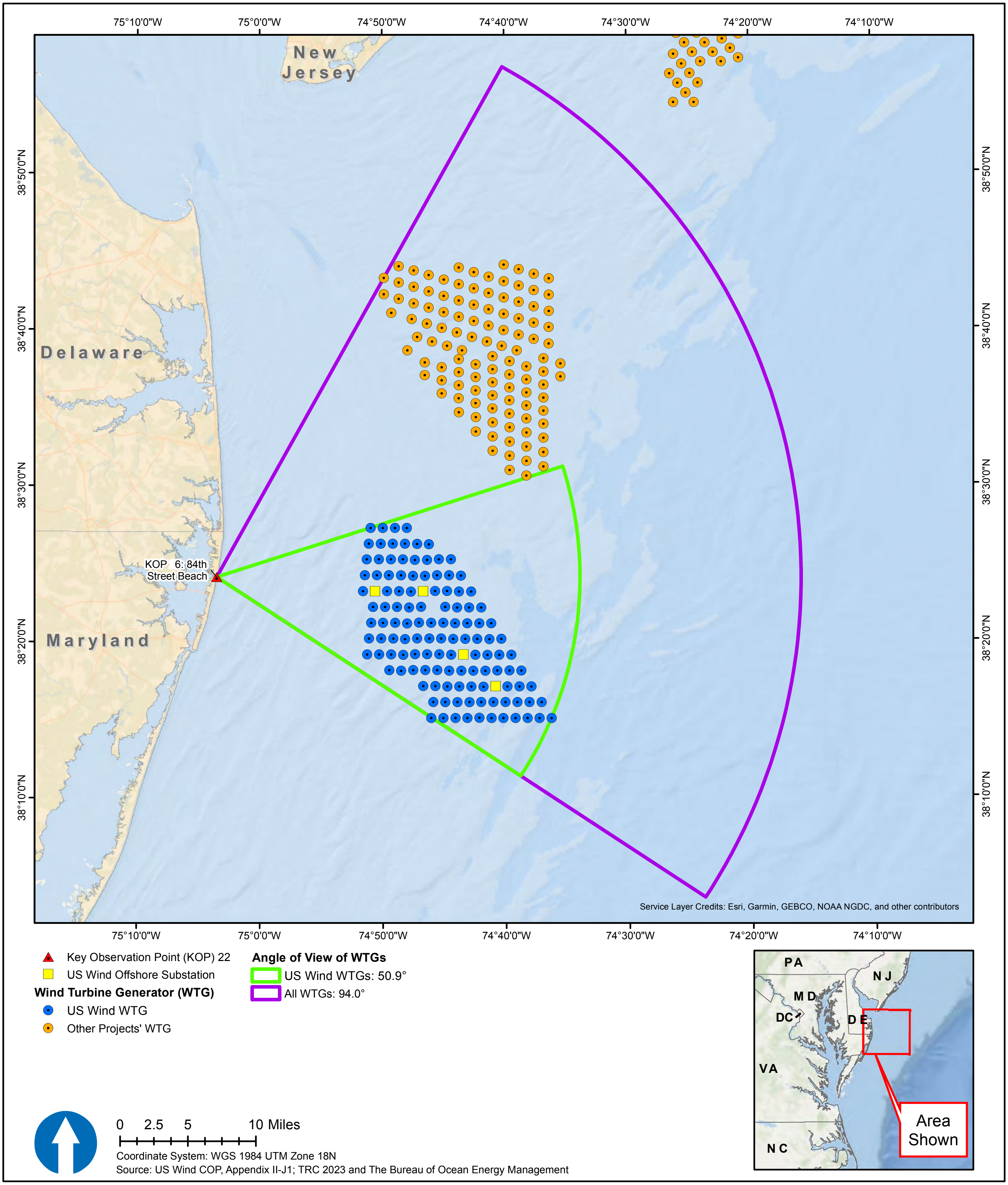


Figure H.3-8. KOP 6: 84th Street Beach.

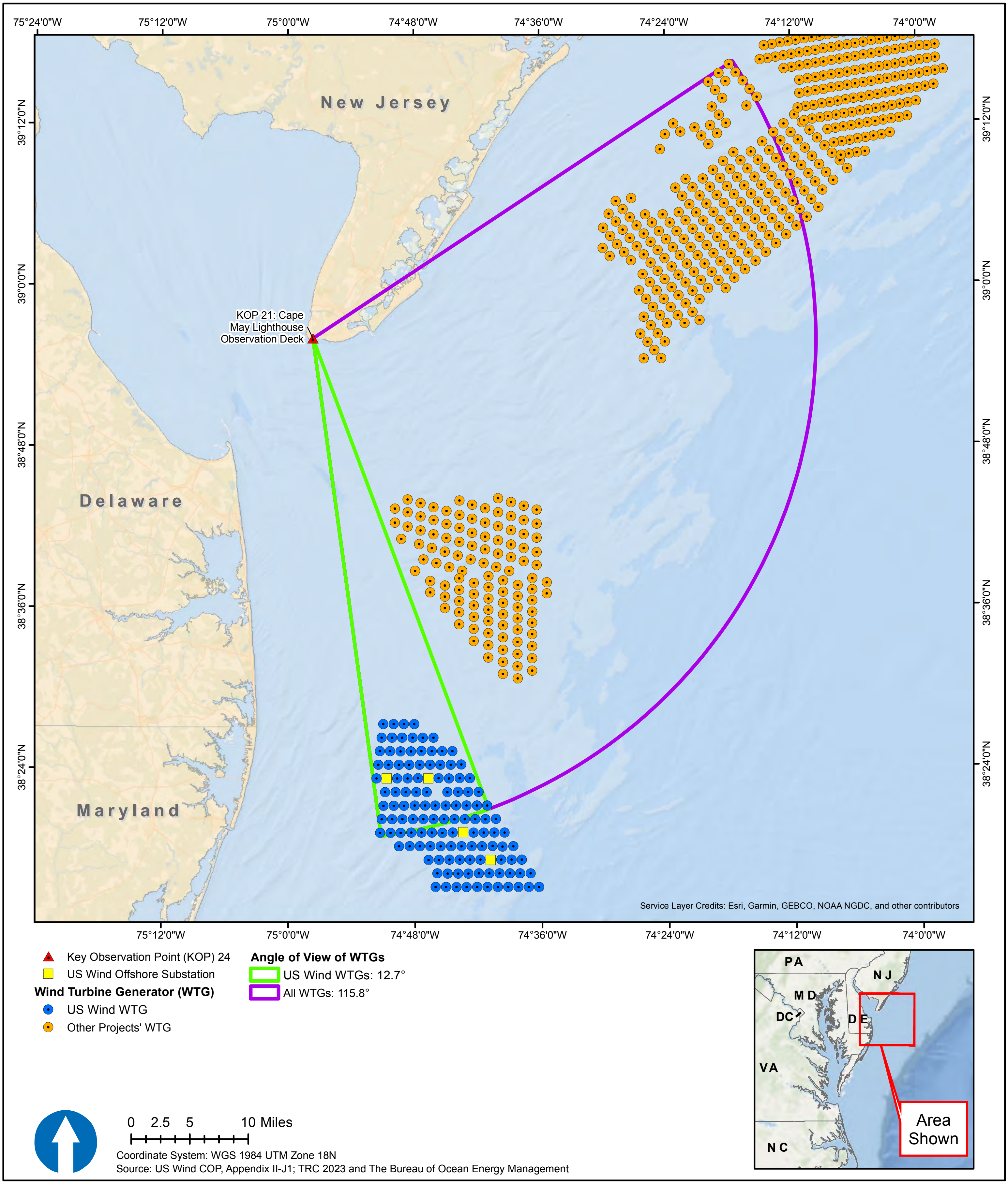


Figure H.3-9. KOP 21: Cape May Lighthouse Observation Deck.

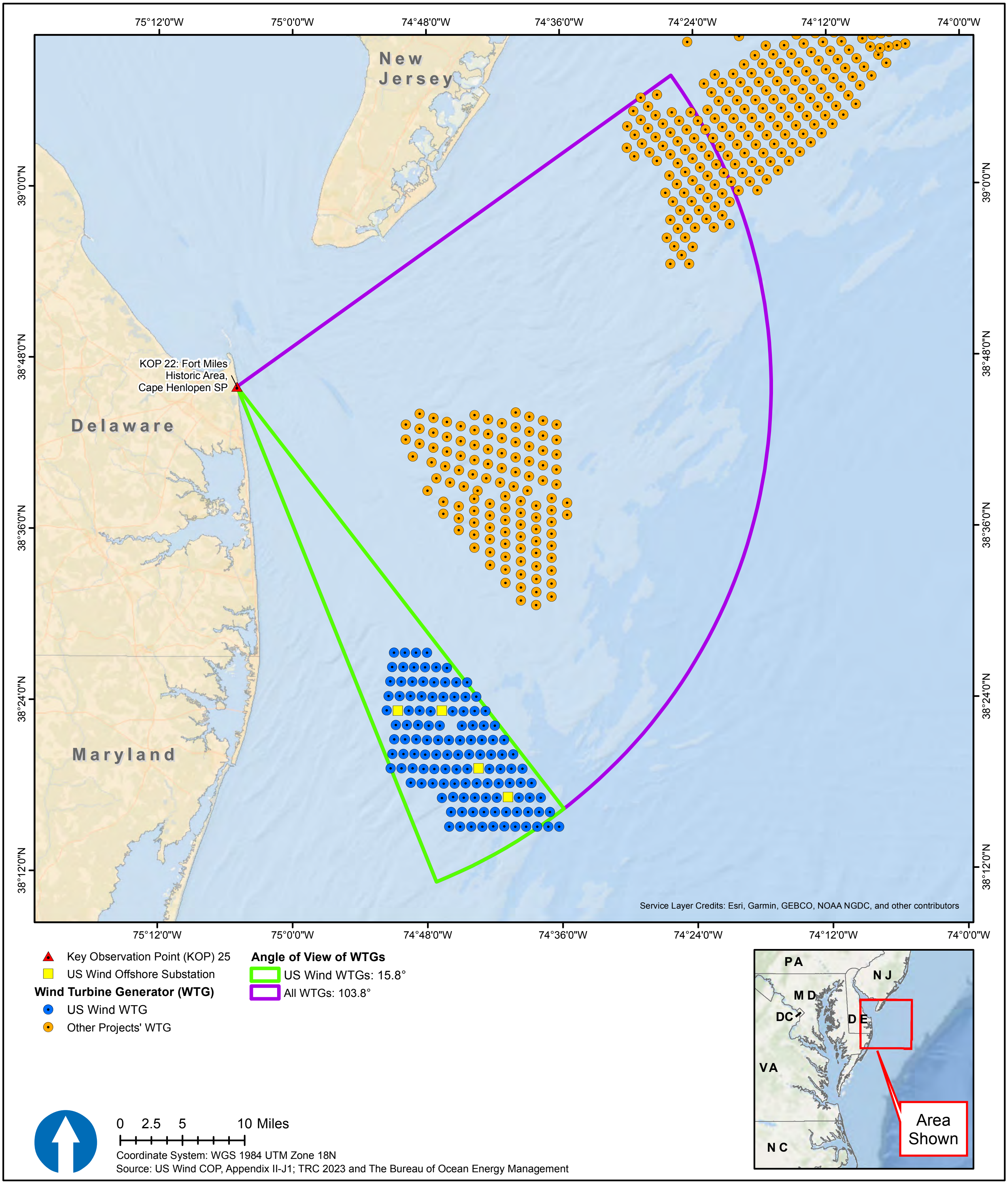


Figure H.3-10. KOP 22: Fort Miles Historic Area, Cape Henlopen SP.

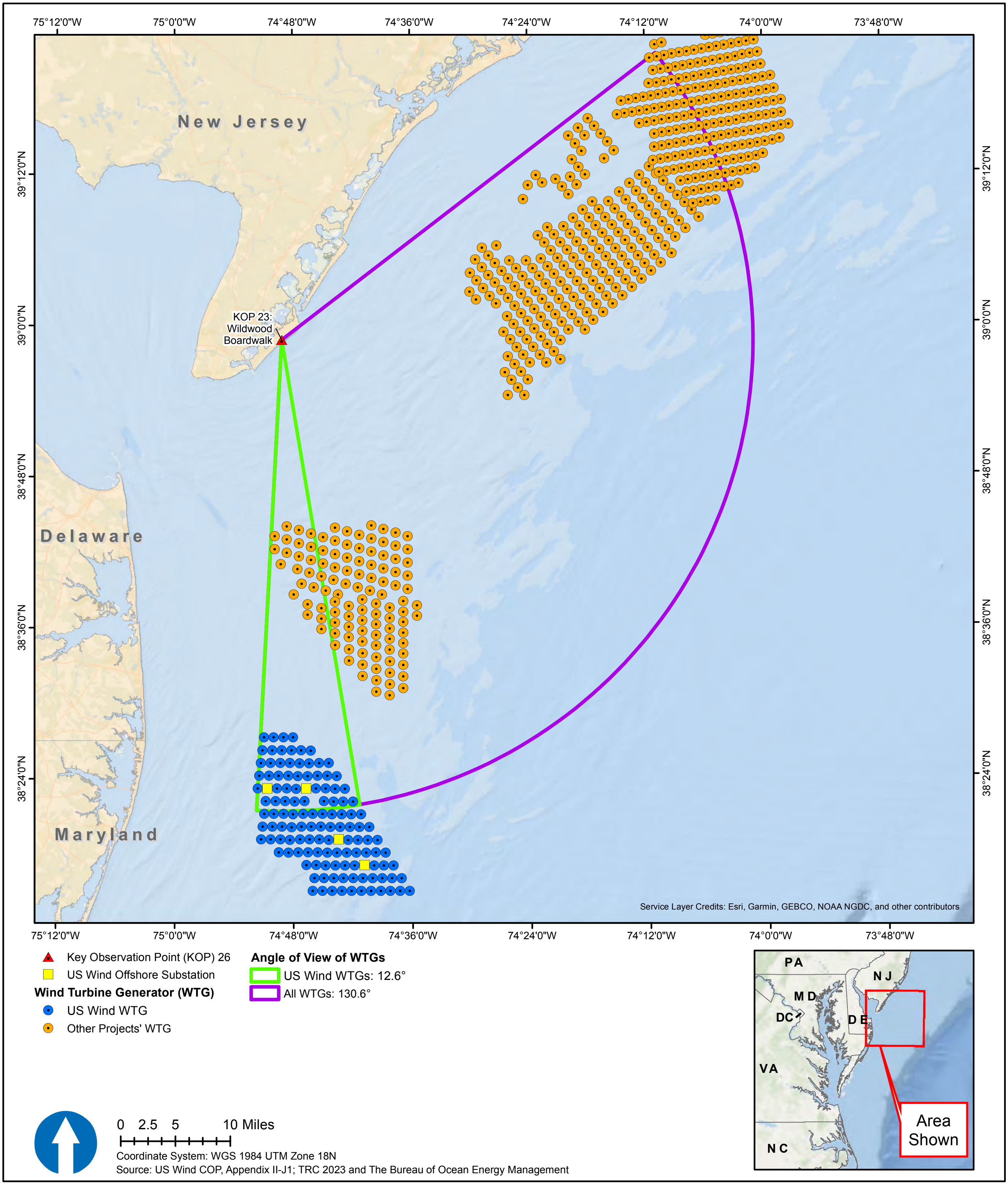


Figure H.3-11. KOP 23: Wildwood Boardwalk.

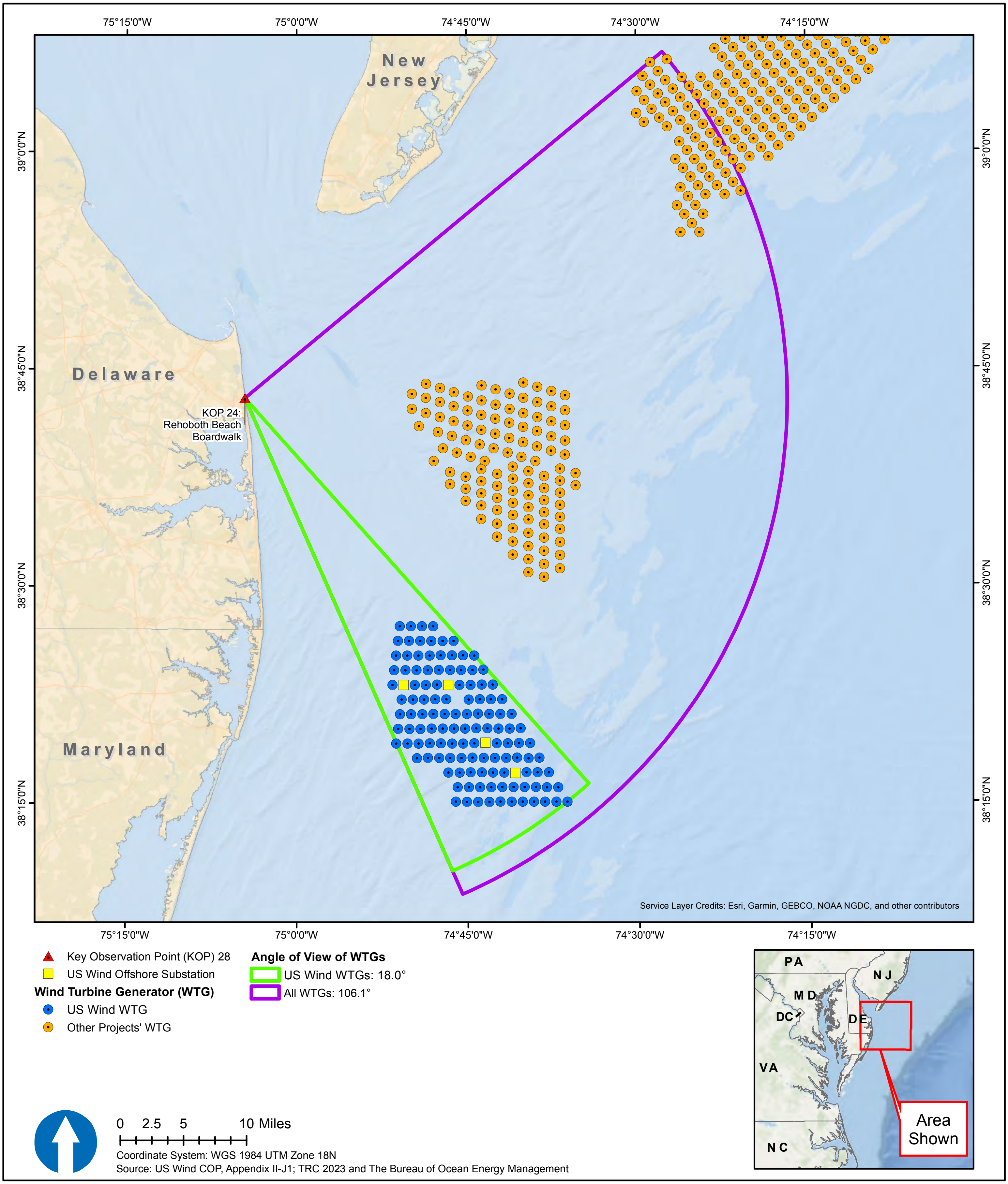


Figure H.3-12. KOP 24: Rehoboth Beach Boardwalk.