CUMULATIVE HISTORIC RESOURCES VISUAL EFFECTS ANALYSIS – ATLANTIC SHORES OFFSHORE WIND SOUTH PROJECT

Prepared for

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ABSTRACT

The Bureau of Ocean Energy Management (BOEM) requested that ICF prepare a cumulative historic resources visual effects analysis (CHRVEA) for the Atlantic Shores Offshore Wind South Project (Project). The Project has the potential to contribute to the cumulative visual effects on historic properties in combination with the potential effects of other proposed actions, specifically other offshore wind energy development activities proposed in offshore wind lease areas adjacent to the Project. Where BOEM has determined that the Project has the potential to result in adverse visual effects on historic properties, this CHRVEA analyzes further where the effects of other reasonably foreseeable development activities may be additive to those of the Project, resulting in cumulative effects. In considering the potential for cumulative visual effects of the Project on historic properties, the CHRVEA assists BOEM in complying with Section 106 of the National Historic Preservation Act (NHPA), as amended (at 54 United States Code 306108), and its implementing regulations (36 Code of Federal Regulations [CFR] 800). This includes meeting the requirements of NHPA Section 110(f) for protecting National Historic Landmarks (NHL), pursuant to 36 CFR 800.10.

The historic resources visual effects assessment (HRVEA) report prepared specific to the Project as part of the Construction and Operations Plan (COP) was updated in December 2021, September and November 2022, and February and April 2023. The HRVEA identified historic properties within the Area of Potential Effects (APE) for visual effects analysis, the area within which adverse visual effects could result from wind turbine generator (WTG) installation. The HRVEA assessed potential adverse effects on historic properties resulting from the proposed Project (COP Volume II, Appendices II-O, II-N1, and II-N2; Atlantic Shores 2023). BOEM, in review of the HRVEA, determined the Offshore Project components would result in adverse effects on 27 historic properties in New Jersey that were either previously determined eligible or recommended eligible for the National Register of Historic Places (NRHP), including two NHLs.

Cumulative visibility of the WTGs and other offshore wind energy development activities is anticipated to intensify the level of adverse effect on the 27 historic properties. WTGs associated with the Project would represent 22.8 to 35.9 percent of the total WTGs theoretically visible from each property, and WTGs associated with other offshore wind energy development activities would represent 64.1 to 77.2 percent of the total WTGs theoretically visible from each property. As such, the proposed Project is a large-scaled development when compared to other developments planned nearby, including Atlantic Shores North (Lease Area OCS-A 0549), Ocean Wind 1 (Lease Area OCS-A 0498) and Ocean Wind 2 (Lease Area OCS-A 0532), Garden State Offshore Energy I (Lease Area OCS-A 0482), Skipjack Offshore Energy (part of Lease Area OCS-A 0519), Bight Wind Holdings (OCS-A 0539), Atlantic Shores Offshore Wind Bight (OCS-A 0541), and Invenergy Wind Offshore (OCS-A 0542).

The conclusions herein are ICF's recommendations regarding the Project's WTGs' contribution to cumulative visual effects on historic properties when combined with past, present, and reasonably foreseeable offshore wind energy development activities in the APE for this Project. These recommendations are provided to inform BOEM's determination of Project effects on historic properties and consultation on any effects found. Where BOEM has made its determination in Appendix I of the Draft Environmental Impact Statement (EIS)*, Finding of Adverse Effect for the Atlantic Shores Offshore Wind South Project Construction and Operations Plan*, this determination is expressed consistently in the CHRVEA. While Section 106 consultation is ongoing among BOEM, the New Jersey State Historic Preservation Officer, the Advisory Council on Historic Preservation (ACHP), and other identified consulting parties on the Project, final determinations remain with BOEM in accordance with 36 CFR 800. This includes ongoing consultation with Native American Tribal Nations that may identify properties of traditional cultural and religious significance in the APE.

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1 INTRODUCTION

This cumulative historic resources visual effects analysis (CHRVEA) assesses the contribution of the Atlantic Shores Offshore Wind South Project (the Project) to cumulative visual effects on historic properties. Cumulative effects on historic properties are the incremental effects that the Project could have when added to other past, present, or reasonably foreseeable future actions, regardless of which agency or person undertakes the actions (40 Code of Federal Regulations [CFR] 1508.7). Where the Bureau of Ocean Energy Management (BOEM) has determined that the Offshore Project components have the potential to result in adverse visual effects on historic properties, this CHRVEA analyzes further where the effects of other reasonably foreseeable development activities may be additive to those of the Project, resulting in cumulative effects. The CHRVEA focuses on cumulative visual effects on historic properties.

1.1 Project Background

BOEM is the lead federal agency responsible for the decision on whether to approve, approve with modifications, or disapprove the Project's construction and operations plan (COP) pursuant to 43 United States Code 1332(3). To further inform that decision, BOEM requested that ICF prepare a CHRVEA to assist in BOEM's compliance with Section 106 of the National Historic Preservation Act (NHPA), as amended (54 United States Code 306108), and its implementing regulations (36 CFR 800).

In the COP, Atlantic Shores Offshore Wind, LLC (Atlantic Shores) proposes to develop two commercial-scale offshore wind energy facilities in BOEM Lease Area OCS-A 0499 (Lease Area) with up to 200 wind turbine generators (WTGs); up to 10 small, 5 medium, or 4 large offshore substations (OSSs); interarray cables linking the individual turbines to the OSSs; interlink cables linking the substations to each other; offshore export cables; 1 permanent meteorological (met) tower; up to 4 temporary meteorological and oceanographic buoys; an onshore export cable system; 2 onshore substations; and connections to the existing electrical grid in New Jersey. Atlantic Shores plans to construct the Project by 2027.

In addition to the proposed Project, BOEM has identified 10 types of actions that could result in cumulative effects on the human environment, including historic properties: (1) other offshore wind energy development activities; (2) undersea transmission lines, gas pipelines, and other submarine cables (e.g., telecommunications); (3) tidal energy projects; (4) marine minerals use and ocean-dredged material disposal; (5) military use; (6) marine transportation; (7) fisheries use and management; (8) global climate change; (9) oil and gas activities; and (10) onshore development activities, such as onshore wind turbines, telecommunications towers, planned projects in town master plans, and railroad/railroad station improvements.

Of the above actions, the visual effects from other offshore wind energy development activities in BOEM offshore wind lease areas adjacent to the Project pose the greatest potential for cumulative effects on historic properties when combined with those identified for the Project. The following discussion presents the reasonably foreseeable cumulative visual effects associated with other offshore wind energy development activities and the Project.

1.2 Area of Potential Effects and Historic Properties Identified

Visual effects from the Project have the potential to adversely affect historic properties within the Area of Potential Effects (APE) that BOEM has defined for the Project. The visual portion of the APE (hereafter

referred to as *visual APE*) includes the viewshed from which renewable energy structures—whether offshore or onshore—would be visible. The visual APE for the Project includes onshore coastal areas of New Jersey. Geographic information system (GIS) analysis and subsequent field investigations delineated the visual APE methodically through a series of steps, beginning with the maximum theoretical distance that WTGs could be visible (COP Volume II, Appendix II-O; Atlantic Shores 2023). This was determined by first taking into account the visibility of a WTG from the water level to the tip of an upright rotor blade at a maximum tip height of 1,049 feet (320 meters). Generally, the offshore visual APE extends from approximately 5 miles (8 kilometers) north of Toms River in Ocean County to the southern tip of Cape May. The analysis next accounted for how distance and curvature of the Earth impede visibility as space increases between the viewing point and WTGs (i.e., by a 45.1-mile [72.6-kilometer] distance, even blade tips would be below the sea level horizon line). The mapping effort then removed all areas analyzed with obstructed views toward the Project's WTGs, such as those impeded by intervening topography, vegetation, and structures. Areas with unobstructed views of Offshore Project elements then composed the APE (COP Volume II, Appendix II-O; Atlantic Shores 2023). Figure 1 shows the visual APE for the Project.

The visual APE for Onshore Project components includes all areas within 1 mile (1.6 kilometer) of the proposed onshore substation and/or converter sites, including the Fire Road Site, Lanes Pond Road Site, Brook Road Site, and Randolph Road Site and the proposed operations and maintenance (O&M) facility with potential visibility of these components as determined through viewshed analysis (Figure 1). The 1-mile (1.6-kilometer) radius was defined from the property boundary and is considered the maximum limit within which aboveground historic properties could be subject to visual adverse effects given the size of the proposed Onshore facilities and the screening provided by existing topography, building/ structures or adjacent developed areas, and vegetation (COP Volume II, Appendix II-N1 and II-N2; Atlantic Shores 2023).

Visual effects on historic properties tend to especially risk the alteration of characteristics that qualify a property for inclusion in the National Register of Historic Places (NRHP) when these effects diminish integrity of setting, feeling, or association of that property. The National Park Service (NPS) defines *setting, feeling,* and *association* as follows (NPS 1997):

1. Setting is the physical environment of a historic property and refers to the character of the place in which the property played its historical role. The physical features that constitute the setting of a historic property can be either natural or human made, including such elements as topographic features, vegetation, human-made features/landscape structures, and relationships between buildings and other features or open space. These features and their relationships are considered between the property and its outside surroundings as well as inside the boundaries of the property.
2. Feeling is a property's expression of the aesthetic or historic sense of a particular period of time. It results from the presence of physical features that, taken together, convey the property's historic character. A historic property retaining original design, materials, workmanship, and setting might relate the feeling of its historic period of significance—its historic feel.
3. Association is the direct link between an important historic event or person and a historic property. A property retains association if it is the place where the event or activity occurred and is sufficiently intact to convey that relationship to an observer. Like feeling, association requires the presence of physical features that convey a property's historic character.

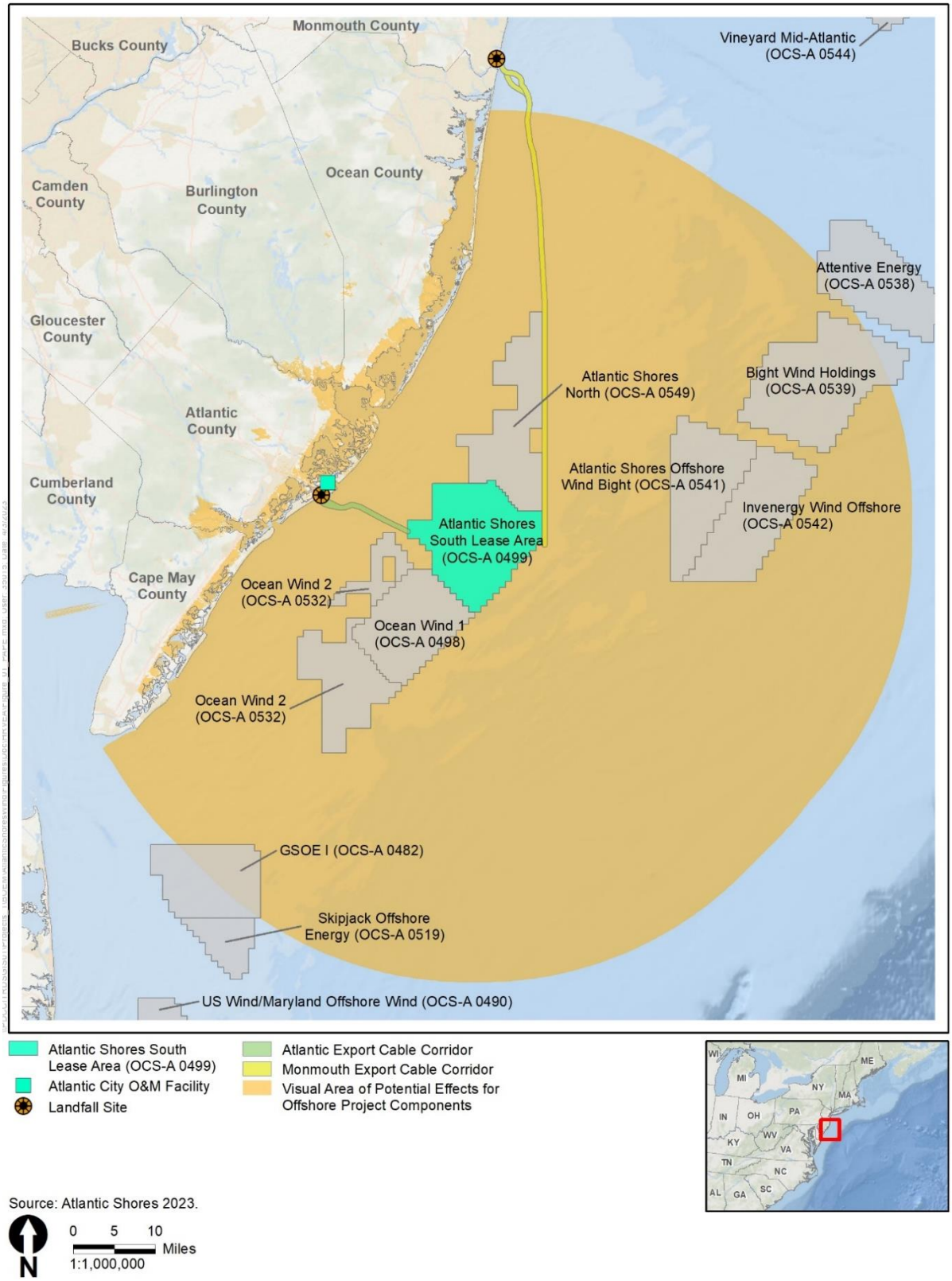


Figure 1 **APE for visual effects analysis within the maximum distance for potential visibility of Project facilities**

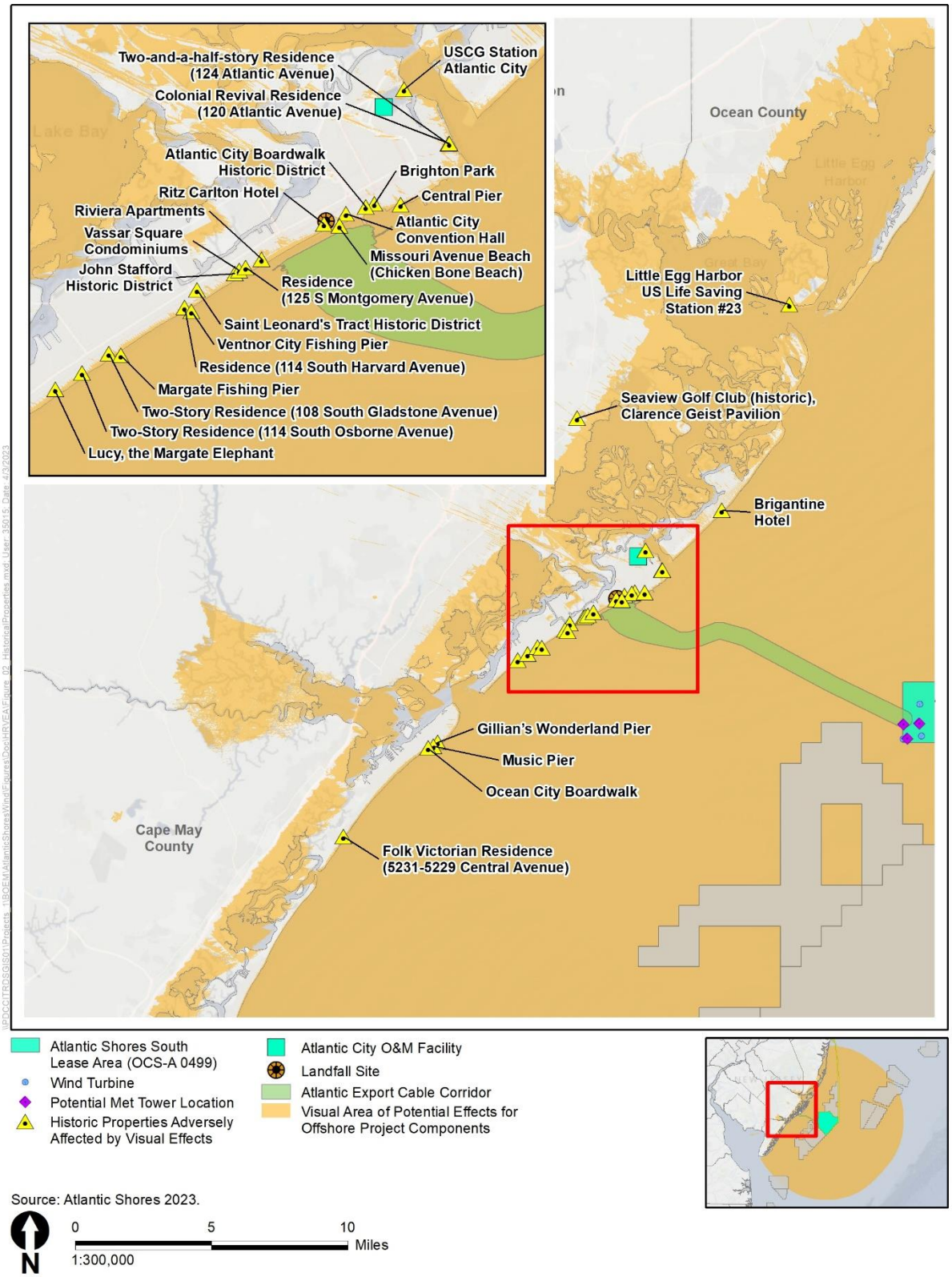


Figure 2 Visual APE with adversely affected historic properties

The APE for visual effects for the Project was analyzed for Project-specific visual effects in the historic resources visual effects assessment (HRVEA) for Offshore Project components and in the historic resources effects assessments (HREA) for Onshore Project components (COP Volume II, Appendices II-N1, II-N2, II-O; Atlantic Shores 2023). The HRVEA identified 123 historic properties in the visual APE for Offshore Project components. These properties were analyzed to determine if they had character-defining or potentially character-defining ocean views and a maritime setting that could potentially contribute to the property's significance. The HRVEA recommended potential adverse effects for 27 historic properties resulting from the proposed Offshore Project components.

The HRVEA also found that the Project would not adversely affect the remaining 96 historic properties identified in the visual APE for Offshore Project components (COP Volume II, Appendix II-O; Atlantic Shores 2023).

Beyond visual effects from WTGs, the HRVEA did not identify adverse visual effects on historic properties from Onshore Project facilities, such as the onshore substation locations or associated overhead grid connections (COP Volume II, Appendices II-N1 and II-N2; Atlantic Shores 2023). BOEM agrees with this assessment, finding no adverse effects on any historic properties identified within the visual APE beyond the 27 historic properties identified in the visual APE for Offshore Project components.

To inform determinations of adverse and cumulative visual effects, BOEM reviewed the list of historic properties assessed in the HRVEA as likely to be adversely affected by the Project. BOEM will review information and comments received from consulting parties in correspondence and at meetings. The 27 historic properties determined to be adversely affected retain a maritime setting, and the maritime setting contributes to the property's NRHP eligibility. These historic properties also retain character-defining ocean views that support the integrity of the maritime setting; these vantage points have potential for open views from each property toward the WTGs (COP Volume II, Appendix II-O; Atlantic Shores 2023). Appendix A, *Description, Historic Character, and Basis for National Register of Historic Places Eligibility of the Historic Properties with Adverse Effects from the Project*, provides a photograph and description of character and the basis for NRHP eligibility for 25 historic properties with adverse effects from the Project; the Atlantic City Convention Hall and Lucy, The Margate Elephant National Historic Landmarks (NHLs) are described in Section 3, *Cumulative Effects Considerations Specific to National Historic Landmarks and the National Historic Preservation Act Section 106 Process*. Figure 2 shows the locations of each property within the APE. Table 1 lists the historic properties determined to be adversely affected by the Project.

Table 1 Historic properties adversely affected by the Project

Property Name	Address/Location	NRHP Status	Distance To Nearest Project WTG
Atlantic City Boardwalk Historic District	Atlantic City, NJ	Eligible (Determined by NJ HPO)	10.47 miles
Atlantic City Convention Hall NHL	2301 Boardwalk, Atlantic City, NJ	National Historic Landmark	11.4 miles
Brigantine Hotel	1400 Ocean Avenue, Brigantine City, NJ	Potentially eligible	9.91 miles
Brighton Park	1801 Boardwalk, Atlantic City, NJ	Potentially eligible as a contributing element to the Atlantic City Boardwalk Historic District	11.16 miles
Central Pier	1400 Boardwalk, Atlantic City, NJ	Eligible (Determined by NJ HPO)	10.85 miles

Property Name	Address/Location	NRHP Status	Distance To Nearest Project WTG
Colonial Revival Residence at 120 Atlantic Avenue	120 Atlantic Avenue, Atlantic City, NJ	Potentially eligible	10.65 miles
Folk Victorian Residence at 5231–5229 Central Avenue	5231–5229 Central Avenue, Ocean City, NJ	Potentially eligible	20.82 miles
Gillian's Wonderland Pier	600 Boardwalk, Ocean City, NJ	Eligible (Determined by NJ HPO)	17.01 miles
John Stafford Historic District	Ventnor City, NJ	NRHP Listed	12.47 miles
Little Egg Harbor U.S. Life Saving Station #23	800 Great Bay Boulevard, Little Egg Harbor Township, NJ	Eligible (Determined by NJ HPO)	11.95 miles
Lucy, The Margate Elephant	Decatur and Atlantic Avenues, Margate City, NJ	National Historic Landmark	14.4 miles
Margate Fishing Pier	121 S. Exeter Avenue, Margate City, NJ	Potentially eligible	13.6 miles
Missouri Avenue Beach (Chicken Bone Beach)	Atlantic City, NJ	Eligible (Determined by NJ HPO)	11.2 miles
Music Pier	825 Boardwalk, Ocean City, NJ	Eligible (Determined by NJ HPO)	17.2 miles
Ocean City Boardwalk	Ocean City, NJ	Eligible (Determined by NJ HPO)	16.9 miles
Residence at 114 South Harvard Avenue	114 South Harvard Avenue, Ventnor City, NJ	Eligible (Determined by NJ HPO)	13.01 miles
Residence at 125 South Montgomery Avenue	125 S. Montgomery Avenue, Atlantic City, NJ	Potentially eligible	12.4 miles
Ritz Carlton Hotel	2715 Boardwalk, Atlantic City, NJ	Eligible (Determined by NJ HPO)	11.66 miles
Riviera Apartments	116 S. Raleigh Avenue, Atlantic City, NJ	Eligible (Determined by NJ HPO)	12.3 miles
Saint Leonard's Tract Historic District	Ventnor City, NJ	Eligible (Determined by NJ HPO)	12.69 miles
Seaview Golf Club, Clarence Geist Pavilion	401 South New York Road, Galloway Township, NJ	Potentially eligible	15.6 miles
Two-and-a-Half-Story Residence At 124 Atlantic Avenue	124 Atlantic Avenue, Atlantic City, NJ	Potentially eligible	10.65 miles
Two-Story Residence at 108 South Gladstone Avenue	108 South Gladstone Avenue, Margate City, NJ	Eligible (Determined by NJ HPO)	13.82 miles

Property Name	Address/Location	NRHP Status	Distance To Nearest Project WTG
Two-Story Residence at 114 South Osborne Avenue	114 South Osborne Avenue, Margate City, NJ	Eligible (Determined by BOEM)	14.11 miles
U.S. Coast Guard (USCG) Station Atlantic City	900 Beach Thorofare, Atlantic City, NJ	Eligible (Determined by NJ HPO)	11.46 miles
Vassar Square Condominiums	4800 Boardwalk, Ventnor City, NJ	Eligible (Determined by BOEM)	12.45 miles
Ventnor City Fishing Pier	Cambridge Avenue at the Ventnor City Boardwalk, Ventnor City, NJ	Potentially eligible	12.83 miles

Source: Atlantic Shores 2023.
Notes: BOEM = Bureau of Ocean Energy Management; NJ = New Jersey; NJ HPO = New Jersey Historic Preservation Office.

Cumulative visual effects associated with the Project in combination with other planned offshore wind energy development activities in adjacent BOEM offshore wind lease areas were assessed within the APE. This CHRVEA addresses those historic properties BOEM found to experience adverse visual effects from the Offshore Project components. Effects on historic properties outside the APE were not assessed. In addition to the proposed Project WTGs, this CHRVEA assesses where the WTGs proposed for other planned offshore wind energy development activities may combine with the Project to produce cumulative visual effects on historic properties in the APE.

2 CUMULATIVE VISUAL EFFECTS ANALYSIS

Using the visual APE delineated by BOEM (BOEM 2023b), modeling was conducted for the CHRVEA to establish the maximum potential number and positioning of the Project WTGs and other actions' WTGs cumulatively visible from the historic properties.

2.1 Modeling Viewshed and Cumulative Wind Turbine Generator Visibility

Modeling viewshed and WTG visibility is a multi-step process. The method applied for initial Project-level viewshed modeling is as described in the following summary from the HRVEA (COP Volume II, Appendix II-O; Atlantic Shores 2023):

> The viewshed analysis (prepared as part of the VIA [Visual Impact Assessment[1]]) was based upon a highly detailed digital surface model (DSM) of the area within 45.1 miles (72.6 km [kilometers]) of the WTA [Wind Turbine Area] generated from lidar data, which includes the elevations of land features, buildings, trees, and other objects large enough to be resolved by lidar technology… A bare-earth digital elevation model (DEM), representing topography only, was also created in order to make corrections to the DSM and to the initial viewshed result. The DSM and DEM were both created with a horizontal resolution of 3 meters (m) to allow direct comparison of ground elevation with the elevation of surface features (such as buildings and vegetation)….
>
> The analysis of potential visibility of the Projects within the 45.1-mile (72.6 km) viewshed radius, was based on 200 points representing the WTG locations currently under consideration (using

[1] COP Volume II, Appendix II-T; Atlantic Shores 2023.

latitude and longitude coordinates provided by Atlantic Shores), an assumed maximum blade tip height of 1,046.6 feet (319 m), and an assumed viewer height of 6 feet (1.83 m).

Field reviews of potential visibility were conducted to confirm the results of the viewshed analysis in 2020 and 2022. This field review included photography to determine the existence of sight lines to the proposed Project, identify Key Observation Points (KOPs), document the conditions of previously identified historic properties, and evaluate Project views. Survey fieldwork included systematically driving public roads within the preliminary APE (PAPE) to document previously identified aboveground historic properties and to evaluate the NRHP eligibility of additional structures and properties within the PAPE (COP Volume II, Appendix II-O; Atlantic Shores 2023). The HRVEA reviewed field photographs and visual photosimulations from KOPs to assess potential Project visibility. The visualizations provided a more realistic impression of Project visibility than the geographic extent of theoretical visibility presented in the computer-based viewshed analysis (COP Volume II, Appendix II-O; Atlantic Shores 2023).

This CHRVEA analyzes intervisibility of other regional projects based on known WTG location and height information as of July 2022 and as provided to Atlantic Shores by BOEM for the production of the cumulative photosimulations. Therefore, this analysis provides consistency with the photosimulations included in Appendix C, *Atlantic Shores Offshore Wind South Cumulative Photosimulations.* The information regarding WTG heights is based on the best available information about commercially available WTGs at this time. While the cumulative photosimulations in Appendix C include Empire Wind 1 (part of OCS-A 0512), Empire Wind 2 (part of OCS-A 0512), U.S. Wind/Maryland Offshore Wind (part of OCS-A 0490), OW Ocean Winds East (OCS-A 0537), Attentive Energy (OCS-A 0538), and Vineyard Mid-Atlantic (OCS-A 0544), these projects do not fall within the intervisibility range of the adversely affected historic properties for this Project (Figure 3). As of March 2023, Appendix D, *Ongoing and Planned Activities Scenario,* of the Draft Environmental Impact Statement (EIS) contains the most current data related to other projects within this geographic analysis area (BOEM 2023a).

Cumulative effects modeling was based on technical specifications and Project layouts or layout criteria provided by BOEM for potential locations where WTGs for the Project and all other offshore wind lease areas (within 45.1 miles [72.6 kilometers] around the Project) could be visible from historic properties (Figure 3). The cumulative WTG visibility assessment considered the combined, simultaneous visibility from the APE of theoretically visible WTG locations on offshore wind lease area grids associated with Atlantic Shores North (Lease Area OCS-A 0549), Ocean Wind 1 (Lease Area OCS-A 0498) and Ocean Wind 2 (Lease Area OCS-A 0532), Garden State Offshore Energy I (Lease Area OCS-A 0482), Skipjack Offshore Energy (part of Lease Area OCS-A 0519), Bight Wind Holdings (OCS-A 0539), Atlantic Shores Offshore Wind Bight (OCS-A 0541), and Invenergy Wind Offshore (OCS-A 0542). Turbines are counted as "visible" if the computer model determines a single point on the component would be seen from the eye level of a window, observation deck, or ground location. Table 2 provides a summary of the height and maximum number of proposed WTGs for each of these projects.

Table 2 Maximum-case scenario numbers of WTGs modeled for the Project and other theoretically visible offshore wind projects for the cumulative visual analysis

Offshore Wind Project	Height of WTG Blade Tips (MLLW)	Height of Hubs (MLLW)	Number of WTGs (Maximum-Case Scenario)
Atlantic Shores North (OCS-A 0549)	1,049 feet	576 feet	157
Atlantic Shores South (the Project) (OCS-A 0499)	1,049 feet	576 feet	200
Garden State Offshore Energy I (OCS-A 0482)	853 feet	492 feet	60

Offshore Wind Project	Height of WTG Blade Tips (MLLW)	Height of Hubs (MLLW)	Number of WTGs (Maximum-Case Scenario)
Bight Wind Holdings (OCS-A 0539)	853 feet	492 feet	148
Atlantic Shores Offshore Wind Bight (OCS-A 0541)	853 feet	492 feet	95
Invenergy Wind Offshore (OCS-A 0542)	853 feet	492 feet	99
Ocean Wind 1 (OCS-A 0498)	906 feet	512 feet	98
Ocean Wind 2 (OCS-A 0532)	906 feet	512 feet	111
Skipjack Offshore Energy (part of OCS-A 0519)	853 feet	492 feet	53
Total Maximum-Case Scenario WTGs:			**1,021**

Source: Atlantic Shores 2023.
Note: All heights for the Project are provided relative to mean lower low water (MLLW). For all other projects, the hub and turbine heights are based on the maximum-case scenario for the lease area as presented in the projects' COPs or standard sizes of commercially available WTGs when a COP has not yet been submitted and may be presented relative to MLLW, mean sea level, or height above highest astronomical tide.

In addition to height of the property above sea level and height of potential viewers (estimated to be 6 feet tall [2 meters]) at each of the 27 historic properties, the analysis also considered height of the WTGs, Earth curvature, and distance between the historic properties and WTGs. WTG height varied between the Project, which proposes WTGs with a blade tip height of 1,049 feet (320 meters) (Figure 4), and the other offshore wind energy development activities, which propose WTGs with blade tip heights ranging from 853 to 1,049 feet (260 to 320 meters) (maximum blade tip elevation above flat sea surface; Table 2). The height of the hubs as listed in Table 2 represents the approximate height of the highest fixed Aviation Obstruction Warning Lights (AOWLs) on the WTGs. An analysis of the visibility of the hubs informs the discussion of nighttime lighting effects on historic properties (Section 2.5, *Nighttime Lighting*).

The analysis also considered the theoretical visibility of the permanent met tower associated with the Project; the four potential locations for the tower were assessed for theoretical visibility from each historic property. The analysis accounted for the height of the tower, Earth curvature, and the distance between the historic properties and the tower. The maximum height of the tower would not exceed 16.5 feet (5 meters) above the hub height of the largest WTG installed. Therefore, the assumed maximum height of the tower was 590.6 feet (180 meters) above mean sea level (MSL) (Figure 5; COP Volume I, Section 4.6.1; Atlantic Shores 2023).

Offshore substations were not included in this analysis as the locations and heights for these have not been determined for all the projects. This maintains consistency with the "reasonably foreseeable future offshore WTGs" analyzed in the *Atlantic Shores Offshore Wind South Project Draft Environmental Impact Statement* (BOEM 2023a).

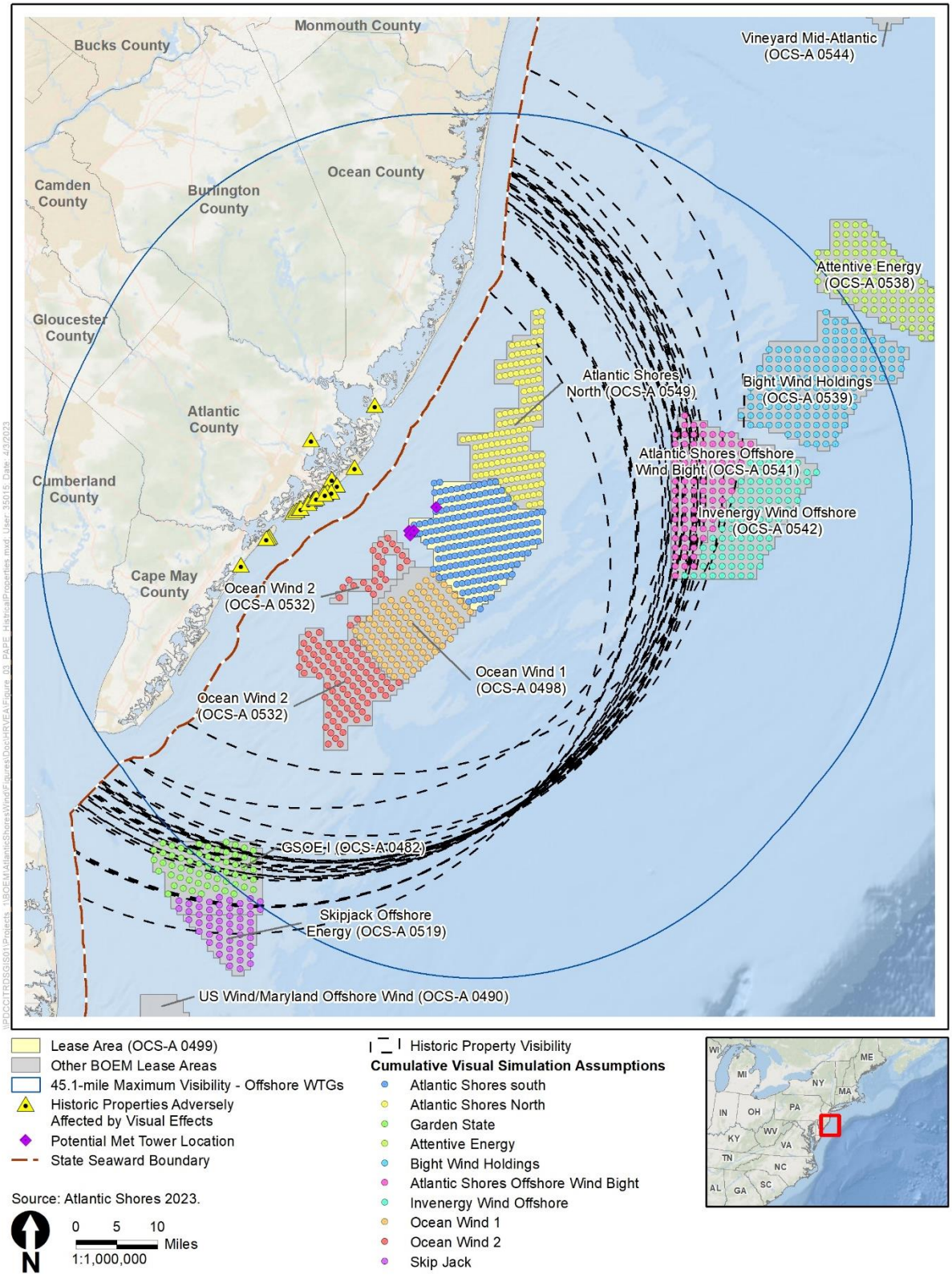
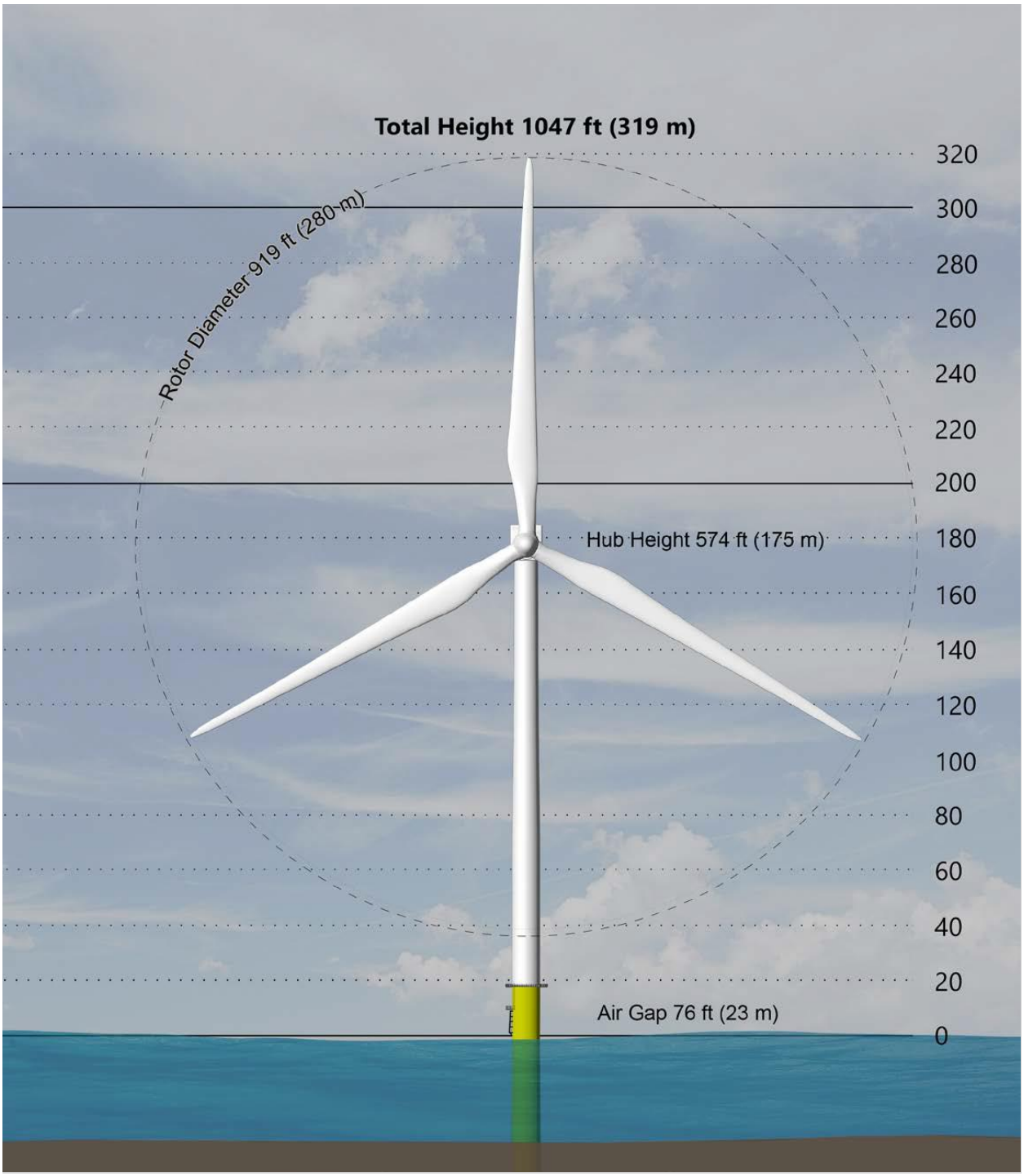
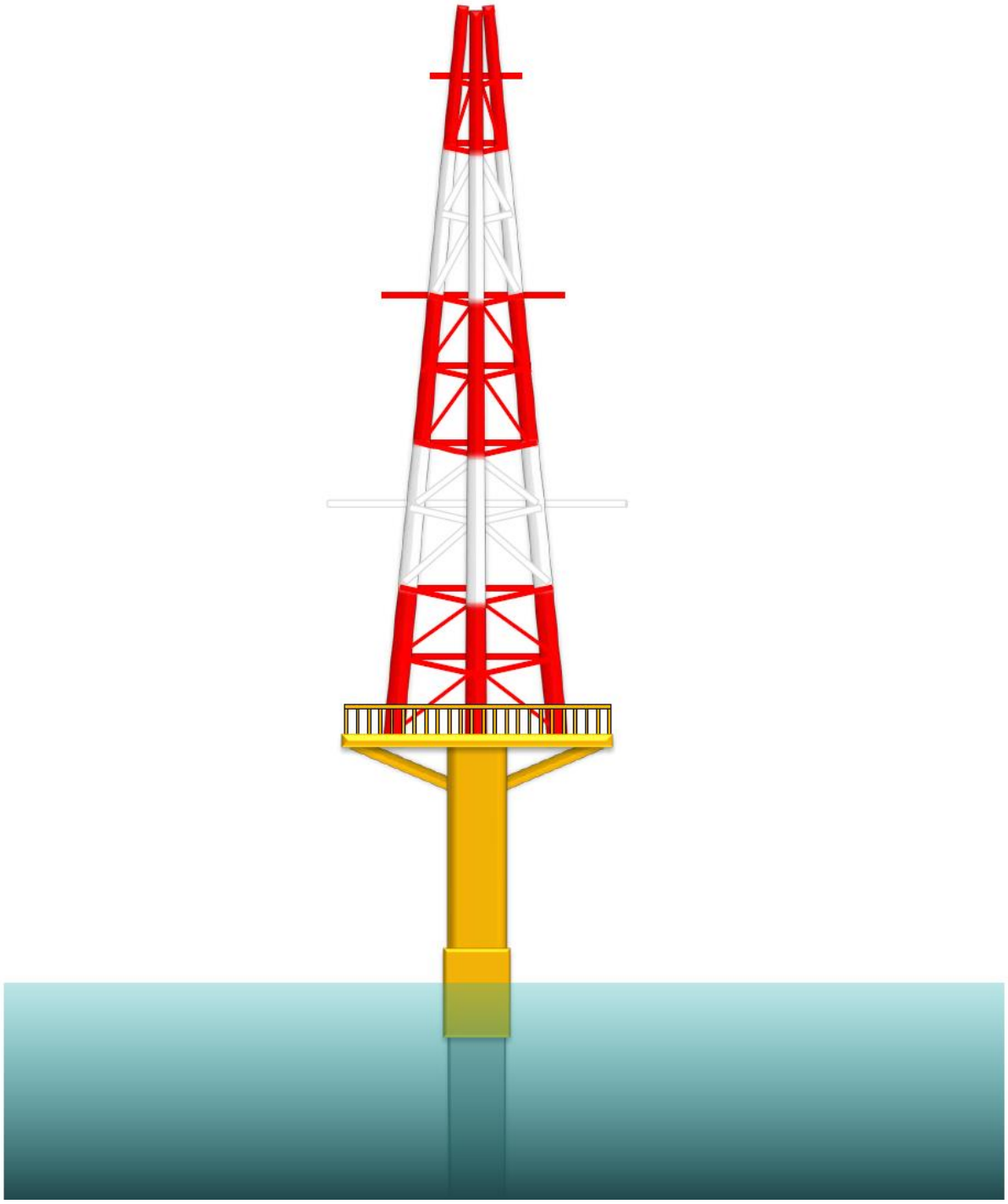


Figure 3 WTG locations for cumulative visual photosimulations across the adjacent BOEM lease areas, including the Project and other offshore energy projects within the geographic analysis area



Source: COP Volume I, Figure 4.3-1; Atlantic Shores 2023.
WTG dimensions used for cumulative visual photosimulations varied by project, with wind turbine blade tip height ranging from 853 to 1,049 feet (260 to 320 meters). All heights in this figure are provided relative to mean sea level. This figure shows a theoretical height of 1,047 feet (319 meters); the maximum proposed WTG height for this Project is 1,049 feet (320 meters).

Figure 4 Dimensions for WTGs proposed for the Project



Source: COP Volume I, Figure 4.6-2; Atlantic Shores 2023.

Figure 5 Representative met tower schematic; assumed maximum height is 590.6 feet (180 meters) above MSL

2.2 Cumulative Visual Photosimulations

The modeling of cumulative visual effects also involved the creation of cumulative visual photosimulations from eight KOPs by Atlantic Shores (see Appendices B and C). The visual photosimulations include five development construction scenarios plus existing conditions for the eight KOPs. These scenarios are defined in Appendix B as follows:

- **Scenario 1:** 2023–2025 Project construction (Ocean Wind, Empire Wind 1, Empire Wind 2).
- **Scenario 2:** Atlantic Shores Offshore Wind South construction (2025–2027) added to Scenario 1.
- **Scenario 3 (Full Build-Out):** 2024–2030 Project construction added after the construction of Atlantic Shores Offshore Wind South[2] (Skipjack Offshore Energy; Garden State Offshore Energy; U.S. Wind/Maryland Offshore Wind[3]; Atlantic Shores North; Ocean Wind 2; Hudson North; Central Bight; Hudson South B, C, E, and F).[4]
- **Scenario 4:** Full Build-Out Scenario of all lease areas without Atlantic Shores Offshore Wind South.
- **Scenario 5:** Atlantic Shores Offshore Wind South without other foreseeable planned activities.

Appendix C presents cumulative visual photosimulations that illustrate theoretical visibility of WTGs associated with the Project in combination with those of other foreseeable projects. The photosimulations depict the proposed offshore project components (i.e., WTGs and OSSs) and best-available layout details for other BOEM-identified proximate planned projects: Atlantic Shores North (OCS-A 0549), Ocean Wind 1 (OCS-A 0498), Ocean Wind 2 (OCS-A 0532), Skipjack Offshore Energy (part of OCS-A 0519), Garden State Offshore Energy I (OCS-A 0482), Empire Wind 1 (part of OCS-A 0512), Empire Wind 2 (part of OCS-A 0512), U.S. Wind/Maryland Offshore Wind (part of OCS-A 0490), OW Ocean Winds East (OCS-A 0537), Attentive Energy (OCS-A 0538), Bight Wind Holdings (OCS-A 0539), Atlantic Shores Offshore Wind Bight (OCS-A 0541), Invenergy Wind Offshore (OCS-A 0542), and Vineyard Mid-Atlantic (OCS-A 0544). These visual photosimulations are modeled based on KOPs positioned at locations with representative views. These representative views are not intended to be located at all elements of historic properties, or even directly at historic properties, but are rather situated at approximate locations to provide open views toward WTGs, considering the distance of historic properties from the maximum possible build-out of all WTG locations modeled in the offshore wind lease areas for the Project and other offshore wind energy development activities.

2.3 Weather and Atmospheric Conditions

The HRVEA describes the effect of weather and atmospheric conditions on visual effects on historic properties (COP Volume II, Appendix II-O; Atlantic Shores 2023):

> A study completed in Europe, *Offshore Wind Turbine Visibility and Visual Impact Threshold Distances* (Sullivan et al., 2013) concluded that offshore wind facilities were judged to be a major focus of visual attention at distances up to 10 miles (16.1 km); were noticeable to casual observers at distances of almost 18 miles (29 km); and were visible with extended or concentrated viewing at distances beyond 25 miles (40.2 km) (Sullivan et al., 2013). Although these studies consider

[2] Referred to in Appendix B as Atlantic Shores.
[3] This project is referred to as US Wind in Appendix B and Appendix C.
[4] Since the initial production of this report, the names of Hudson North; Central Bight; and Hudson South B, C, E, and F lease areas have been changed. The lease areas are referred to in this CHRVEA and in Appendix C by their lease area numbers and new titles: i.e., Ocean Wind East – OCS-A 0537 (formerly Central Bight); Attentive Energy – OCS-A 0538 (formerly Hudson South B); Bight Wind Holdings – OCS-A 0539 (formerly Hudson South C); Atlantic Shores Offshore Wind Bight – OCS-A 0541 (formerly Hudson South E); Invenergy Wind Offshore – OCS-A 0542 (formerly Hudson South F); and Mid-Atlantic Offshore Wind – OCS-A 0544 (formerly Hudson North).

> WTGs that are smaller than those included in this HRVEA, they are still relevant in that the most influential limiting factor in WTG visibility from open coastal locations is atmospheric perspective (Sullivan et al., 2013). These influences on WTG visibility are generally independent of the size of the technology. Moisture and atmospheric particles will always have a significant influence on visibility over the ocean regardless of the size of the technology. However, it is anticipated that when viewed under clear weather conditions, the visual prominence of larger WTGs will extend over a greater distance and could be the focus of viewer beyond 10 miles (16 km) away. Furthermore, regarding the technology under consideration for the Projects, it is anticipated that visibility from beach level under clear conditions will include a portion of the WTG blades at a distance of 40 miles (64.4 km)…

The Project WTGs would contribute a large portion of the visible WTGs and would blend in with the full build-out of WTGs of other offshore wind energy development activities visible from the historic properties. WTGs of other offshore wind energy development activities would be readily noticeable to and draw the attention of the casual observer at each of the historic properties.

2.4 Visual Effects

This CHRVEA uses the modeling of the Project viewshed and cumulative WTG theoretical visibility within that viewshed to inform this analysis. The analysis considers the importance of maritime setting to the integrity of the 27 historic properties from the vantage of significant seaward views that could include the Project WTGs and the WTGs of other planned offshore wind energy development activities. The modeling quantifies the total number of WTGs that are theoretically visible from the historic properties and the distance at which they may be visible.

The Project would add to the cumulative visual effects on the 27 historic properties identified within its APE for visual effects analysis, when combined with the effects of other past, present, or reasonably foreseeable future actions. This may occur where there is intervisibility between the Project viewshed and the viewshed of other actions. The area of intervisibility is the geographic extent of the intersection of Project visibility with the visibility of another action (see Figure 3). The potential Project WTG locations within the Lease Area (OCS-A 0499) have the potential for intervisibility with other WTG locations to be installed within the adjoining lease area for Atlantic Shores North (Lease Area OCS-A 0549) to the north, and within the BOEM offshore wind lease areas to the south, including Ocean Wind 1 (Lease Area OCS-A 0498), Ocean Wind 2 (Lease Area OCS-A 0532), Garden State Offshore Energy I (Lease Area OCS-A 0482), Skipjack Offshore Energy (Lease Area OCS-A 0519), Bight Wind Holdings (OCS-A 0539), Atlantic Shores Offshore Wind Bight (OCS-A 0541), and Invenergy Wind Offshore (OCS-A 0542). These could be constructed from 2023 through 2030, with up to four projects simultaneously under construction in 2026–2027 (BOEM 2023a).

Table 3 provides the maximum number of theoretically visible WTGs from each of the 27 adversely affected historic properties based on current and reasonably foreseeable offshore wind energy development activities. Table 3 also provides the distance between each historic property and the nearest WTG associated with the Project and other projects within the geographic analysis area.

Table 3 Historic properties and WTG visibility

Historic Property	Total Number of Theoretically Visible WTGs (blade tips) from Historic Property	Distance from the Historic Property to the Nearest Theoretically Visible WTG for Atlantic Shores South and Other Proposed Wind Farms
Atlantic City	876 WTGs	10.47 miles to nearest Atlantic Shores South WTG and

Historic Property	Total Number of Theoretically Visible WTGs (blade tips) from Historic Property	Distance from the Historic Property to the Nearest Theoretically Visible WTG for Atlantic Shores South and Other Proposed Wind Farms
Boardwalk Historic District		8.62 miles to the nearest potential WTG location for other wind energy development activities (Ocean Wind 2)
Atlantic City Convention Hall NHL	749 WTGs	11.4 miles to nearest Atlantic Shores South WTG and 9.12 miles to the nearest potential WTG location for other wind energy development activities (Ocean Wind 2)
Brigantine Hotel	722 WTGs	9.91 miles to nearest Atlantic Shores South WTG and 9.61 miles to the nearest potential WTG location for other wind energy development activities (Ocean Wind 2)
Brighton Park	557 WTGs	11.16 miles to nearest Atlantic Shores South WTG and 9.02 miles to the nearest potential WTG location for other wind energy development activities (Ocean Wind 2)
Central Pier	592 WTGs	10.85 miles to nearest Atlantic Shores South WTG and 8.77 miles to the nearest potential WTG location for other wind energy development activities (Ocean Wind 2)
Colonial Revival Residence at 120 Atlantic Avenue	597 WTGs	10.65 miles to nearest Atlantic Shores South WTG and 9.03 miles to the nearest potential WTG location for other wind energy development activities (Ocean Wind 2)
Folk Victorian Residence at 5231–5229 Central Avenue	628 WTGs	20.82 miles to nearest Atlantic Shores South WTG and 11.86 miles to the nearest potential WTG location for other wind energy development activities (Ocean Wind 2)
Gillian's Wonderland Pier	616 WTGs	17.01 miles to nearest Atlantic Shores South WTG and 10.90 miles to the nearest potential WTG location for other wind energy development activities (Ocean Wind 2)
John Stafford Historic District	575 WTGs	12.47 miles to nearest Atlantic Shores South WTG and 9.63 miles to the nearest potential WTG location for other wind energy development activities (Ocean Wind 2)
Little Egg Harbor U.S. Life Saving Station #23	659 WTGs	11.95 miles to nearest Atlantic Shores South WTG and 11.56 miles to the nearest potential WTG location for other wind energy development activities (Atlantic Shores North)
Lucy, The Margate Elephant	568 WTGs	14.4 miles to nearest Atlantic Shores South WTG and 10.73 miles to the nearest potential WTG location for other wind energy development activities (Ocean Wind 2)
Margate Fishing Pier	564 WTGs	13.6 miles to nearest Atlantic Shores South WTG and 10.22 miles to the nearest potential WTG location for other wind energy development activities (Ocean Wind 2)
Missouri Avenue Beach (Chicken Bone Beach)	557 WTGs	11.24 miles to nearest Atlantic Shores South WTG and 8.97 miles to the nearest potential WTG location for other wind energy development activities (Ocean Wind 2)
Music Pier	616 WTGs	17.2 miles to nearest Atlantic Shores South WTG and 10.97 miles to the nearest potential WTG location for other wind energy development activities (Ocean Wind 2)
Ocean City Boardwalk	589 WTGs	16.98 miles to nearest Atlantic Shores South WTG and 10.87 miles to the nearest potential WTG location for other wind energy development activities (Ocean Wind 2)
Residence at 114	568 WTGs	13.01 miles to nearest Atlantic Shores South WTG and

Historic Property	Total Number of Theoretically Visible WTGs (blade tips) from Historic Property	Distance from the Historic Property to the Nearest Theoretically Visible WTG for Atlantic Shores South and Other Proposed Wind Farms
South Harvard Avenue		9.92 miles to the nearest potential WTG location for other wind energy development activities (Ocean Wind 2)
Residence at 125 S Montgomery Avenue	561 WTGs	12.4 miles to nearest Atlantic Shores South WTG and 9.60 miles to the nearest potential WTG location for other wind energy development activities (Ocean Wind 2)
Ritz Carlton Hotel	807 WTGs	11.66 miles to nearest Atlantic Shores South WTG and 9.26 miles to the nearest potential WTG location for other wind energy development activities (Ocean Wind 2)
Riviera Apartments	557 WTGs	12.26 miles to nearest Atlantic Shores South WTG and 9.54 miles to the nearest potential WTG location for other wind energy development activities (Ocean Wind 2)
Saint Leonard's Tract Historic District	731 WTGs	12.69 miles to nearest Atlantic Shores South WTG and 9.75 miles to the nearest potential WTG location for other wind energy development activities (Ocean Wind 2)
Seaview Golf Club, Clarence Geist Pavilion	655 WTGs	15.6 miles to nearest Atlantic Shores South WTG and 14.92 miles to the nearest potential WTG location for other wind energy development activities (Ocean Wind 2)
Two-and-a-Half-Story Residence at 124 Atlantic Avenue	594 WTGs	10.65 miles to nearest Atlantic Shores South WTG and 9.03 miles to the nearest potential WTG location for other wind energy development activities (Ocean Wind 2)
Two-Story Residence at 108 South Gladstone Avenue	577 WTGs	13.82 miles to nearest Atlantic Shores South WTG and 10.44 miles to the nearest potential WTG location for other wind energy development activities (Ocean Wind 2)
Two-Story Residence at 114 South Osborne Avenue	577 WTGs	14.11 miles to nearest Atlantic Shores South WTG and 10.63 miles to the nearest potential WTG location for other wind energy development activities (Ocean Wind 2)
U.S. Coast Guard (USCG) Station Atlantic City	604 WTGs	11.46 miles to nearest Atlantic Shores South WTG and 9.91 miles to the nearest potential WTG location for other wind energy development activities (Ocean Wind 2)
Vassar Square Condominiums	800 WTGs	12.45 miles to nearest Atlantic Shores South WTG and 9.62 miles to the nearest potential WTG location for other wind energy development activities (Ocean Wind 2)
Ventnor City Fishing Pier	568 WTGs	12.83 miles to nearest Atlantic Shores South WTG and 9.72 miles to the nearest potential WTG location for other wind energy development activities (Ocean Wind 2)

Table 4 summarizes the number of theoretically visible WTGs up to the blade tip and theoretically visible WTG hubs from each historic property. Aviation navigation lights are generally placed at their highest point on the hubs or nacelles; therefore, the maximum theoretically visible nacelles indicate the maximum theoretically visible aviation lights at nighttime from each historic property. Table 5 summarizes the percentage of theoretically visible WTGs from each historic property for the Project and other foreseeable offshore wind activities. One permanent met tower will be installed for the Project in one of the four proposed locations; Table 6 provides the number of theoretically visible met tower locations from each historic property.

Table 4 Summary of theoretically visible WTGs by project from historic properties

Historic Property	Maximum Number of Theoretically Visible WTGs and Hubs per Project Presented as: WTGs (up to blade tip); Hubs									
	Atlantic Shores South (the Project)	Atlantic Shores North	Ocean Wind 1	Ocean Wind 2	Garden State	Skipjack	Bight Wind Holdings	Atlantic Shores Offshore Wind Bight	Invenergy Wind Offshore	Total
Atlantic City Boardwalk Historic District	200; 200	148; 148	98; 98	111; 111	60; 30	41; 0	32; 0	95; 80	91; 13	876; 680
Atlantic City Convention Hall NHL	200; 200	148; 148	98; 98	111; 111	59; 0	5; 0	0; 0	93; 3	35; 0	749; 560
Brigantine Hotel	200; 200	148; 148	98; 98	111; 111	11; 0	0; 0	7; 0	95; 26	52; 0	722; 583
Brighton Park	200; 200	148; 145	98; 98	111; 111	0; 0	0; 0	0; 0	0; 0	0; 0	557; 554
Central Pier	200; 200	148; 148	98; 98	111; 111	4; 0	0; 0	0; 0	0; 0	31; 0	592; 557
Colonial Revival Residence at 120 Atlantic Avenue	200; 200	148; 148	98; 98	111; 111	0; 0	0; 0	0; 0	0; 0	40; 0	597; 557
Folk Victorian Residence at 5231–5229 Central Avenue	200; 195	143; 25	98; 98	111; 111	60; 2	16; 0	0; 0	0; 0	0; 0	628; 431
Gillian's Wonderland Pier	200; 200	148; 102	98; 98	111; 111	59; 0	0; 0	0; 0	0; 0	0; 0	616; 511
John Stafford Historic District	200; 200	148; 147	98; 98	111; 111	11; 0	0; 0	0; 0	7; 0	0; 0	575; 556
Little Egg Harbor U.S. Life Saving Station #23	200; 200	148; 148	98; 98	111; 94	0; 0	0; 0	1; 0	91; 0	10; 0	659; 540
Lucy, The Margate Elephant	200; 200	148; 120	98; 98	111; 111	11; 0	0; 0	0; 0	0; 0	0; 0	568; 529
Margate Fishing Pier	200; 200	148; 132	98; 98	111; 111	7; 0	0; 0	0; 0	0; 0	0; 0	564; 541
Missouri Avenue Beach (Chicken Bone Beach)	200; 200	148; 136	98; 98	111; 111	0; 0	0; 0	0; 0	0; 0	0; 0	557; 545
Music Pier	200; 200	148; 101	98; 98	111; 111	59; 0	0; 0	0; 0	0; 0	0; 0	616; 510

Historic Property	Maximum Number of Theoretically Visible WTGs and Hubs per Project Presented as: WTGs (up to blade tip); Hubs									
	Atlantic Shores South (the Project)	Atlantic Shores North	Ocean Wind 1	Ocean Wind 2	Garden State	Skipjack	Bight Wind Holdings	Atlantic Shores Offshore Wind Bight	Invenergy Wind Offshore	Total
Ocean City Boardwalk	200; 200	148; 51	98; 98	111; 111	32;	0;	0; 0	0; 0	0; 0	589; 460
Residence at 114 South Harvard Avenue	200; 200	148; 143	98; 98	111; 111	11; 0	0; 0	0; 0	0; 0	0; 0	568; 552
Residence at 125 S Montgomery Avenue	200; 200	148; 143	98; 98	111; 111	4; 0	0; 0	0; 0	0; 0	0; 0	561; 552
Ritz Carlton Hotel	200; 200	148; 148	98; 98	111; 111	60; 11	27; 0	6; 0	95; 33	62; 0	807; 601
Riviera Apartments	200; 200	148; 129	98; 98	111; 111	0; 0	0; 0	0; 0	0; 0	0; 0	557; 538
Saint Leonard's Tract Historic District	200; 200	148; 148	98; 98	111; 111	60; 4	14; 0	0; 0	82; 0	18; 0	731; 561
Seaview Golf Club, Clarence Geist Pavilion	200; 200	148; 148	98; 98	111; 111	11; 0	0; 0	0; 0	80; 0	7; 0	655; 557
Two-and-a-Half-Story Residence at 124 Atlantic Avenue	200; 200	148; 148	98; 98	111; 111	0; 0	0; 0	0; 0	37; 0	0; 0	594; 557
Two-Story Residence at 108 South Gladstone Avenue	200; 200	148; 139	98; 98	111; 111	20; 0	0; 0	0; 0	0; 0	0; 0	577; 548
Two-Story Residence at 114 South Osborne Avenue	200; 200	148; 136	98; 98	111; 111	20; 0	0; 0	0; 0	0; 0	0; 0	577; 545
U.S. Coast Guard (USCG) Station Atlantic City	200; 200	148; 148	98; 98	111; 111	0; 0	0; 0	0; 0	46; 0	1; 0	604; 557
Vassar Square Condominiums	200; 200	148; 148	98; 98	111; 111	60; 22	35; 0	2; 0	95; 25	51; 0	800; 604
Ventnor City Fishing Pier	200; 200	148; 143	98; 98	111; 111	21; 0	0; 0	0; 0	0; 0	0; 0	568; 552

Notes: Percentages are rounded to the nearest tenth place decimal.

Table 5 Summary of project contributions of theoretically visible WTGs from historic properties

Historic Property	Percent of Project Contribution to Visible WTGs (up to blade tip)	Percent of Contribution from Other Offshore Wind Energy Projects to Visible WTGs
Atlantic City Boardwalk Historic District	22.8	77.2
Atlantic City Convention Hall NHL	26.7	73.3
Brigantine Hotel	27.7	72.3
Brighton Park	35.9	64.1
Central Pier	33.8	66.2
Colonial Revival Residence at 120 Atlantic Avenue	33.5	66.5
Folk Victorian Residence at 5231–5229 Central Avenue	31.8	68.2
Gillian's Wonderland Pier	32.5	67.5
John Stafford Historic District	34.8	65.2
Little Egg Harbor U.S. Life Saving Station #23	30.3	69.7
Lucy, The Margate Elephant	35.2	64.8
Margate Fishing Pier	35.5	64.5
Missouri Avenue Beach (Chicken Bone Beach)	35.9	64.1
Music Pier	32.5	67.5
Ocean City Boardwalk	34.0	66.0
Residence at 114 South Harvard Avenue	35.2	64.8
Residence at 125 S Montgomery Avenue	35.7	64.3
Ritz Carlton Hotel	24.8	75.2
Riviera Apartments	35.9	64.1
Saint Leonard's Tract Historic District	27.4	72.6
Seaview Golf Club, Clarence Geist Pavilion	30.5	69.5
Two-and-a-Half-Story Residence at 124 Atlantic Avenue	33.7	66.3
Two-Story Residence at 108 South Gladstone Avenue	34.7	65.3
Two-Story Residence at 114 South Osborne Avenue	34.7	65.3
U.S. Coast Guard (USCG) Station Atlantic City	33.1	66.9
Vassar Square Condominiums	25.0	75.0
Ventnor City Fishing Pier	35.2	64.8

Table 6 Summary of theoretically visible meteorological tower locations from historic properties

Historic Property	Number of Theoretically Visible Meteorological Tower Locations from the Historic Properties	Distance Between the Nearest Meteorological Tower Location and the Historic Properties
Atlantic City Boardwalk Historic District	4	10.27 miles
Atlantic City Convention Hall NHL	4	11.17 miles
Brigantine Hotel	4	10.28 miles
Brighton Park	4	10.92 miles
Central Pier	4	10.60 miles
Colonial Revival Residence at 120 Atlantic Avenue	4	10.49 miles
Folk Victorian Residence at 5231–5229 Central Avenue	4	20.93 miles
Gillian's Wonderland Pier	4	17.03 miles
John Stafford Historic District	4	12.30 miles
Little Egg Harbor U.S. Life Saving Station #23	4	14.55 miles
Lucy, The Margate Elephant	4	14.31 miles
Margate Fishing Pier	4	13.49 miles
Missouri Avenue Beach (Chicken Bone Beach)	4	11.01 miles
Music Pier	4	17.22 miles
Ocean City Boardwalk	4	17.00 miles
Residence at 114 South Harvard Avenue	4	12.86 miles
Residence at 125 S Montgomery Avenue	4	12.22 miles
Ritz Carlton Hotel	4	11.44 miles
Riviera Apartments	4	12.07 miles
Saint Leonard's Tract Historic District	4	12.53 miles
Seaview Golf Club, Clarence Geist Pavilion	4	16.02 miles
Two-and-a-Half-Story Residence at 124 Atlantic Avenue	4	10.50 miles
Two-Story Residence at 108 South Gladstone Avenue	4	13.70 miles
Two-Story Residence at 114 South Osborne Avenue	4	14.00 miles
U.S. Coast Guard (USCG) Station Atlantic City	4	11.33 miles
Vassar Square Condominiums	4	12.28 miles
Ventnor City Fishing Pier	4	12.69 miles

The Project will contribute a large portion, approximately 20 percent, of the total WTGs in the cumulative geographic analysis area. As shown in Table 4, Atlantic Shores North, Ocean Wind 1, and Ocean Wind 2 would also contribute significantly to the total number of theoretically visible WTGs from all the historic properties. As summarized in Table 5, the Project WTG locations represent 22.8 to 35.9 percent of the total WTGs that are theoretically visible from the 27 historic properties in the cumulative build-out scenario of wind energy developments in the area. As depicted in the cumulative photosimulations (Appendix C), the Project WTGs would foreseeably be surrounded by other offshore wind energy development activities that would constitute 64.1 to 77.2 percent of the total WTGs theoretically visible from the 27 historic properties based on maximum WTG build-out. The met tower could also contribute to the total number of offshore wind structures in the geographic analysis area. Therefore, the Project would constitute a significant portion of the total theoretically visible offshore wind structures from all the historic properties based on the maximum WTG build-out from all development activities by 2030.

As summarized in the HRVEA (COP Volume II, Appendix II-O; Atlantic Shores 2023), Sullivan et al. (2013) found that WTGs of other offshore wind energy development activities would be readily noticeable to and draw the attention of the casual observer at the historic properties at distances comparable to those from the current Project. The study found that, in general, offshore wind facilities tend to be a major focus of visual attention at distances up to 10 miles and were only noticeable to casual observers at distances of up to almost 18 miles (Sullivan et al. 2013). Based on these factors and the analysis presented in Table 4, the 27 historic properties would experience cumulative visual effects from the Project and the other offshore wind development activities in the geographic analysis area.

As illustrated in the cumulative photosimulations (Appendices B and C), views of the Project WTGs would vary from the 27 historic properties based on their location along the New Jersey coast and within the APE. Not all potential and theoretically visible WTGs from the Project and other reasonably foreseeable offshore wind energy development activities would be visible from each of the 27 historic properties. WTGs would begin to disappear from view at locations with increased distance from the historic properties or would be obstructed due to the presence of WTGs associated with surrounding projects. For example, views of the Project WTGs, particularly from the southern portion of the APE near Cape May, could be obstructed by WTGs associated with Ocean Wind 1 and Ocean Wind 2. For historic properties located in the northern portion of the APE, views of the Project WTGs could be obstructed by WTGs associated with Atlantic Shores North. Similarly, views of the Bight Wind Holdings, Atlantic Shores Offshore Wind Bight, and Invenergy Wind Offshore would likely be obscured by all of the WTGs located closer to the shores of New Jersey. Overall, views of WTGs associated with the southernmost projects, Garden State and Skipjack, would likely be limited from many of the historic properties due to distance and atmospheric conditions.

The proposed locations for the permanent met tower are along the west side of the lease area. The closest tower is located 10.1 miles (16.25 kilometers) from shore and all four locations are more than 10 miles (16.1 kilometer) from the nearest historic property. The tower is shorter than the WTGs, but the proposed locations in front of most of the WTGs from the perspective of the 27 historic properties and the coloring of the tower (red and white) could contribute to its visibility as it creates contrast with the current ocean views.

2.5 Nighttime Lighting

Nighttime lighting could affect properties on the shore when the WTGs are visible. Temporary lighting associated with nighttime construction or operations and maintenance, such as helicopter hoist status lights, may be utilized on WTGs when necessary. Outdoor lighting on OSSs may also be used when necessary for maintenance occurring at night (COP Volume II, Chapter 6.1.2.2; Atlantic Shores 2023). According to the VIA, "[r]ating panel members commented that light from the AOWL is prominent and

will draw viewer attention in a setting that normally appears dark and undeveloped. Further the alternating blinking associated with the navigation lights and AOWL will be distracting to viewers" (COP Volume II, Appendix II-T; Atlantic Shores 2023). For visual photosimulations of nighttime lighting from the Project and other offshore wind energy development activity WTGs, see Appendix C.

The NPS has indicated during consultation for other offshore wind projects that a dark nighttime sky should be assumed to be a character-defining feature of certain resource types—including lighthouses, light stations, and observatories—and resources associated with historic events that may have occurred at night, such as battlefields. Of the 27 historic properties assessed in the CHRVEA, two are resource types that meet these conditions: the U.S. Coast Guard (USCG) Station Atlantic City and the Little Egg Harbor U.S. Life Saving Station #23. These properties would experience a cumulative adverse effect, but would retain sufficient integrity to convey their eligibility to the NRHP.

An Aircraft Detection Lighting System (ADLS) or related means would be used for the Project to significantly reduce the impact of nighttime aviation lighting from WTGs. An ADLS will activate when aircraft enter the light activation volume and will deactivate when all aircraft depart. Based on historical air traffic data for flights passing through the light activation areas for the Project, ADLS-controlled lights would have been activated for approximately 9 hours per year (COP, Appendix II-M4; Atlantic Shores 2023). If other offshore wind development activities also implement an ADLS or related system, the amount of time that lighting occurs on the nacelles of the Project WTGs would also be reduced. If the Project and other offshore wind development activities do not implement an ADLS or related system, nighttime lighting on the WTGs would be more readily and consistently visible, depending on weather conditions, from the historic properties.

As such, there would be cumulative visual effects from nighttime visibility of aviation lights on the WTG nacelles associated with the Project and other proposed offshore wind development projects, particularly if an ADLS or related system is not implemented for all offshore wind projects within the geographic analysis area.

3 CUMULATIVE EFFECTS CONSIDERATIONS SPECIFIC TO NATIONAL HISTORIC LANDMARKS AND THE NATIONAL HISTORIC PRESERVATION ACT SECTION 106 PROCESS

The NPS, which administers the NHL program for the Secretary of the Interior (Secretary), describes NHLs and requirements for NHLs as follows:

> National Historic Landmarks (NHL) are designated by the Secretary under the authority of the Historic Sites Act of 1935, which authorizes the Secretary to identify historic and archaeological sites, buildings, and objects which "possess exceptional value as commemorating or illustrating the history of the United States." Section 110(f) of the NHPA requires that Federal agencies exercise a higher standard of care when considering undertakings that may directly and adversely affect NHLs. The law requires that agencies, "to the maximum extent possible, undertake such planning and actions as may be necessary to minimize harm to such landmark." In those cases when an agency's undertaking directly and adversely affects an NHL, or when Federal permits, licenses, grants, and other programs and projects under its jurisdiction or carried out by a state or local government pursuant to a Federal delegation or approval so affect an NHL, the agency should consider all prudent and feasible alternatives to avoid an adverse effect on the NHL. (NPS 2021)

NHPA Section 110(f) applies specifically to NHLs. BOEM is implementing the special set of requirements for protecting NHLs and for compliance with NHPA Section 110(f) at 36 CFR 800.10, which, in summary:

1. Requires the agency official, to the maximum extent possible, to undertake such planning and actions as may be necessary to minimize harm to any NHL that may be directly and adversely affected by an undertaking;
2. Requires the agency official to request the participation of the ACHP in any consultation conducted under 36 CFR 800.6 to resolve adverse effects on NHLs; and
3. Further directs the agency to notify the Secretary of any consultation involving an NHL and to invite the Secretary to participate in consultation where there may be an adverse effect.

The HRVEA identified two NHLs in the visual APE for the Project: Atlantic City Convention Hall and Lucy, The Margate Elephant. BOEM has determined that both NHLs would be adversely affected by the Project (COP Volume II, Appendix II-O; Atlantic Shores 2023).

According to the NPS (NPS 2021), when an undertaking directly and adversely affects an NHL, the federal agency "should consider all prudent and feasible alternatives to avoid an adverse effect on the NHL." When these alternatives "appear to require undue cost or to compromise the undertaking's goals and objects, the agency must balance those goals and objectives with the intent of section 110(f)." This includes considerations of "(1) the magnitude of the undertaking's harm to the historical, archaeological, and cultural qualities of the NHL; (2) the public interest in the NHL and in the undertaking as proposed, and, (3) the effect a mitigation action would have on meeting the goals and objectives of the undertaking" (NPS 2021).

Prudent and feasible alternatives to avoid adverse effects from the Project on the NHLs and planning to the maximum extent possible necessary to minimize harm to NHLs will be presented and addressed in BOEM's draft Memorandum of Agreement. Given the location of the Project Lease Area and the number of WTGs and offshore substation platforms proposed, BOEM determined that all feasible alternatives would result in adverse visual effects on the Atlantic City Convention Hall and Lucy, The Margate Elephant. The only alternative that BOEM was able to identify that avoids any Project effects was the No Action Alternative. BOEM has determined that, where Project-specific adverse effects are unavoidable at the NHL, cumulative adverse effects from the Project in combination with other reasonably foreseeable wind projects in adjacent leases would also be unavoidable. Further details on the NHLs follow and conclude with cumulative effects information.

3.1 Atlantic City Convention Hall

The HRVEA describes the significance of and effects of the Project on the Atlantic City Convention Hall NHL (COP, Appendix II-O; Atlantic Shores 2023):

> The Atlantic City Convention Hall NHL, constructed in 1926-1929 by Lockwood-Greene and Co., exhibits Beaux Arts and Romanesque style elements and features a cut limestone façade and curved arcade fronting the beach. The arcade features a covered double row of columns anchored by public bath houses on each end. The façade of the building features massive columns supporting Romanesque arches, and the recessed entrances feature large arched windows. Decorative motifs include elements popular on the Atlantic City Boardwalk in the 1920s and include cut stone ocean flora and fauna. The massive auditorium behind the public entrance façade is clad in brick with arched roof. The Atlantic City Convention Hall has been designated an NHL with significance in architecture, engineering, and recreation. It is significant for its monumental architecture, and represents significant engineering feats, containing at the time of its construction, the largest room with an unobstructed view ever built. The building is also significant for its role

> in the recreation of Atlantic City and the nation, becoming one of America's most popular venues for shows and events (Charleton, 1985).
>
> The Atlantic City Convention Hall NHL is located on the Atlantic City Boardwalk with the building's primary orientation toward the Atlantic Ocean. The building's arcade is constructed as to provide views of the beach and is anchored by public bath houses adjacent to the beach. The building's location on the Atlantic coast lends to its historic significance as a beachside attraction within Atlantic City….
>
> Viewshed analysis suggests that visibility of the Projects from this general area will be largely limited to the open beach and boardwalk, and a few small parcels of open land that extend inland from there. Ground-level view of the Projects will be completely blocked by the first inland row of built structures as one moves into the city. As shown in the visual simulation from KOP AC02, with the Projects in place, numerous WTGs will be visible above the horizon line. The number and mass of the WTGs interrupt the horizon and dominate the view, despite being softened by their light color and distance from the viewer. The towers are not evenly spaced in this view, with the WTGs clustered densely at the center of the view. When clustered together, the WTGs appear as larger shapes than a single WTG. The WTGs are less clustered and more widely spaced at the edges of the view. The slightly hazy conditions soften the edges of the WTGs somewhat, but the proposed WTGs will dominate the viewer's attention from this view.
>
> Applying the Criteria of Adverse Effect per NHPA Section 106, 36 CFR § 800.5…the Projects are anticipated to result in potential adverse visual effects on the Atlantic City Convention Hall. The NHL will have unobstructed views of the Projects due to the NHL's location on the boardwalk. The Convention Hall and boardwalk both have a historic relationship to views of the ocean and the high level of sensitivity to visual effects, as publicly accessible recreation venues specifically designed for access to the beach and enjoyment of the ocean horizon. Although the primary association with historic recreation pertains to events held inside the convention hall, and the critical association of the property to the Atlantic City Boardwalk would be unaffected by the Project, the property's design elements, siting, and orientation underscore the significance the beach and ocean views to the convention hall's historic setting. The proximity of the Projects to this property suggests the WTGs will be a significant focus of visitor attention when the property is experienced from the boardwalk or other exterior vantages.

A visual photosimulation from the Atlantic City Convention Center is included in Attachment E of the HRVEA (COP Appendix II-O, Attachment E; Atlantic Shores 2023). The KOP is located on the boardwalk between Pacific, Mississippi, and Florida Avenues in Atlantic City, approximately 11.4 miles (18.3 kilometers) from the nearest proposed WTG (COP Appendix II-O; Atlantic Shores 2023). Cumulatively, the maximum theoretical number of WTGs visible from the Atlantic City Convention Hall is 749; 200 of these are represented by the Project. Overall, the Project would result in a cumulative adverse effect on the Atlantic City Convention Hall.

3.2 Lucy, The Margate Elephant

The HRVEA describes the significance and effects of the Project on Lucy, The Margate Elephant NHL (COP, Appendix II-O; Atlantic Shores 2023):

> Lucy, the Margate Elephant NHL was built in 1881 by as a real estate marketing gimmick by James Lafferty, who patented zoomorphic architecture. His "Elephant Bazaar" (dubbed "Lucy" by subsequent owners) had a wood frame and tin-clad wood sheathing; the frame has since been reinforced with steel and the sheathing is currently being restored. At 65 feet tall and 60 feet long, it is one of the largest statue-like structures in America and the oldest roadside tourist attraction. In 1970, after threats of demolition, Lucy was moved to a nearby city-owned lot and restored. It was designated an NHL in 1976 (Pitts, 1976b)….

> The NHL is located at the corner of South Decatur and Atlantic Avenues in Margate City, approximately 14.4 miles (23.2 km) from the nearest proposed WTG. The photograph used for the simulation is taken from the vantage point of Lucy, the Margate Elephant's howdah, elevated approximately 60 feet (18.3 m) above the ground. To the east from this viewpoint there are numerous tall (multi-story) modern buildings and other man-made structures in the immediate foreground, backed by a fenced and planted dune restoration area. Beyond the restoration area, a strip of white sandy beach extends across the middle ground of the view. The beach is well-populated by sunbathers and other beachgoers. Beyond the band of breaking surf at the shoreline, the dark blue ocean extends to a well-defined horizon line where it meets the light blue sky. Due to the elevated location of this viewpoint, the sky is unbroken by man-made features (e.g., overhead utility poles and lines), except for the high-rise apartment building on the left side of the view. Despite the broad expanse of open water and sky, the abundance of nearby built structures and people give the view a highly developed character. As shown in the visual simulation from KOP MC02, with the proposed Projects in place, the WTGs will be visible with nacelles and rotors in full view above the horizon, occupying nearly the full field of view. Some of the Projects' WTGs are concealed behind the apartment building on the left side of the view.
>
> Applying the Criteria of Adverse Effect per NHPA Section 106, 36 CFR § 800.5 (as summarized above), the Projects are anticipated to result in potential adverse visual effects on Lucy, the Margate Elephant. The NHL is located in an area with a dense built environment characterized by modern (non-historic) architecture; therefore, its integrity of setting has been diminished. As stated above, Lucy was moved in 1970 and the new location allows for views of the Atlantic Ocean and the Intercoastal Waterway from within the howdah and through the portal windows, as well as views of the NHL from these bodies of water. Due to the proximity of the Projects to this NHL, views from within Lucy will allow for direct lines of site to the WTGs and will be a significant focus of visitor attention when viewing the ocean from the howdah or the portal windows.

A visual photosimulation taken from Lucy, The Margate Elephant is included in Attachment E of the HRVEA (COP Volume II, Appendix II-O, Attachment E; Atlantic Shores 2023). The photograph used for the simulation is taken from the vantage point of Lucy, the Margate Elephant's howdah, elevated approximately 60 feet (18.3 meters) above the ground and approximately 14.4 miles (23.2 kilometers) from the nearest proposed WTG (COP Volume II, Appendix II-O; Atlantic Shores 2023). Cumulatively, the maximum theoretical number of WTGs visible from Lucy, The Margate Elephant, is 568; 200 of these are represented by the Project. Overall, the Project would result in a cumulative adverse effect on Lucy, The Margate Elephant.

4 CONCLUSION

BOEM has determined the Project would have visual adverse effects on 27 historic properties with direct views to WTGs. The HRVEA found that the Project would not adversely affect the remaining 96 historic properties identified in the visual APE for Offshore Project components (COP Volume II, Appendix II-O; Atlantic Shores 2023). BOEM agrees with this assessment, finding no adverse effects on any historic properties identified in the visual APE for Offshore Project components beyond the 27 historic properties listed in Table 1.

This CHRVEA concludes that the Project, in combination with other offshore wind development activities, would have a cumulative adverse effect on the 27 historic properties identified:

1. Atlantic City Boardwalk Historic District, Atlantic City, New Jersey
2. Atlantic City Convention Hall NHL, Atlantic City, New Jersey
3. Brigantine Hotel, Brigantine City, New Jersey
4. Brighton Park, Atlantic City, New Jersey

5. Central Pier, Atlantic City, New Jersey
6. Colonial Revival Residence at 120 Atlantic Avenue, Atlantic City, New Jersey
7. Folk Victorian Residence at 5231–5229 Central Avenue, Ocean City, New Jersey
8. Gillian's Wonderland Pier, Ocean City, New Jersey
9. John Stafford Historic District, Ventnor City, New Jersey
10. Little Egg Harbor U.S. Life Saving Station #23, Little Egg Harbor Township, New Jersey
11. Lucy, The Margate Elephant, Margate City, New Jersey
12. Margate Fishing Pier, Margate City, New Jersey
13. Missouri Avenue Beach (Chicken Bone Beach), Atlantic City, New Jersey
14. Music Pier, Ocean City, New Jersey
15. Ocean City Boardwalk, Ocean City, New Jersey
16. Residence at 114 South Harvard Avenue, Ventnor City, New Jersey
17. Residence at 125 South Montgomery Avenue, Atlantic City, New Jersey
18. Ritz Carlton Hotel, Atlantic City, New Jersey
19. Riviera Apartments, Atlantic City, New Jersey
20. Saint Leonard's Tract Historic District, Ventnor City, New Jersey
21. Seaview Golf Club, Clarence Geist Pavilion, Galloway Township, New Jersey
22. Two-and-a-Half-Story Residence at 124 Atlantic Avenue, Atlantic City, New Jersey
23. Two-Story Residence at 108 South Gladstone Avenue, Margate City, New Jersey
24. Two-Story Residence at 114 South Osborne Avenue, Margate City, New Jersey
25. U.S. Coast Guard (USCG) Station Atlantic City, Atlantic City, New Jersey
26. Vassar Square Condominiums, Ventnor City, New Jersey
27. Ventnor City Fishing Pier, Ventnor City, New Jersey

For these historic properties, each would retain the maritime setting that contributes to its NRHP eligibility. The properties would continue to offer significant seaward views that support the integrity of the maritime setting; these seaward views include vantage points with the potential for an open view from each property toward the WTGs.

Cumulative visibility of the Project's WTGs and met tower and other offshore wind energy development activities, including construction and operation, is anticipated to intensify the level of adverse effects on the 27 historic properties. The Project would contribute a substantial portion of visible WTGs to the cumulative adverse effect owing to the location and intensity of the Project and foreseeable build-out attributable to other offshore wind energy development activities.

The conclusions here are recommendations by ICF regarding the WTGs' incremental contribution to cumulative visual effects (daytime and nighttime) on historic properties when combined with past, present, and reasonably foreseeable offshore wind energy development activities in the APE for this Project. These recommendations are provided to inform BOEM's determination of Project effects on historic properties and consultation on any effects found. Where BOEM has made its determination in Appendix I of the Draft Environmental Impact Statement (EIS)*, Finding of Adverse Effect for the Atlantic Shores Offshore Wind South Project Construction and Operations Plan*, this determination is expressed consistently in the CHRVEA. While Section 106 consultation is ongoing among BOEM, the State Historic Preservation Officer, and other identified consulting parties on the Project, final determinations and findings remain with BOEM in accordance with 36 CFR 800. This includes ongoing consultation

with Native American Tribal Nations that may identify properties of religious and cultural significance in the APE.

5 PERSONNEL

This study was authored by key personnel: Secretary of the Interior–qualified professional architectural historian Maureen McCoy, MA and MSHP with review by Secretary of the Interior–qualified archaeologist Alice Muntz, MA and RPA. Resumes of the report authors can be found in Appendix D, *Key Personnel Resumes*.

6 REFERENCES CITED

Atlantic Shores Offshore Wind (Atlantic Shores). 2023. *Construction and Operations Plan, Atlantic Shores Offshore Wind.* Volumes I–II. May. Available: https://www.boem.gov/renewable-energy/state-activities/atlantic-shores-offshore-wind-construction-and-operations-plan.

Bureau of Ocean and Energy Management (BOEM). 2023a. *Atlantic Shores Offshore Wind South Draft Environmental Impact Statement*. Available: https://www.boem.gov/renewable-energy/state-activities/atlantic-shores.

Bureau of Ocean and Energy Management (BOEM). 2023b. *Memorandum: Area of Potential Effects Delineation Memorandum for Atlantic Shores Offshore Wind South Project*. Prepared by ICF.

Charleton, James. 1985. *Atlantic City Convention Hall.* National Register of Historic Places Inventory Nomination Form. United States Department of the Interior. Washington, D.C. Available: https://npgallery.nps.gov/NRHP. Accessed: June 6, 2022.

National Historic Preservation Act (NHPA), Section 106, 36 Code of Federal Regulations Part 800. April 5, 2004. Available: https://www.achp.gov/sites/default/files/regulations/2017-02/regs-rev04.pdf. Accessed: October 31, 2022.

National Park Service (NPS). 1997. *How to Apply the National Register Criteria for Evaluation*. Rev. ed. *National Register Bulletin* 15. Available: https://www.nps.gov/subjects/nationalregister/upload/NRB-15_web508.pdf. Accessed: October 31, 2022.

National Park Service (NPS). 2021. Section 110 of the National Historic Preservation Act. Available: https://www.nps.gov/fpi/Section110.html. Accessed: October 31, 2022.

Pitts, Carolyn. 1976. *"Lucy" the Margate Elephant.* National Register of Historic Places Inventory-Nomination Form. United States Department of the Interior. Washington, D.C. Available: https://npgallery.nps.gov/NRHP. Accessed: June 6, 2022.

Sullivan, Robert G., Leslie B. Kirchler, Jackson Cothren, and Snow L. Winters. 2013. *Wind Turbine Visibility and Visual Impact Threshold Distances in Western Landscapes*. Available: https://blmwyomingvisual.anl.gov/docs/WindVITD.pdf. Accessed: October 31, 2022.

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APPENDIX A

Description, Historic Character, and Basis for National Register of Historic Places Eligibility of the Historic Properties with Adverse Effects from the Project

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The HRVEA (COP, Appendix II-O; Atlantic Shores 2023) provided a description, photograph, historic character, and basis for the NRHP eligibility of each of the 25 historic properties (not including the Atlantic City Convention Hall and Lucy, The Margate Elephant NHLs, which are described in Section 3, *Cumulative Effects Considerations Specific to National Historic Landmarks and the National Historic Preservation Act Section 106 Process*) that could be adversely affected by the Project. The properties are summarized below.

Atlantic City Boardwalk Historic District, Atlantic City, New Jersey

Atlantic City Boardwalk Historic District encompasses approximately 1.4 miles (2.3 kilometers) of boardwalk in Atlantic City, stretching from the Atlantic City Convention Hall in the south to the Garden Pier in the north, and contains many of the iconic Atlantic City resorts along the boardwalk. Originally constructed in 1870 the Atlantic City Boardwalk is one of the most famous attractions on the New Jersey shore and boasts the typical attractions seen on boardwalks including amusement park rides, entertainment piers, food and drinks, and the iconic tram cars, in addition to renown hotels and resorts. The Atlantic City Boardwalk Historic District retains sufficient integrity to convey its significance under Criterion A for its association with Entertainment/Recreation and Community Planning and Development in Atlantic City. Despite its fluid construction history, its significance as an enduring vacation destination provides the Atlantic City Historic District Boardwalk with sufficient integrity to convey its eligibility to the NRHP under Criterion A (Entertainment/Recreation).

The Atlantic City Boardwalk Historic District has a clear maritime setting and is located adjacent to the Atlantic Ocean and overlooks the beaches at Atlantic City.

Figure 1 Representative view of the Atlantic City Boardwalk

Brigantine Hotel, Brigantine City, New Jersey

The Brigantine Hotel was previously identified by NJ HPO but was not evaluated for listing in the NRHP. The Art Deco style hotel was built in 1927. It is considered the first desegregated hotel of its type in New Jersey starting with the purchase of the hotel by the International Peace Mission Movement in 1941. The movement consisted of followers of spiritual leader Reverend M.J. Divine (also known as Father Divine) and his economic plan. The hotel was purchased by African American entrepreneur, civil rights leader, and philanthropist Sarah Spencer Washington, and the beach in front of the hotel was one of the area's first integrated beach areas. The building currently functions as a beach resort with a beachfront restaurant and bar. The Brigantine Hotel is significant under NRHP Criterion A for its association with Entertainment/Recreation, African American Heritage, and Community Planning and Development. The resource retains architectural integrity and is also eligible under Criterion C as an example of an Art Deco hotel.

The Brigantine Hotel is a 10-story, high-rise hotel situated on the southeast side of Ocean Avenue between 14th Street South and 15th Street South bordering the beach. The hotel was constructed as a seaside hotel with an associated beach area. The hotel has unobstructed views of Brigantine Beach and the Atlantic Ocean and is an imposing building that can be seen from most areas of Brigantine Beach. The historical association with racially integrated recreation on the New Jersey shore is an integral element of the property's significance.

Figure 2 View of the Brigantine Hotel

Brighton Park, Atlantic City, New Jersey

Brighton Park is located just to the north of the Atlantic City Boardwalk Historic District and just to the south of the contributing Claridge Hotel; it is located on the Atlantic City Boardwalk. The park is visible in aerial photographs dating to 1920, with the current concrete and brick walkways and decorative stone and concrete fountain in the middle of the park adhering the historic park layout and design. The southern portion of the park consists of a stepped concrete amphitheater added between 1984 and 1995, and a Korean War Memorial that was dedicated in 2000. This resource is recommended as a contributing resource to the Atlantic City Boardwalk Historic District.

Figure 3 View of Brighton Park

Central Pier

Central Pier is a two-story, seven-bay building located on the Atlantic City beach adjacent to the boardwalk. The pier is significant for its association with Recreation and Entertainment on the Atlantic City Boardwalk under Criterion A and also for its Architecture under Criterion C. Central Pier has a maritime setting on the Atlantic City beach adjacent to the boardwalk with unobstructed views of the ocean.

Figure 4 Representative view of Central Pier

Colonial Revival Residence at 120 Atlantic Avenue, Atlantic City, New Jersey

The property at 120 Atlantic Avenue is a two-and-a-half story Colonial Revival style residence resting on a raised foundation. The building is clad in brick and capped by a side gable roof covered in asphalt shingles and features a full-width first floor porch with Doric columns supporting a heavy entablature featuring brackets and dentils and a second-story balcony. Three triangular pedimented dormers pierce the roof on the façade, and two-story projecting bays are located on the side elevations. Fenestration consists of 9-over-9, 12-over-12, windows with stone lintels and keystones. The main entrance is surrounded by multi-pane sidelights and transom. The building represents an excellent surviving example of the Colonial Revival style in Atlantic City and is recommended for the NRHP under Criterion C for Architecture.

The property at 120 Atlantic Avenue is located approximately 365 feet (111 meters) west of the Absecon Inlet and approximately 0.3 mile (0.5 kilometer) north of the Atlantic Ocean. The façade and associated porches are oriented towards Atlantic Avenue, roughly 90 degrees from the Project, but demolition of intervening buildings once located to the east of the house substantially increased the ocean views.

Figure 5 View of the property at 120 Atlantic Avenue

Folk Victorian Residence at 5231–5229 Central Avenue, Ocean City, New Jersey

The property at 5231–5229 Central Avenue stands as a rare example of a Folk Victorian dwelling in Ocean City. The resource retains sufficient integrity to convey its significance under NRHP Criterion C. The house is located on the southeast side of Ocean Avenue within a dense residential block. The simple porches, strong bilateral symmetry, and massing of the house are characteristic of duplex beachfront historic homes of this era. The southeast (rear) elevation of the house has clear unobstructed views of Ocean City Beach and the Atlantic Ocean, and the parcel has private beach access.

Figure 6 View of the property at 5231–5229 Central Avenue

Gillian's Wonderland Pier, Ocean City, New Jersey

Gillian's Wonderland Pier was previously identified by NJ HPO but was not evaluated for listing in the NRHP. The entertainment pier was opened in 1930 by David Gillian and is currently operated by 3rd generation owner Jay Gillian. The pier retains sufficient integrity for eligibility in the NRHP under Criterion A for its association with Commerce and Community Planning and Development in Ocean City. Gillian's Wonderland Pier is located on the southwest side of 6th Street, and the resource fronts the Ocean City Boardwalk. The pier was built to serve patrons of the beach and boardwalk, and its proximity to the beach and ocean is one of its character-defining features.

Figure 7 View of Gillian's Wonderland Pier

John Stafford Historic District, Ventnor City, New Jersey

The John Stafford Historic District is significant under Criterion A as a planned community associated with important figures of the area (including prominent turn-of-the-20th-century real estate developer John Stafford and Philadelphia-based architect Frank Seeburger) and Criterion C for its early 20th century Colonial Revival architecture. The development included early examples of zoning-type restrictions to ensure consistency and coherence of the neighborhood. Several contributing resources were commissioned works of prominent architects built for local hoteliers. The district was developed as a seaside resort that, unlike other places on the shore, was easily accessible by automobile. The periods of significance span 1900 to 1924 and 1925 to 1949.

The John Stafford Historic District was designed as a resort planned community located on the shoreline of the Atlantic Ocean. The district shares some parallels with other oceanside residential neighborhoods that developed in response to the late 19th century expansion of passenger rail service along the New Jersey shore but reflects a greater emphasis on roadways designed to accommodate automobiles. The district's relationship to the shoreline and ocean is integral to its planned design.

Figure 8 Representative view of the John Stafford Historic District

Little Egg Harbor U.S. Life Saving Station #23, Little Egg Harbor Township, New Jersey

The Little Egg Harbor U.S. Life Saving Station #23 was previously determined to be eligible for listing in the NRHP by NJ HPO. The resource retains sufficient integrity to convey its significance under Criterion A for its association with Maritime History. The facility currently houses the Rutgers University Mullica River Field Station.

The Little Egg Harbor U.S. Life Saving Station #23 is located at the end of a private wooden boardwalk approximately 0.25 mile (0.40 kilometer) to the southwest of the terminus of Great Bay Boulevard within the Great Bay Boulevard Wildlife Management Area. The resource overlooks Great Bay and is located to the northwest of the Little Egg Inlet between Long Beach and North Brigantine. It was initially constructed as a lifesaving station in 1937 and its location in proximity to the ocean was imperative in order for rescuers to reach nearby shipwrecks on the Atlantic Ocean.

Figure 9 View of the Little Egg Harbor U.S. Life Saving Station

Margate Fishing Pier, Margate City, New Jersey

The Margate Fishing Pier was built in 1923 by the Anglers Club of Absecon Island, a members-only nonprofit club. Although the pier has undergone various repairs over the course of the 20th century and after Hurricane Sandy in 2013, the pier retains sufficient integrity to convey its significance under NRHP Criterion A for its association with the Maritime History of Margate and Absecon Island.

The Margate Fishing Pier extends approximately 733 feet (223 meters) into the Atlantic Ocean from Margate Beach. The pier was constructed exclusively for the purpose of fishing by the Anglers Club of Absecon Island and, as a result, has full and unobstructed views of the ocean. Repair and replacement of historic materials is an inherent characteristic of wood piers, and the Ventnor City Pier retains its integrity of design, location, association, and feeling despite the loss of historic fabric.

Figure 10 View of the Margate Fishing Pier

Missouri Avenue Beach (Chicken Bone Beach)

From the end of the 1920s to the 1960s, Missouri Avenue Beach was effectively Atlantic City's official Black beach. African American members of the Atlantic City Beach Patrol were assigned exclusively to what locals came to call Chicken Bone Beach. Missouri Avenue Beach (Chicken Bone Beach) is significant under NRHP Criterion A for its association with the African American history of Atlantic City. The significance of the Missouri Avenue Beach (Chicken Bone Beach) is directly related to its maritime setting as a beach for the African American community from the end of the 1920s to the 1960s.

Figure 11 Representative view of the Missouri Avenue Beach

Music Pier, Ocean City, New Jersey

The Music Pier at Ocean City was opened in the summer of 1929. It was constructed after a fire destroyed a large portion of the boardwalk, including businesses and nearby homes. The Spanish Colonial style pier included a large concert hall and was used for conventions, bazaars, dances, and free summer concerts. At the onset of American involvement in World War II, a lookout tower was constructed on top of the pier to watch for submarines and U-boats on the Atlantic Ocean. Volunteers, ranging in age from teenagers to retirees, kept watch in the tower during the duration the war, and eventually the tower was used to also spot aircraft. Volunteers were recruited and trained by the local American Legion. The tower was dismantled in 1968. The Music Pier retains sufficient integrity to convey its significance under NRHP Criterion A for its association with Entertainment/Recreation and Maritime History in Ocean City.

The Music Pier is located on the southeast side of the Ocean City Boardwalk at Moorlyn Terrace. The pier extends approximately 218 feet (66 meters) over the beach and provides expansive views of the ocean from inside and outside of the building. The location on the beach and off of the boardwalk is one of the character-defining features of the pier.

Figure 12 Representative view of the Music Pier

Ocean City Boardwalk, Ocean City, New Jersey

The Ocean City Boardwalk was originally constructed in 1905, replacing a wooden walkway that was constructed in 1880. Hotels and recreational and entertainment venues were constructed in the early 20th century. In 1927, the boardwalk and many surrounding buildings were destroyed by fire. When the boardwalk was reconstructed in 1928, it was moved closer to the Atlantic Ocean. Although portions of the boardwalk have been replaced, the Ocean City Boardwalk retains sufficient integrity to convey its significance under Criterion A for its association with Entertainment/Recreation and Community Planning and Development in Ocean City. The Ocean City Boardwalk has a clear maritime setting and is located adjacent to the Atlantic Ocean and overlooks the beaches at Ocean City.

Figure 13 Representative view of the Ocean City Boardwalk

Residence at 114 South Harvard Avenue, Ventnor City, New Jersey

The residence at 114 South Harvard Avenue is a two-and-a-half-story French Eclectic building with a side porch and attached garage, and a short stair turret tucked into the ell. The house is stuccoed with colored asphalt shingles on the roof. The entry porch is arched and has a small balustrade on the roof. This resource has sufficient integrity to convey its eligibility for the NRHP under Criterion C. 114 South Harvard Avenue is a beachfront home. Its primary orientation is to the street, but the 2nd floor side porch and windows have unobstructed views of the Atlantic Ocean.

Figure 14 View of the property at 114 South Harvard Avenue

Residence at 125 South Montgomery Avenue, Atlantic City, New Jersey

The resource at 125 South Montgomery Avenue is a ca. 1910 two-story Spanish Colonial dwelling covered in stucco and capped by a hipped roof covered in clay tile. The form of the building includes two projecting wings on the southwest (front) elevation connected by a one-story central arcaded entry porch with three round arches supported by Corinthian columns. The windows are decorated with round arch surrounds on the second floor and decorative entablatures on the first floor. A carriage house/garage is attached to the northwest (side) elevation. The house retains sufficient integrity to convey its significance under NRHP Criterion C.

The resource at 125 South Montgomery Avenue is located immediately to the northwest of the Atlantic City Boardwalk and beaches. Although the house is oriented toward South Montgomery Avenue and not the ocean, it has a clear maritime setting as the views from the southeast (side) elevation offer unobstructed views to the ocean.

Figure 15 View of the property at 125 South Montgomery Avenue

Ritz Carlton Hotel, Atlantic City, New Jersey

The Ritz Carlton Hotel is an 18-story building clad in brick that opened in June 1921. Constructed with elements of the Beaux Arts style, the building was a prominent hotel in Atlantic City in the 1920s, and housed prominent guests such as Calvin Coolidge, Warren G. Harding, and Al Capone. The hotel was converted to army barracks during World War II, and in 1969 was converted into apartments. In 1982 the building was converted into condominiums. Today the building survives as a rare representation of 1920s hotel architecture on the Atlantic City Boardwalk. It has been determined eligible for NRHP listing under Criteria A and C.

The Ritz Carlton Hotel is located on the Atlantic City Boardwalk with the building's primary orientation toward the ocean and the building is designed to provide views toward the sea. The building's location on the coast lends to its historic significance as a beachside resort hotel. Demolition and redevelopment of surrounding parcels has diminished the integrity of setting for the property, though the critical relationship of the historic hotel to the boardwalk and adjacent shoreline has been retained.

Figure 16 View of the Ritz Carlton Hotel

Riviera Apartments

The Riviera Apartments building was designed by architect Henry Sternfeld and was constructed between 1929 and 1930. The building has been determined eligible for the NRHP by the NJ HPO under Criterion C for its Spanish and Art Deco style architecture. The Riviera Apartments building is located on the Atlantic City Boardwalk with clear ocean views from the main façade and partial views from the northern and southern elevations.

Figure 17 View of the Riviera Apartments

Saint Leonard's Tract Historic District, Ventnor City, New Jersey

The Saint Leonard's Tract Historic District is a grouping of approximately 250 residences constructed between 1906 and 1930. The buildings are eligible for the NRHP under Criteria A and C as a designed community with strict building requirements for its architecture. The St. Leonard's Land Company purchased the land in 1896 and designed the district in a grid pattern.

The Saint Leonard's Tract Historic District is located between the Atlantic Ocean and the Intercoastal Waterway, with many residences having views of one or both bodies of water. The setting of the district on a coastal barrier and the presence of water views along the perimeter of the neighborhood are integral to its character and feeling.

Figure 18 Representative view of the Saint Leonard's Tract Historic District

Seaview Golf Club, Clarence Geist Pavilion, Galloway Township, New Jersey

The Seaview Golf Club consists of a 296-room hotel and Colonial Revival style clubhouse set on 697 acres (282 hectares) in Galloway Township. The property features two 18-hole golf courses. The Bay Course was opened in 1914 and was designed by Hugh Wilson and Donald Ross. This course is situated along the bay and provides bayside views and distant views of Brigantine on the barrier island. The Pines Course was opened in 1929 and was designed by William Flynn and Howard Toomey. This course is located to the west of the clubhouse and hotels and winds through New Jersey pinelands. The golf club is currently the site of the ShopRite LPGA Classic and hosted nine holes in the 1942 PGA Championship. This resource is recommended eligible for the NRHP under Criteria A and C, under Recreation and Architecture.

The Seaview Golf Club is located approximately 6 miles (9.7 kilometers) northwest of the Atlantic Ocean and borders Reeds Bay with views of the bay from the Bay Course. Ocean views are an important component of the setting reflected in the course design and layout.

Figure 19 View of the Seaview Golf Club clubhouse and hotel

Two-and-a-Half-Story Residence at 124 Atlantic Avenue, Atlantic City, New Jersey

This resource is a two-and-a-half-story Dutch Colonial residence set on a raised foundation, is clad in brick on the first floor and wood shingle on the upper floors, and is capped by a cross-gable roof, with a gambrel gable on the front façade, covered in asphalt shingles. The residence features a full-width, curved front porch, with a flat roof supported by wood columns resting on brick supports. Arched windows and arcade are located in the raised basement and first floor, and a large Palladian window is located on the second-floor façade. This resource is recommended eligible for the NRHP under Criterion C for Architecture, as an excellent and exceedingly rare example of the Dutch Colonial Revival style architecture in northern Atlantic City.

This resource is located approximately 430 feet (131 meters) west of the Absecon Inlet and approximately 0.3 mile (0.5 meter) north of the Atlantic Ocean. The façade and associated porches are oriented towards Atlantic Avenue, roughly 90 degrees from the Project, but demolition of intervening buildings once located to the east of the house substantially increased the ocean views.

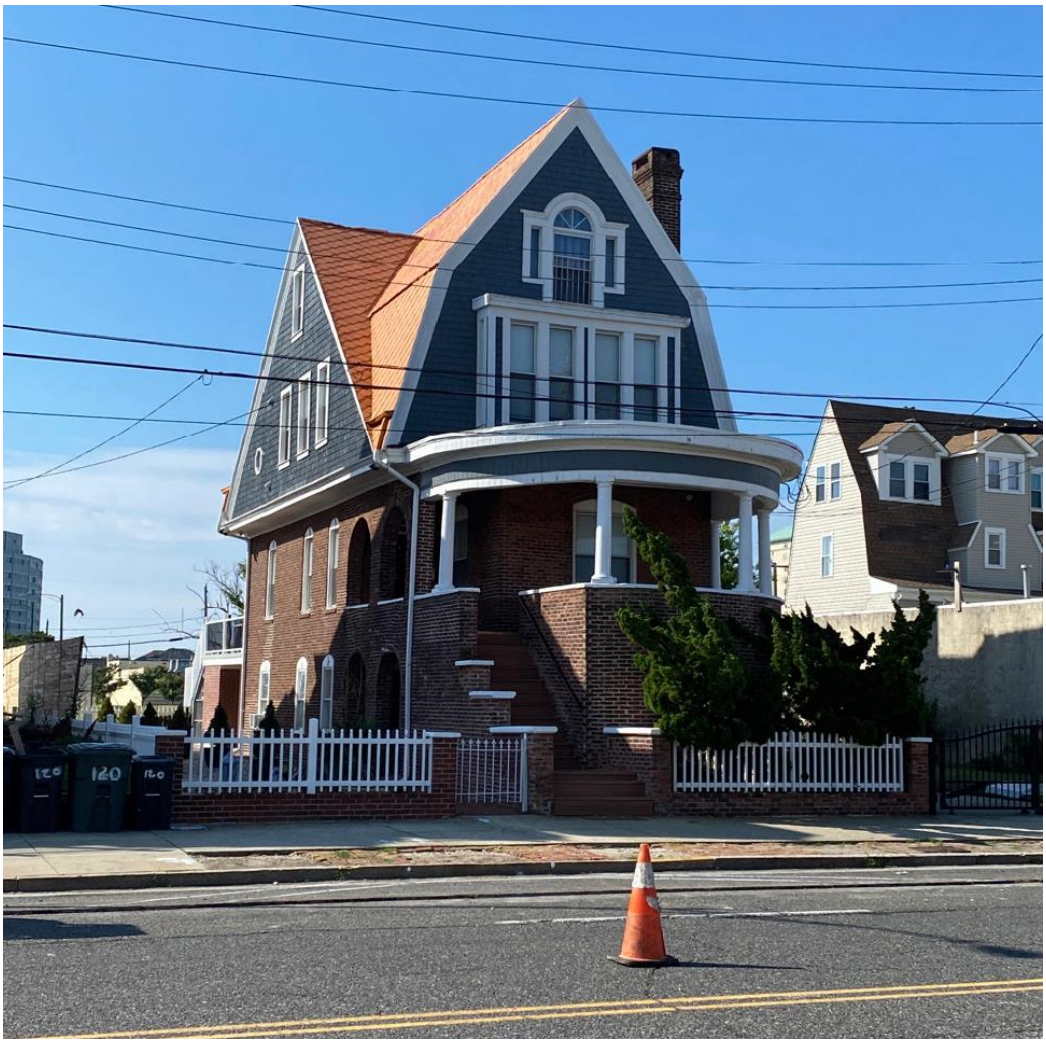

Figure 20 View of the property at 124 Atlantic Avenue

Two-Story Residence at 108 South Gladstone Avenue, Margate City, New Jersey

The residence at 108 South Gladstone Avenue is a two-story French Eclectic built ca. 1930 of stone. It has a hipped roof with flaring eaves, a stone chimney, a centered tower entry, and a one-story side porch with arched openings. A Juliet balcony in the tower and dormer balconies over the side porch have wrought iron rails. The property has sufficient integrity to convey its eligibility to the NRHP under Criterion C.

108 South Gladstone Avenue is a beachfront property. Though its principal façade is oriented to face the street, the side porch and upper windows face the water. It has unobstructed views of the Atlantic Ocean.

Figure 21 View of the property at 108 South Gladstone Avenue

Two-Story Residence at 114 South Osborne Avenue, Margate City, New Jersey

114 South Osborne Avenue is a Colonial Revival residence with brick walls laid in Flemish bond. It has chimneys on the side gables, keystones over the windows, a fan light and sidelights at the entry, and modillions under the front eave and in the porch entablature. Though some alterations in the windows have been made, the house retains sufficient integrity to convey its eligibility to the NRHP under Criterion C.

114 South Osborne Avenue is a beachfront property. Though the façade is oriented to face the street, the windows on the south elevation appear to have clear unobstructed views of the ocean. From the street level, the sand dune topography limits views of the water.

Figure 22 View of the property at 114 South Osborne Avenue

U.S. Coast Guard Station Atlantic City, Atlantic City, New Jersey

The U.S. Coast Guard Station at Atlantic City was constructed in 1939 and was at that time the largest life boat station in the guard. It replaced a series of earlier stations that had served the area. Though renovated in 1988, it appears to retain sufficient integrity to convey its eligibility to the NRHP under Criterion A (Military).

The U.S. Coast Guard Station at Atlantic City is located to the junction of Clam Creek and Absecon Inlet, where the moorings are protected, but only 1 mile (1.6 kilometer) from the open ocean. The setting and function of the property are maritime in character, and the property has partial views of the ocean.

Figure 23 View of the U.S. Coast Guard Station at Atlantic City

Vassar Square Condominiums, Ventnor City, New Jersey

The Vassar Square Condominiums are located on the Ventnor Boardwalk, and the building was designed for views toward the ocean. The Vassar Square Condominiums are sited in a high-rise brick-and-glass–clad 20-story building located directly on the Ventnor Boardwalk. Construction on the building began in 1968 and originally contained apartments. Following the real estate boom in the region in the 1970s, the building was converted into condominiums, the first high-rise building to make that conversion on the Ventnor Boardwalk. The building is recommended eligible for the NRHP under Criterion C for Architecture. The building exhibits elements of Modern architecture including the cantilevered curved balconies with glass railings, and curved columns.

Figure 24 View of the Vassar Square Condominiums

Ventnor City Fishing Pier, Ventnor City, New Jersey

The Ventnor City Pier was constructed in 1963 and was the fourth pier built at this site. It is the longest fishing pier in New Jersey. Although the pier underwent extensive renovations in 2017, it retains sufficient integrity to convey its significance under Criterion A for its association with the Maritime History of Ventnor City.

The Ventnor City Fishing Pier extends approximately 990 feet (302 meters) from the boardwalk into the Atlantic Ocean. As the pier was constructed primarily for fishing, there are full and unobstructed views to the Atlantic Ocean from the pier. Repair and replacement of historic materials is an inherent characteristic of wood piers, and the Ventnor City Pier retains its integrity of design, location, association, and feeling despite the loss of historic fabric.

Figure 25 View of the Ventnor City Pier

APPENDIX B

Memorandum: Atlantic Shores Offshore Wind South Cumulative Photosimulations

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EDR

Memorandum

To:	Kody McCann
From:	Gordon Perkins
Date:	Original Date: March 31, 2023 *Revised Date: April 25, 2023*
Reference:	Atlantic Shores Offshore Wind Cumulative Photosimulations – Projects 1 & 2
EDR Project No:	20043

Introduction

On March 11, 2022, BOEM submitted a request for cumulative effect simulations to Atlantic Shores Offshore Wind, LLC so that BOEM can assess the incremental cumulative effects associated with wind projects located on the Outer Continental Shelf (OCS). In the request document titled, "*Atlantic Shores CE Simulation Instructions_03.11.2022.docx*" (henceforth referred to as "The BOEM Request") detailed instructions were provided to aid in the development of the photosimulations of reasonably foreseeable future projects. This memorandum provides the methods and assumptions Environmental Design and Research (EDR) used for the production of cumulative photosimulations associated with the Atlantic Shores Offshore Wind Project (Atlantic Shores) from eight representative key observation points (KOPs).

The specific KOPs that were used for the development of the photosimulations are listed in Table 1 and illustrated in Image 1. In some cases, it was not possible to use the photography captured for the Atlantic Shores Offshore Wind Visual Impact Assessment Wind Turbine Area (VIA [EDR, 2022]) for the cumulative photosimulations. As such the position and base photography are different, but still communicate the information necessary for the illustration of potential cumulative impacts. KOPs that include different baseline photography from the VIA are noted in Table 1, below.

Table 1 Key Observation Points selected for Cumulative Photosimulation Production

KOP ID	Location	Condition(s) Represented		Supplemental Field Photography
		Day	Night	
AC04	Ocean Casino Resort – Sky Garden 39.36224553° N, 74.41352747° W	■	■	New Photography (different than COP VIA photoset).
BC02	North Brigantine Natural Area 39.42954214° N, 74.33968463° W	■		VIA Photography
BHB03	Beach Haven Historic District[1] 39.55258484° N, 74.24419454° W	■		New Photography & Change from BHB01 to BHB03 due to an obstruction present at time of photography.
LEHT02	Great Bay Boulevard Wildlife Management Area/Rutgers Field Station 39.50913007° N, 74.32038021° W	■		VIA Photography
LT02	Cape May Point State Park 38.93298400° N, 74.96030745° W	■		VIA and New Photography
OC04	Gillian's Wonderland Pier 39.27506000° N, 74.56877896° W	■		New Photography (different than COP VIA photoset).
SIC02	Townsend's Inlet Bridge 39.11918662° N, 74.71575520° W	■		New Photography (different than COP VIA photoset).
SPB01	Seaside Park 39.93530041° N, 74.07163348° W	■		New Photography (different than COP VIA photoset).

[1] EDR completed supplemental photography in March 2022 from additional locations within Beach Haven Borough. A view from 0.7 miles south of the VIA KOP (39.55258484° N, 74.24419454° W) was used for the cumulative effects photosimulation.

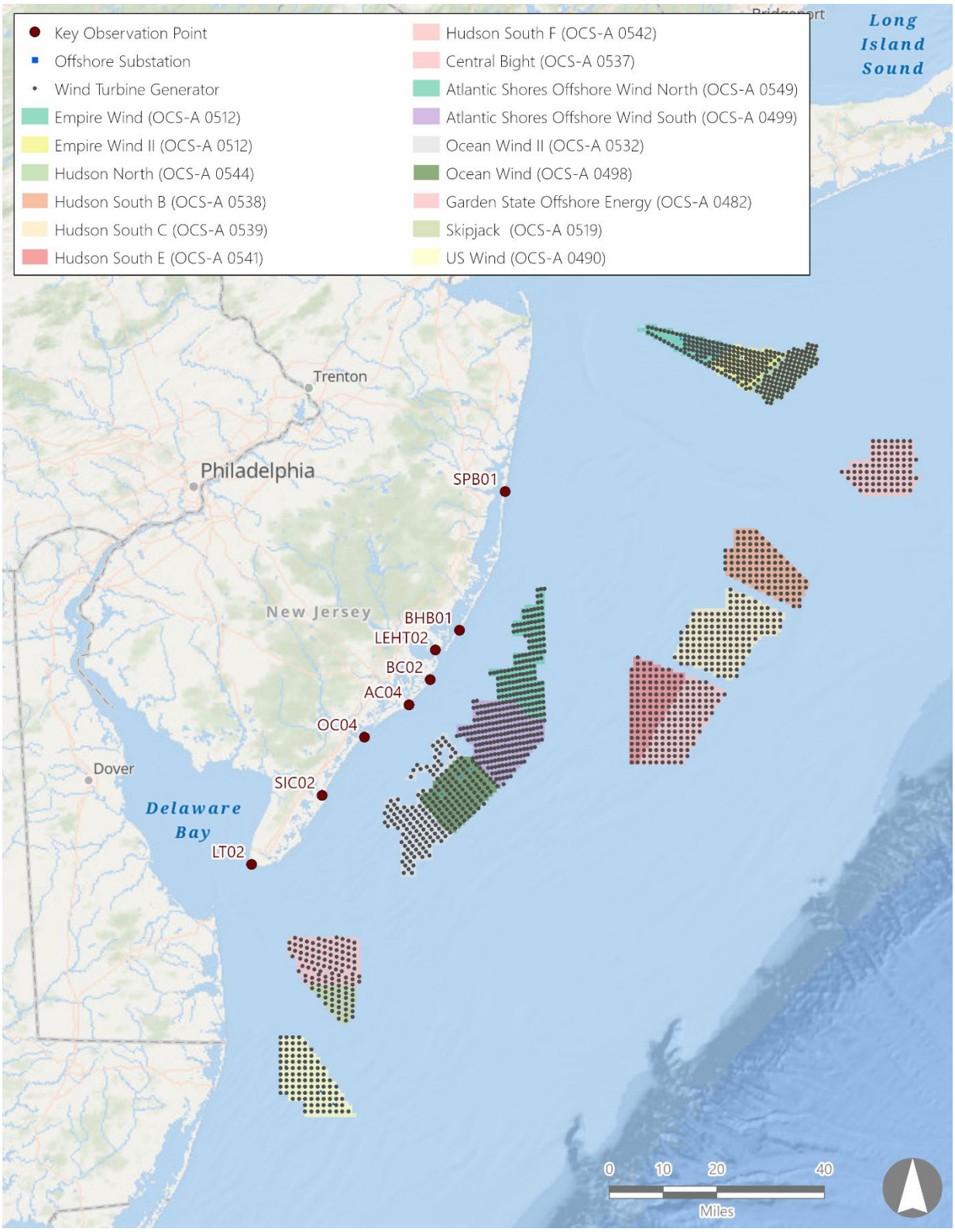

Image 1 Key Observation Points and Project Layouts

Reasonably Foreseeable Projects

The photosimulations were developed to illustrate the following five cumulative effect scenarios (See Table 2 and Appendix A):

- **Scenario 1:** 2023 – 2025 Project construction
- **Scenario 2:** Atlantic Shores construction (2025 – 2027) added to Scenario 1
- **Scenario 3:** 2024 – 2030 Project construction added after the construction of Atlantic Shores
- **Scenario 4:** Full Buildout Scenario of all Lease Areas without Atlantic Shores
- **Scenario 5:** Atlantic Shores without the construction of other foreseeable planned activities

The projects included in each scenario are identified in Table 2.

Table 2 Projects Illustrated in the Cumulative Effects Scenarios

Official Project Name	Lease Area	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
Ocean Wind	OCS-A 0498	■	■	■	■	
Empire Wind	OCS-A 0512	■	■	■	■	
Empire Wind II	OCS-A 0512	■	■	■	■	
Atlantic Shores Offshore Wind South	OCS-A 0499		■	■		■
Skipjack	OCS-A 0519			■	■	
Garden State	OCS-A 0482			■	■	
US Wind	OCS-A 0490			■	■	
Atlantic Shores Offshore Wind North	OCS-A 0549			■	■	
Ocean Wind II	OCS-A 0532			■	■	
Hudson North	OCS-A 0544			■	■	
Central Bight	OCS-A 0537			■	■	
Hudson South B	OCS-A 0538			■	■	
Hudson South C	OCS-A 0539			■	■	
Hudson South E	OCS-A 0541			■	■	
Hudson South F	OCS-A 0542			■	■	

Photosimulations

To illustrate each of the cumulative effects scenarios identified above, photosimulations of the wind turbine generators (WTGs), meteorological tower (MET), and Offshore Substations (OSS) from the eight representative KOPs. The photosimulations were developed by constructing three-dimensional (3D) computer models of the proposed MET, OSS, and WTGs based on coordinates and/or WTG spacing assumptions provided by Atlantic Shores Offshore Wind, LLC and BOEM.

WTG and Offshore Substation (OSS) dimensions are shown in Table 4 and Appendix A, attached. EDR used assumptions for WTG height and positions, provided by BOEM. In some cases, the position and dimensions of the OSS units were determined based on the project's construction and operations plans, provided on the BOEM website. All WTGs use the following color scheme:

Table 3 Turbine and OSS Color Scheme

Component Color	Swatch[1]	Precedent
WTG Tower, Nacelle, and Blades & OSS Topside– RAL 9010		BOEM and the FAA require the wind turbines to be a color no lighter than RAL 9010 Pure White and no darker than RAL 7035 Light Grey (BOEM, 2021).
WTG and OSS Foundation and OSS periphery structures- RAL 1023		The foundation base of all turbines should be painted yellow, RAL 1023, all around from the level of Mean Higher High Water (MHHW) to 50 ft above MHHW. (BOEM, 2021)

[1] Colors presented in the swatch are representative only. Viewing medium may result in slight color shifts.

Table 4 Turbine and Offshore Substation Dimensions[2]

Project	Height at WTG Blade Tip	OSS Topside & MET Dimensions (LxWxH)	OSS Max. Height	WTG Count	OSS Count
Ocean Wind	906 ft (276m)	295 ft x 295 ft x 198 ft (90m x 90m x 60m)	296 ft (90m)	108	3
Empire Wind	951 ft (290m)	203 ft x 194 ft x 92 ft (62m x 59m x 28m)	200 ft (70m)	71	1
Empire Wind II	951 ft (290m)	203 ft x 194 ft x 92 ft (62m x 59m x 28m)	200 ft (70m)	103	1
Atlantic Shores Offshore Wind South	1,047 ft (319m)	Large OSS (1): 295 ft x 164 ft x 131 ft (90m x 50m x 40m) Mid-Size OSS (4): 213 ft x 148 ft x 115 ft (65m x 45m x 35m) MET Tower 590.6 ft (180 m)	Large OSS: 205 ft (62.6m) Mid-Size OSS: 189 ft (57.6m)	200	5
Skipjack	853 ft (260m)	N/A	N/A	33	N/A
Garden State	853 ft (260m)	N/A	N/A	80	N/A
US Wind	938 ft (286m)	98 ft x 141 ft x 164 ft (30m x 43m x 50m)	197 ft (60m)	99	4

[2] All heights are measured above mean sea level (MSL).

Project	Height at WTG Blade Tip	OSS Topside & MET Dimensions (LxWxH)	OSS Max. Height	WTG Count	OSS Count
Atlantic Shores Offshore Wind North	1,047 ft (319m)	131 ft x 115 ft x 90 ft (40m x 35m x 30m)	173 ft (52.6m)	156	8
Ocean Wind II	906 ft (276m)	N/A	N/A	111	N/A
Hudson North (OCS-A 0544)	853 ft (260m)	N/A	N/A	104	N/A
Central Bight (OCS-A 0537)	853 ft (260m)	N/A	N/A	82	N/A
Hudson South B (OCS-A 0538)	853 ft (260m)	N/A	N/A	101	N/A
Hudson South C (OCS-A 0539)	853 ft (260m)	N/A	N/A	148	N/A
Hudson South E (OCS-A 0541)	853 ft (260m)	N/A	N/A	95	N/A
Hudson South F (OCS-A 0542)	853 ft (260m)	N/A	N/A	99	N/A

Photosimulations were created by aligning the photos from each selected KOP through a virtual 3D camera, using digitized location data for elements visible in the photograph. This step involves utilizing aerial photographs and global positioning system (GPS) data collected in the field to create an AutoCAD® drawing. The 3D AutoCAD data were then imported into 3DS Max®, and additional components (cameras, modeled scene, 3D surfaces, etc.) were added. These data was then superimposed over the photographs as seen through the aligned virtual camera from each of the KOPs, and minor camera adjustments (height, roll, bearing) were made as necessary to align all known reference points within the view. This process ensures that Project elements are shown in proportion, perspective, and proper relation to the existing landscape elements in the view. Consequently, the alignment, elevation, dimensions, and scale of the modeled Project components are accurate and true in their relationship to other landscape elements in each photograph.

The next step involves positioning the WTG, MET tower, and OSS models based on the layout in each of the aligned views at the appropriate distance in front of, at, or below the horizon (depending on the distance from the viewer). This was done by first determining the distance to the horizon (ocean to sky interface) visible in the photograph and entering the viewer position and elevation into the Haversine Formula, which uses the radius of the earth (corrected for refraction[3]) to calculate the mathematical distance to the horizon (D), or the point at which the

[3] Refraction values assume "typical" viewing conditions and do not account for atmospheric anomalies such as the mirage effect which is typically rare and of short duration but may temporarily increase turbine visibility. The refraction coefficient is 0.13. However, variable moisture in the atmosphere may result a larger or small refraction coefficient. Studies completed on the Block Island Wind Farm suggest that the coefficient of 0.13 represents typical, clear conditions.

sky meets the water (see Image 2, below). This distance was used to draw a horizontal line (virtual horizon) in the 3D model representing the mathematical horizon line, which is visible through the virtual camera. The virtual horizon was then precisely aligned to the visible horizon (D) in the photograph by making minor adjustments to the virtual camera target on the vertical axis. With the virtual horizon aligned to the photographed horizon, the positions of the individual WTGs were placed relative to this horizon line. At this point, the Haversine Formula was used to determine each turbine's position, relative to the horizon (X). For example, if the WTG appears in front of the horizon, the returned value is zero and the WTG were placed at the horizon. If the WTG appears behind the visible horizon, the returned value was a negative number (-X). This value is then applied to the turbine's vertical position in the model so that it appears on or below the visible horizon.

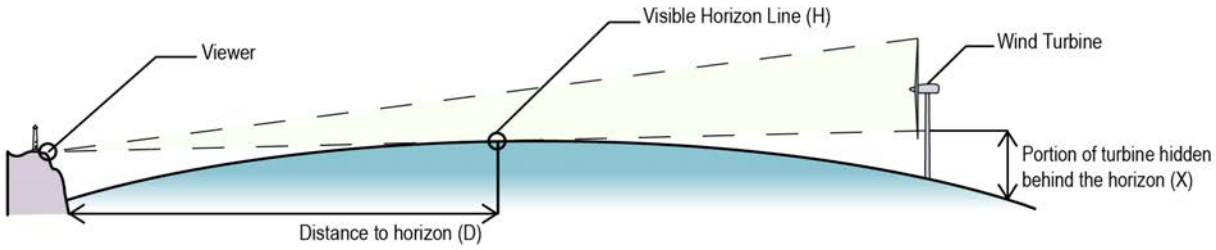

Image 2 **Curvature of the Earth and Refraction Diagram**

At this point, a "wire frame" model of the Project and known reference points were shown on each of the photographs. The proposed exterior color/finish of the WTGs are then added to the model, and the appropriate sun angle was simulated based on the specific date, time, and location (latitude and longitude) at which each photo(s) was taken. This information allows the modelling software to accurately illustrate highlights, shading, and shadows for each individual WTG shown in the view. All photosimulations show the WTGs with rotors oriented toward the KOP (perpendicular to the KOP viewing angle) considering the most central turbines in the view. However, since the panoramas cover a large geographic area, turbines to the left and right of center maybe viewed at angle other than perpendicular to the WTG rotors. The resulting simulations show a field of view of 38.7 degrees, which is equivalent to the field of view of a standard 50 mm camera lens. The individual 50 mm photosimulations were then stitched using panorama stitching and projection software which minimizes potential distortion generally associated with wide field of view images. The resulting panorama photosimulation illustrates a horizontal field of view equal to 124 degrees and a vertical field of view equal to 55 degrees.

Viewing Instructions

It is recommended that the panorama photosimulations be printed at 100% and viewed from a distance of 18 inches. However, a scale bar is provided for convenient on-screen viewing. Viewers should zoom into the image until the scale bar measures 1 inch. At this time, the viewer can carefully pan around in the photosimulation (being careful not to adjust the zoom level) and the scale of the simulated elements should be illustrated at the correct scale.

Presentation Format

Each photosimulation includes a coversheet (Image 3) with the following information:

1. Viewing instructions for the panorama photosimulation are provided on the individual panorama layout.

2. KOP data including both general information and information specific to that KOP.
3. The tables included in the simulation indicate the number of WTGs and OSSs visible from the KOP. It is important to note that the counts consider the KOP and not the individual frame of view represented in the simulation since most KOPs require two panoramas to cover the full range of reasonably foreseeable projects. Additionally, the counts provided in the tables are based on a manually verified computer generated count of all WTGs and OSSs that appear above the visible horizon. Of note, this could include a miniscule portion of the WTG blade and therefore, manual counts are not a reliable method of determining cumulative visibility. Counts in this table also assume all WTG blades are in the full upright position. As noted in the visual simulations, performing a count of visible WTGs and OSSs within the completed simulation will not yield accurate results due to random blade rotation, screening by waves, birds, and atmosphere, and in many cases, the viewer inability to resolve blade tips up to 50 or 60 miles distant.
4. A context map is provided with the following information:
    a. Viewer orientation is illustrated with cardinal direction and degrees indicated for the left extent, right extent, and center of the view along with the cone of view for the entire panorama. Note that this cone of view is not intended to indicate the extent of visibility as measured perpendicular to the viewer, simply defines the horizontal extent of the panorama.
    b. WTGs and OSSs were symbolized by component visibility. This symbology is based on viewer height, curvature of the earth, and turbine size only. It does not consider the screening effects of topography, vegetation or structures. Therefore, in some cases, this map will not match the table, nor unreliable manual counts of the WTGs.
    c. Distance rings from each KOP illustrate 5 mile increments out to 50 miles (the approximate distance of total diminishment of theoretical visibility).
    d. Individual projects will be illustrated by shading of the lease area shading in the lease area.
5. A KOP Location Map is provided with aerial imagery, cone of view, and cardinal direction.

Image 3 Cumulative Photosimulation Layout and Information

File Naming Convention

EDR has submitted high resolution JPEG and PDF images of the completed cumulative photosimulations. Table 4 indicates the number of JPEG files associated with each KOP, and Image 4 illustrates the naming convention to be used for each JPEG file. It should be noted that the resolution of the image's balances usability, hardware/software limitations, and the need for image clarity and sharpness. As such, limitations may exist when viewing the most distant WTGs

in the views. However, it is anticipated that the resolution represents an accurate and adequate representation of what the viewer would actually see.

Table 5 Number of JPEGs per KOP/Condition

KOP ID	Location	Number of 124° Panoramas / Total Field of View	Number of Scenarios (not including existing conditions)	Number of Panoramas
AC04	Ocean Casino Resort – Sky Garden	2	6	12
AC04 Night	Ocean Casino Resort – Sky Garden	2	6	12
BC02	North Brigantine Natural Area	2	6	12
BHB01	Beach Haven Historic District	2	6	12
LEHT02	Great Bay Boulevard Wildlife Management Area/Rutgers Field Station	1	6	6
LT02	Cape May Point State Park	2	6	12
OC04	Gillian's Wonderland Pier	2	6	12
SIC02	Townsend's Inlet Bridge	2	6	12
SPB01	Seaside Park	2	6	12
			Total:	**102**

Image 4 File Naming Convention

APPENDIX C

Atlantic Shores Offshore Wind South Cumulative Photosimulations

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AC04: Ocean Casino Resort - Sky Garden, Atlantic City, Atlantic County, New Jersey

Environmental Data

Date Taken: 08/25/2022
Time: 10:43 AM
Temperature: 88°F
Humidity: 34%
Visibility*: 10+ miles
Wind Direction: Northwest
Wind Speed: 13 mph
Conditions Observed: Fair

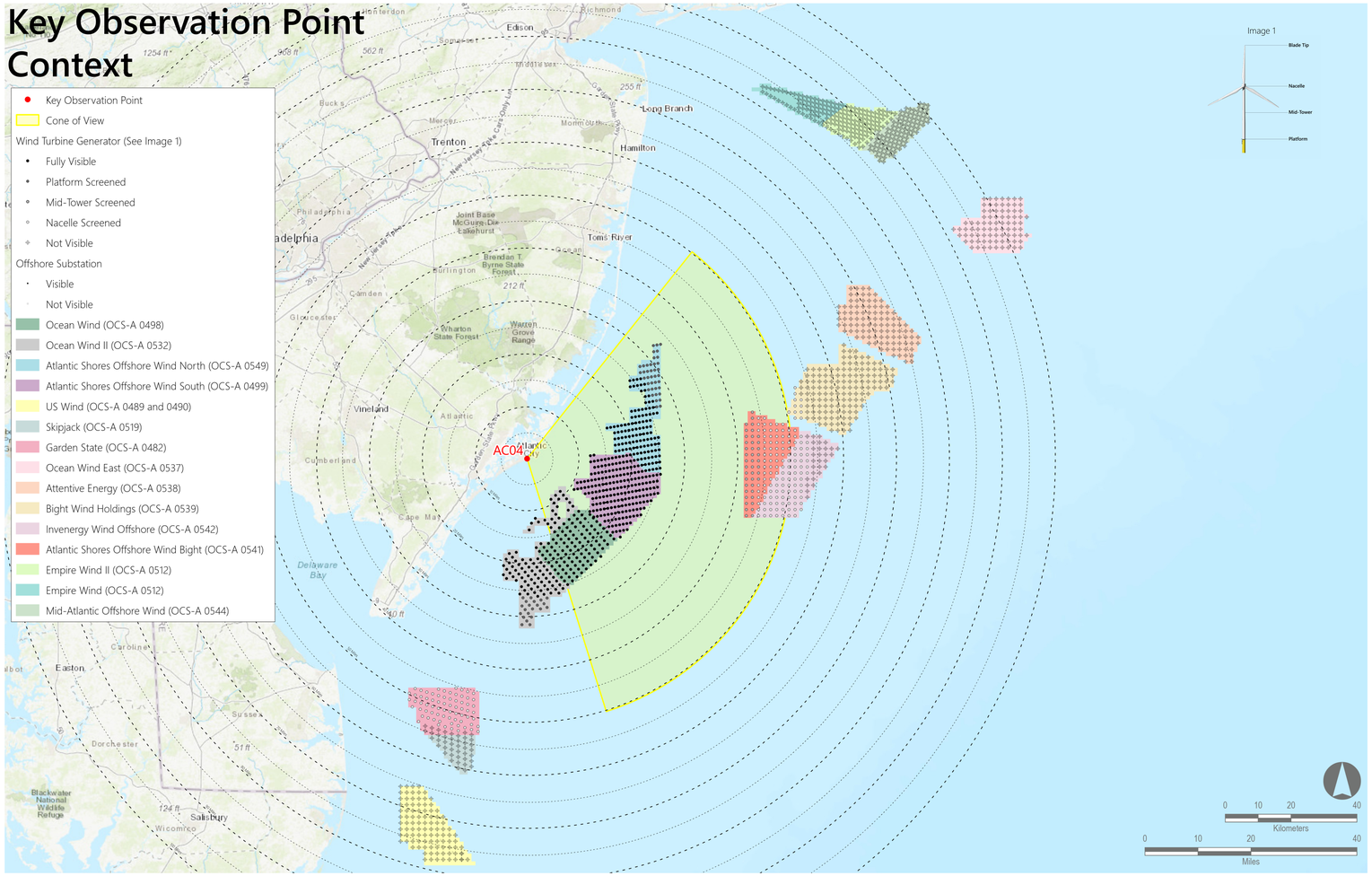
Camera Information
Camera: Canon EOS 5D Mark IV
Resolution: 30.4 Megapixels
Lens Focal Length: 50 mm
Camera Height: 117.26 feet AMSL

Key Observation Point Information

County: Atlantic
Town: Atlantic City
State: New Jersey
Location: Ocean Casino Resort - Sky Deck
Latitude, Longitude: 39.36225°N, 74.41353°W
Direction of View (Center): East (100.9°)
Field of View: 124° x 55°

Visual Resources
Character Area: Atlantic City, Seascape (SCA)
User Group: Local Resident/Tourist
Visually Sensitive Resource: Atlantic City Beach

Key Observation Point Context



Reasonably Foreseeable Projects Represented in Photosimulation

		Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP**	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Scenario 5	Scenario 2	Atlantic Shores Offshore Wind South (OCS-A 0499)	2025-2027	1,047	205	205	10.5	25.6
Scenario 4	Scenario 1	Ocean Wind (OCS-A 0498)	2023-2025	906	111	111	13.9	24.6
		Empire Wind (OCS-A 0512)	2024-2025	951	0	72	Not Visible	Not Visible
		Empire Wind II (OCS-A 0512)	2023-2027	951	0	104	Not Visible	Not Visible
	Scenario 3	Skipjack (OCS-A 0519)	2024-2030	853	0	33	Not Visible	Not Visible
		Garden State (OCS-A 0482)	2023-2030	853	66	80	45.3	53.7
		US Wind (OCS-A 0489 and 0490)	2024	938	0	101	Not Visible	Not Visible
		Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	164	164	16.2	33.2
		Ocean Wind II (OCS-A 0532)	2026-2030	906	111	111	8.8	31.3
		Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
		Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
		Attentive Energy (OCS-A 0538)	by 2030	853	0	101	Not Visible	Not Visible
		Bight Wind Holdings (OCS-A 0539)	by 2030	853	11	148	50.3	53.0
		Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	95	95	41.4	50.9
		Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	70	99	43.9	53.0

Notes:
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- *Historical meteorological data predicts visibility within a limit of 10 statute miles. However, visibility may extend beyond this distance. The photosimulations assume visibility extends to the limit of physical visibility (including a standard refraction index).
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- **The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

ATLANTIC SHORES offshore wind

MATCH LINE AC04 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

AC04: Ocean Casino Resort - Sky Garden, Atlantic City, Atlantic County, New Jersey

Existing Conditions (Panorama 1)

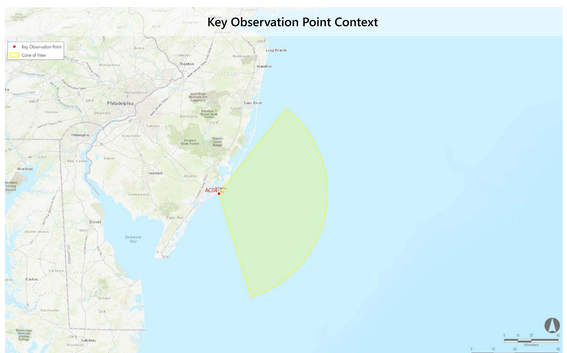
Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This box should be exactly 1" long on the printed panorama

Key Observation Point Context



Key Observation Point Location

MATCH LINE AC04 PANO #2

MATCH LINE AC04 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

AC04: Ocean Casino Resort - Sky Garden, Atlantic City, Atlantic County, New Jersey

Photosimulation (Panorama 1): Scenario 1: 2023-2025 Project Construction (Ocean Wind, Empire Wind, Empire Wind II)

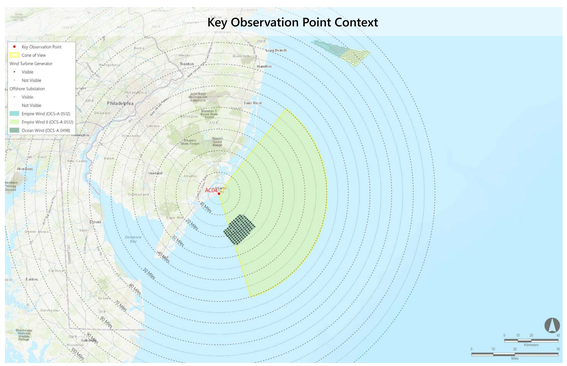
Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 7023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Ocean Wind (OCS-A 0498)	2024-2025	906	111	111	13.9	24.6
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible



MATCH LINE AC04 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

AC04: Ocean Casino Resort - Sky Garden, Atlantic City, Atlantic County, New Jersey

Photosimulation (Panorama 1): Scenario 2: Atlantic Shores Construction (2025-2027) added to Scenario 1 (Ocean Wind, Empire Wind, Empire Wind II, Atlantic Shores South)

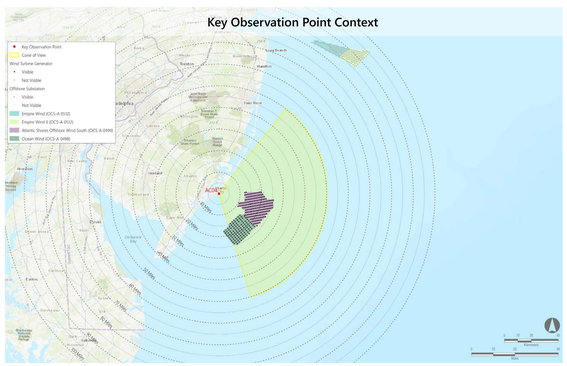
Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	205	205	10.5	25.6
Ocean Wind (OCS-A 0498)	2024-2025	906	111	111	13.9	24.6
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible



MATCH LINE AC04 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

AC04: Ocean Casino Resort - Sky Garden, Atlantic City, Atlantic County, New Jersey

Photosimulation (Panorama 1): Scenario 3: 2024-2030 Project construction added after the construction of Atlantic Shores South (Full Lease Build-out Including Atlantic Shores South)

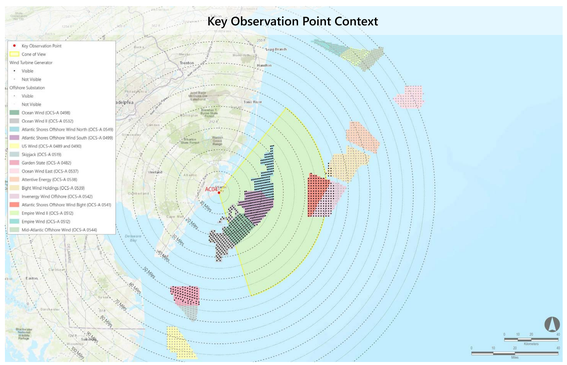
Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This box should be exactly 1' long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 7023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	205	205	10.5	25.6
Ocean Wind (OCS-A 0498)	2024-2025	906	111	111	13.9	24.6
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible
Skipjack (OCS-A 0519)	2024-2030	853	0	33	Not Visible	Not Visible
Garden State (OCS-A 0482)	2023-2030	853	66	80	45.3	53.7
US Wind (OCS-A 0489 and 0490)	2024	938	0	101	Not Visible	Not Visible
Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	164	164	16.2	33.2
Ocean Wind II (OCS-A 0532)	2026-2030	906	111	111	8.8	31.3
Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
Attentive Energy (OCS-A 0538)	by 2030	853	0	101	Not Visible	Not Visible
Bight Wind Holdings (OCS-A 0539)	by 2030	853	11	148	50.3	53.0
Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	95	95	41.4	50.9
Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	70	99	43.9	53.0



MATCH LINE AC04 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

AC04: Ocean Casino Resort - Sky Garden, Atlantic City, Atlantic County, New Jersey

Photosimulation (Panorama 1): Scenario 4: Full buildout of all lease areas without Atlantic Shores South

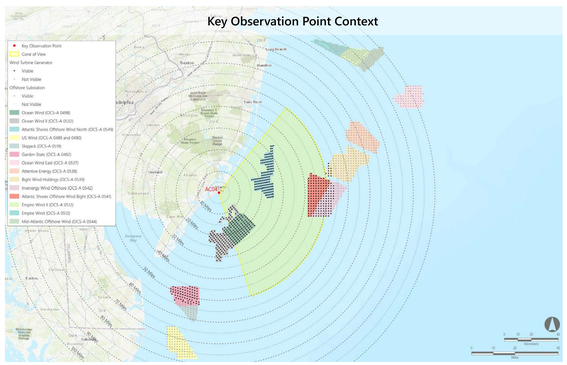
Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This box should be exactly 1' long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 7023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Ocean Wind (OCS-A 0498)	2024-2025	906	111	111	13.9	24.6
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible
Skipjack (OCS-A 0519)	2024-2030	853	0	33	Not Visible	Not Visible
Garden State (OCS-A 0482)	2023-2030	853	66	80	45.3	53.7
US Wind (OCS-A 0489 and 0490)	2024	938	0	101	Not Visible	Not Visible
Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	164	164	16.2	33.2
Ocean Wind II (OCS-A 0532)	2026-2030	906	111	111	8.8	31.3
Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
Attentive Energy (OCS-A 0538)	by 2030	853	0	101	Not Visible	Not Visible
Bight Wind Holdings (OCS-A 0539)	by 2030	853	11	148	50.3	53.0
Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	95	95	41.4	50.9
Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	70	99	43.9	53.0



MATCH LINE AC04 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

AC04: Ocean Casino Resort - Sky Garden, Atlantic City, Atlantic County, New Jersey

Photosimulation (Panorama 1): Scenario 5: Atlantic Shores South without the construction of other foreseeable planned activities

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

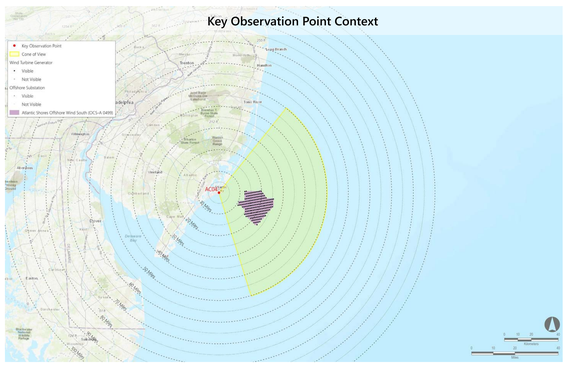
This box should be exactly 1' long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	205	205	10.5	25.6

Key Observation Point Context



Key Observation Point Location

AC04: Ocean Casino Resort - Sky Garden, Atlantic City, Atlantic County, New Jersey

Environmental Data

Date Taken: 08/25/2022
Time: 10:43 AM
Temperature: 88°F
Humidity: 34%
Visibility*: 10+ miles
Wind Direction: Northwest
Wind Speed: 13 mph
Conditions Observed: Fair

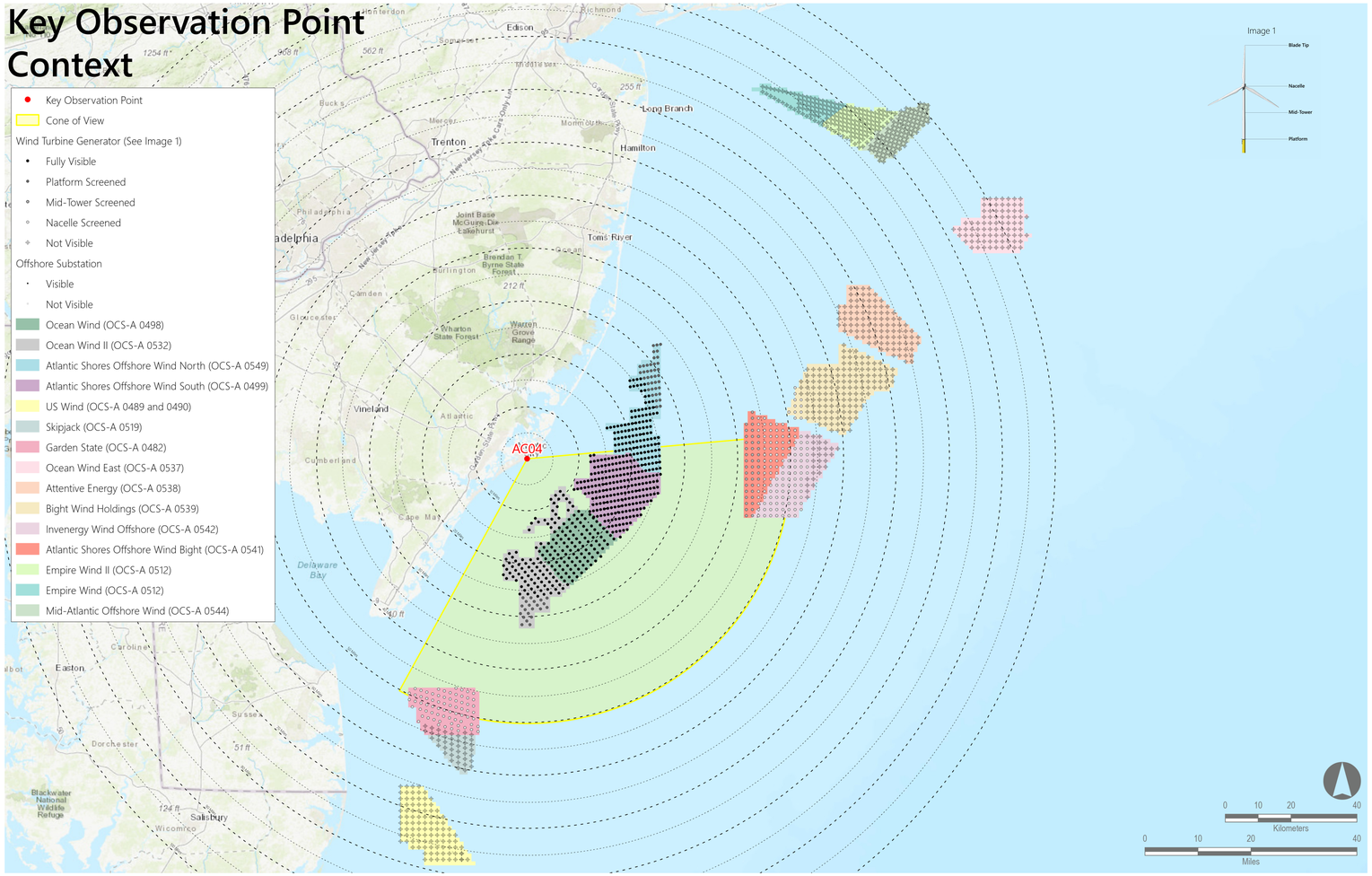
Camera Information
Camera: Canon EOS 5D Mark IV
Resolution: 30.4 Megapixels
Lens Focal Length: 50 mm
Camera Height: 117.26 feet AMSL

Key Observation Point Information

County: Atlantic
Town: Atlantic City
State: New Jersey
Location: Ocean Casino Resort - Sky Deck
Latitude, Longitude: 39.36225°N, 74.41353°W
Direction of View (Center): East (100.9°)
Field of View: 124° x 55°

Visual Resources
Character Area: Atlantic City, Seascape (SCA)
User Group: Local Resident/Tourist
Visually Sensitive Resource: Atlantic City Beach

Key Observation Point Context



Reasonably Foreseeable Projects Represented in Photosimulation

		Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP**	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Scenario 5	Scenario 2	Atlantic Shores Offshore Wind South (OCS-A 0499)	2025-2027	1,047	205	205	10.5	25.6
Scenario 4	Scenario 1	Ocean Wind (OCS-A 0498)	2023-2025	906	111	111	13.9	24.6
		Empire Wind (OCS-A 0512)	2024-2025	951	0	72	Not Visible	Not Visible
		Empire Wind II (OCS-A 0512)	2023-2027	951	0	104	Not Visible	Not Visible
	Scenario 3	Skipjack (OCS-A 0519)	2024-2030	853	0	33	Not Visible	Not Visible
		Garden State (OCS-A 0482)	2023-2030	853	66	80	45.3	53.7
		US Wind (OCS-A 0489 and 0490)	2024	938	0	101	Not Visible	Not Visible
		Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	164	164	16.2	33.2
		Ocean Wind II (OCS-A 0532)	2026-2030	906	111	111	8.8	31.3
		Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
		Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
		Attentive Energy (OCS-A 0538)	by 2030	853	0	101	Not Visible	Not Visible
		Bight Wind Holdings (OCS-A 0539)	by 2030	853	11	148	50.3	53.0
		Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	95	95	41.4	50.9
		Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	70	99	43.9	53.0

Notes:
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- *Historical meteorological data predicts visibility within a limit of 10 statute miles. However, visibility may extend beyond this distance. The photosimulations assume visibility extends to the limit of physical visibility (including a standard refraction index).
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- **The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

ATLANTIC SHORES offshore wind

MATCH LINE AC04 PANO #1

MATCH LINE AC04 PANO #1

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

AC04: Ocean Casino Resort - Sky Garden, Atlantic City, Atlantic County, New Jersey

Existing Conditions (Panorama 2)

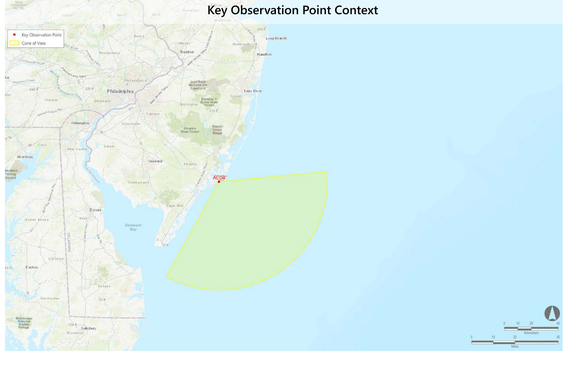
Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This box should be exactly 1" long on the printed panorama

Key Observation Point Context



Key Observation Point Location

MATCH LINE AC04 PANO #1

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

AC04: Ocean Casino Resort - Sky Garden, Atlantic City, Atlantic County, New Jersey

Photosimulation (Panorama 2): Scenario 1: 2023-2025 Project Construction (Ocean Wind, Empire Wind, Empire Wind II)

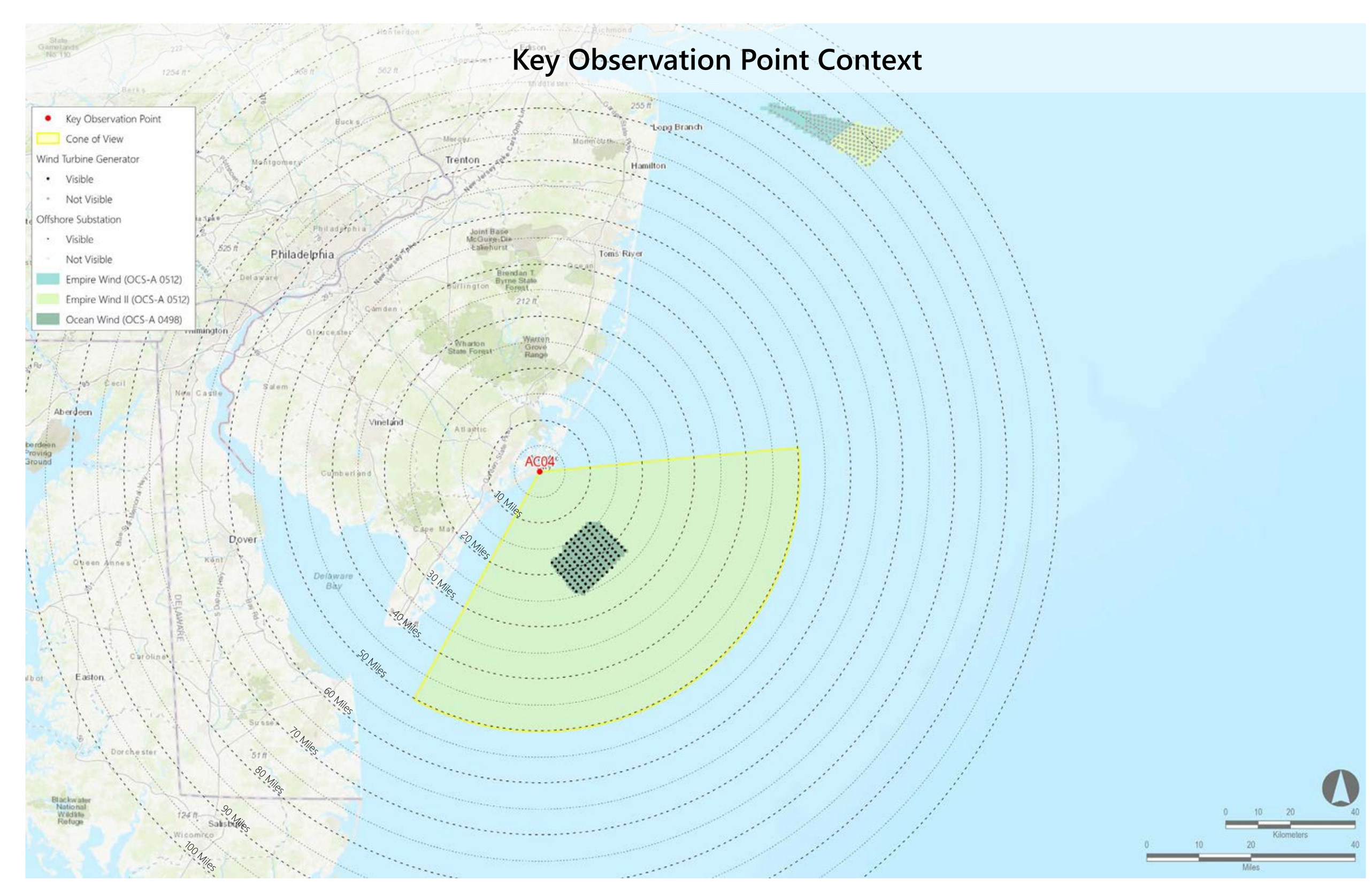
Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Ocean Wind (OCS-A 0498)	2024-2025	906	111	111	13.9	24.6
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible



MATCH LINE AC04 PANO #1

MATCH LINE AC04 PANO #1

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

AC04: Ocean Casino Resort - Sky Garden, Atlantic City, Atlantic County, New Jersey

Photosimulation (Panorama 2): Scenario 2: Atlantic Shores Construction (2025-2027) added to Scenario 1 (Ocean Wind, Empire Wind, Empire Wind II, Atlantic Shores South)

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

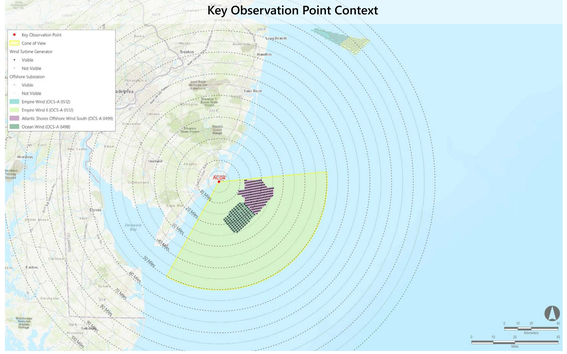
This box should be exactly 7" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	205	205	10.5	25.6
Ocean Wind (OCS-A 0498)	2024-2025	906	111	111	13.9	24.6
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible

Key Observation Point Context



Key Observation Point Location

MATCH LINE AC04 PANO #1

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

AC04: Ocean Casino Resort - Sky Garden, Atlantic City, Atlantic County, New Jersey

Photosimulation (Panorama 2): Scenario 3: 2024-2030 Project construction added after the construction of Atlantic Shores South (Full Lease Build-out Including Atlantic Shores South)

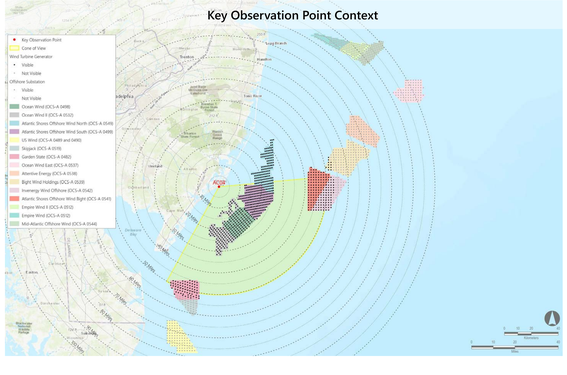
Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This box should be exactly 7" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	205	205	10.5	25.6
Ocean Wind (OCS-A 0498)	2024-2025	906	111	111	13.9	24.6
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible
Skipjack (OCS-A 0519)	2024-2030	853	0	33	Not Visible	Not Visible
Garden State (OCS-A 0482)	2023-2030	853	66	80	45.3	53.7
US Wind (OCS-A 0489 and 0490)	2024	938	0	101	Not Visible	Not Visible
Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	164	164	16.2	33.2
Ocean Wind II (OCS-A 0532)	2026-2030	906	111	111	8.8	31.3
Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
Attentive Energy (OCS-A 0538)	by 2030	853	0	101	Not Visible	Not Visible
Bight Wind Holdings (OCS-A 0539)	by 2030	853	11	148	50.3	53.0
Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	95	95	41.4	50.9
Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	70	99	43.9	53.0



MATCH LINE AC04 PANO #1

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

AC04: Ocean Casino Resort - Sky Garden, Atlantic City, Atlantic County, New Jersey

Photosimulation (Panorama 2): Scenario 4: Full buildout of all lease areas without Atlantic Shores South

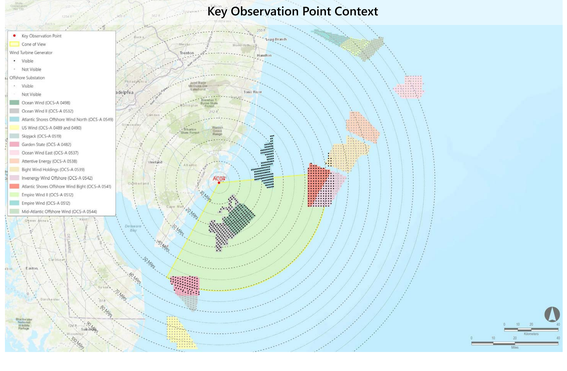
Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This box should be exactly 7" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Ocean Wind (OCS-A 0498)	2024-2025	906	111	111	13.9	24.6
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible
Skipjack (OCS-A 0519)	2024-2030	853	0	33	Not Visible	Not Visible
Garden State (OCS-A 0482)	2023-2030	853	66	80	45.3	53.7
US Wind (OCS-A 0489 and 0490)	2024	938	0	101	Not Visible	Not Visible
Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	164	164	16.2	33.2
Ocean Wind II (OCS-A 0532)	2026-2030	906	111	111	8.8	31.3
Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
Attentive Energy (OCS-A 0538)	by 2030	853	0	101	Not Visible	Not Visible
Bight Wind Holdings (OCS-A 0539)	by 2030	853	11	148	50.3	53.0
Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	95	95	41.4	50.9
Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	70	99	43.9	53.0



MATCH LINE AC04 PANO #1

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

AC04: Ocean Casino Resort - Sky Garden, Atlantic City, Atlantic County, New Jersey

Photosimulation (Panorama 2): Scenario 5: Atlantic Shores South without the construction of other foreseeable planned activities

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

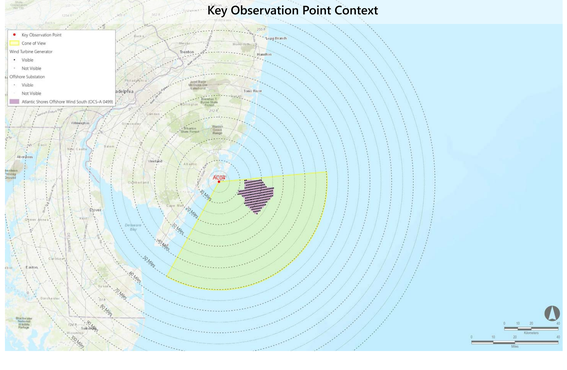
This box should be exactly 7" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	205	205	10.5	25.6

Key Observation Point Context



Key Observation Point Location

AC04 Night: Ocean Casino Resort - Sky Garden, Atlantic City, Atlantic County, New Jersey

Environmental Data

Date Taken: 08/25/2022
Time: 10:43 AM
Temperature: 88°F
Humidity: 34%
Visibility*: 10+ miles
Wind Direction: Northwest
Wind Speed: 13 mph
Conditions Observed: Fair

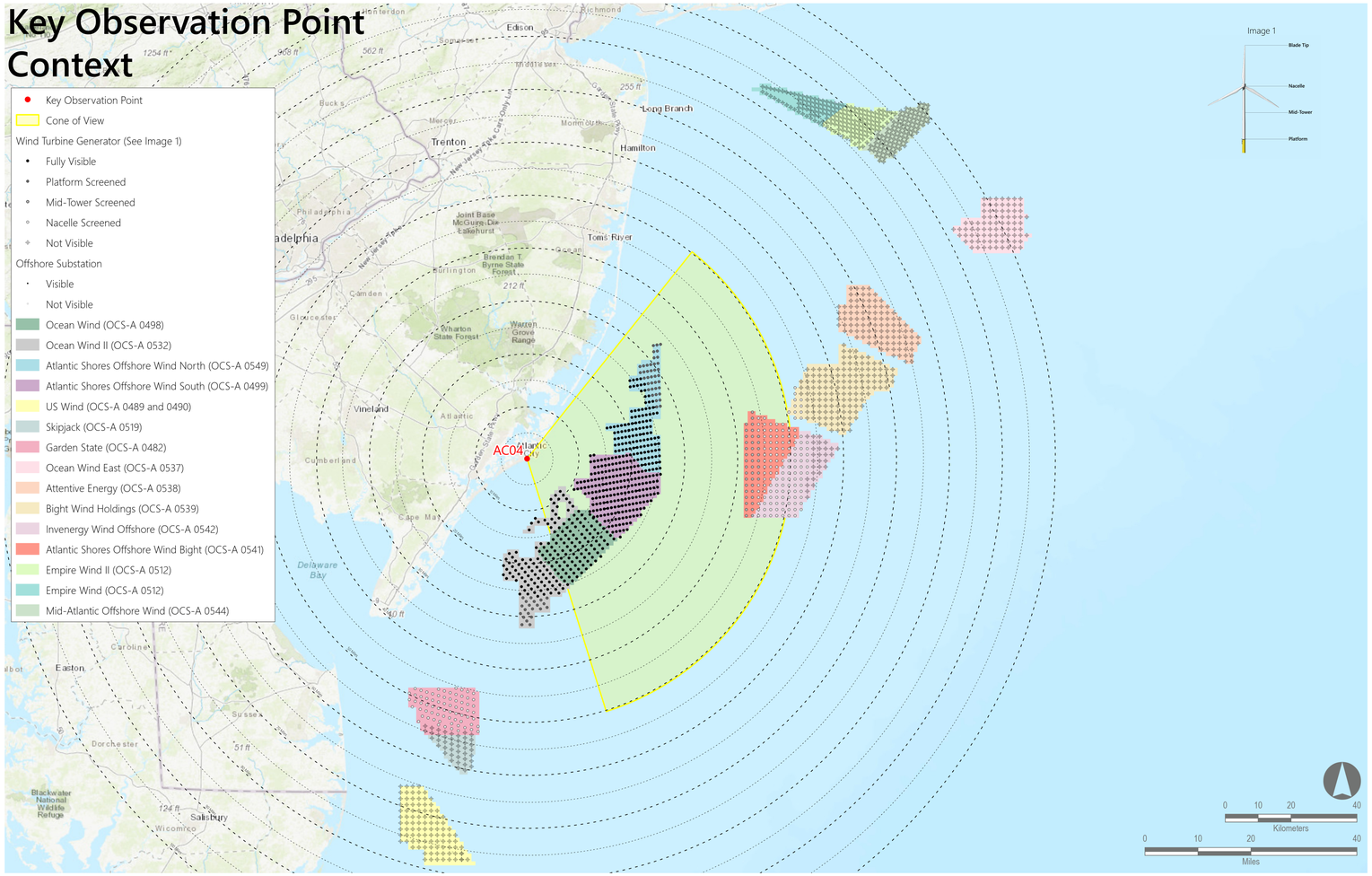
Camera Information
Camera: Canon EOS 5D Mark IV
Resolution: 30.4 Megapixels
Lens Focal Length: 50 mm
Camera Height: 117.26 feet AMSL

Key Observation Point Information

County: Atlantic
Town: Atlantic City
State: New Jersey
Location: Ocean Casino Resort - Sky Deck
Latitude, Longitude: 39.36225°N, 74.41353°W
Direction of View (Center): East (100.9°)
Field of View: 124° x 55°

Visual Resources
Character Area: Atlantic City, Seascape (SCA)
User Group: Local Resident/Tourist
Visually Sensitive Resource: Atlantic City Beach

Key Observation Point Context



Reasonably Foreseeable Projects Represented in Photosimulation

		Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP**	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Scenario 5	Scenario 2	Atlantic Shores Offshore Wind South (OCS-A 0499)	2025-2027	1,047	205	205	10.5	25.6
Scenario 4	Scenario 1	Ocean Wind (OCS-A 0498)	2023-2025	906	111	111	13.9	24.6
		Empire Wind (OCS-A 0512)	2024-2025	951	0	72	Not Visible	Not Visible
		Empire Wind II (OCS-A 0512)	2023-2027	951	0	104	Not Visible	Not Visible
	Scenario 3	Skipjack (OCS-A 0519)	2024-2030	853	0	33	Not Visible	Not Visible
		Garden State (OCS-A 0482)	2023-2030	853	0	80	Not Visible	Not Visible
		US Wind (OCS-A 0489 and 0490)	2024	938	0	101	Not Visible	Not Visible
		Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	164	164	16.2	33.2
		Ocean Wind II (OCS-A 0532)	2026-2030	906	111	111	8.8	31.3
		Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
		Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
		Attentive Energy (OCS-A 0538)	by 2030	853	0	101	Not Visible	Not Visible
		Bight Wind Holdings (OCS-A 0539)	by 2030	853	0	148	Not Visible	Not Visible
		Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	56	95	41.4	50.9
		Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	1	99	43.9	53.0

Notes:
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- *Historical meteorological data predicts visibility within a limit of 10 statute miles. However, visibility may extend beyond this distance. The photosimulations assume visibility extends to the limit of physical visibility (including a standard refraction index).
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- **The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.
- Nighttime photosimulations are digitally adjusted from daytime photographs. Nighttime photographs captured at each represented KOP inform the presence or lack of existing light sources.

ATLANTIC SHORES offshore wind

MATCH LINE AC04 PANO #2

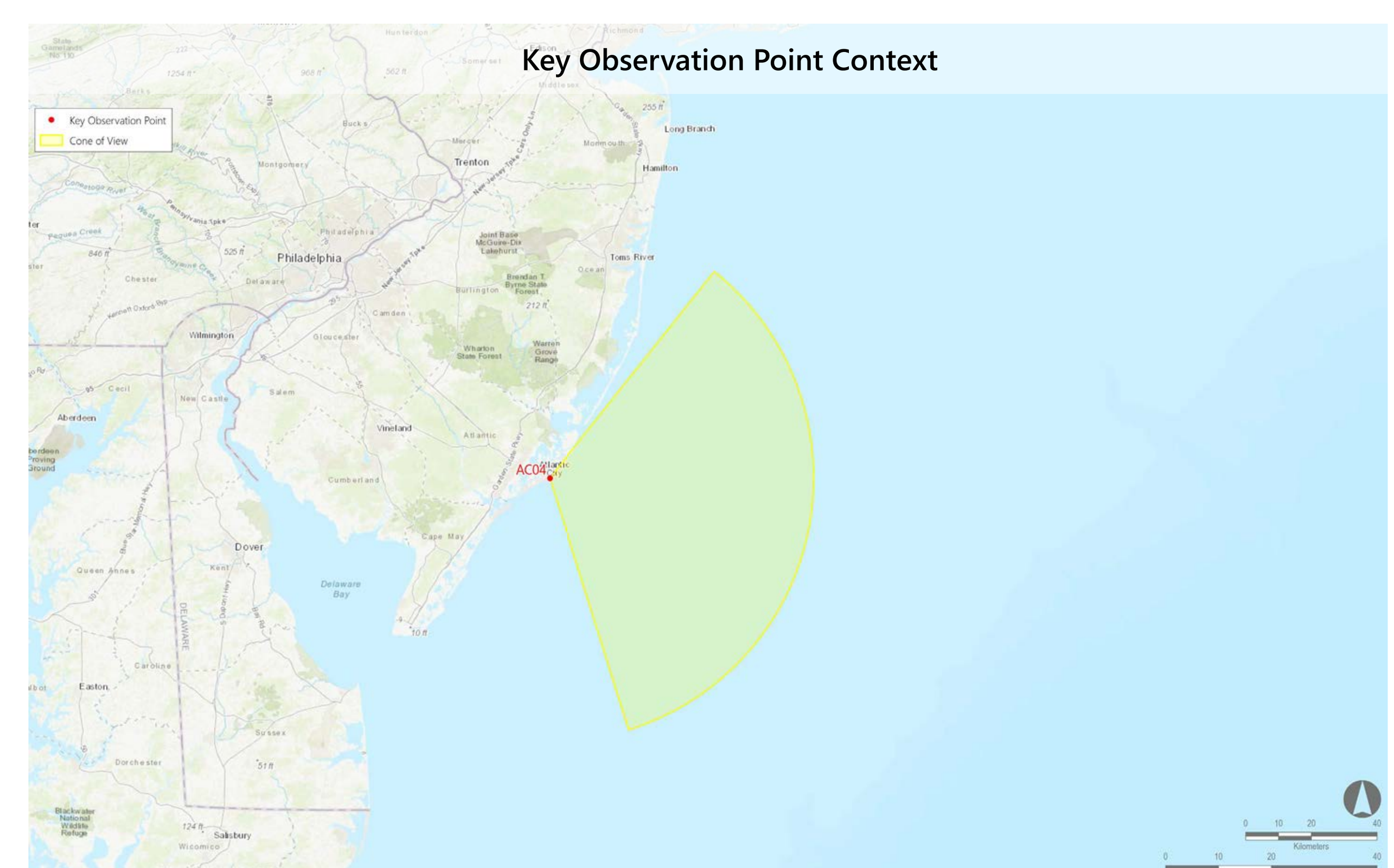
ATLANTIC SHORES offshore wind

Notes:
- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Nighttime photosimulations are digitally adjusted from daytime photographs. Nighttime photographs captured at each represented KOP inform the presence or lack of existing light sources.

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

AC04 Night: Ocean Casino Resort - Sky Garden, Atlantic City, Atlantic County, New Jersey

Existing Conditions (Panorama 1)



Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This box should be exactly 1" long on the printed panorama

MATCH LINE AC04 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

AC04 Night: Ocean Casino Resort - Sky Garden, Atlantic City, Atlantic County, New Jersey

Photosimulation (Panorama 1): Scenario 1: 2023-2025 Project Construction (Ocean Wind, Empire Wind, Empire Wind II)

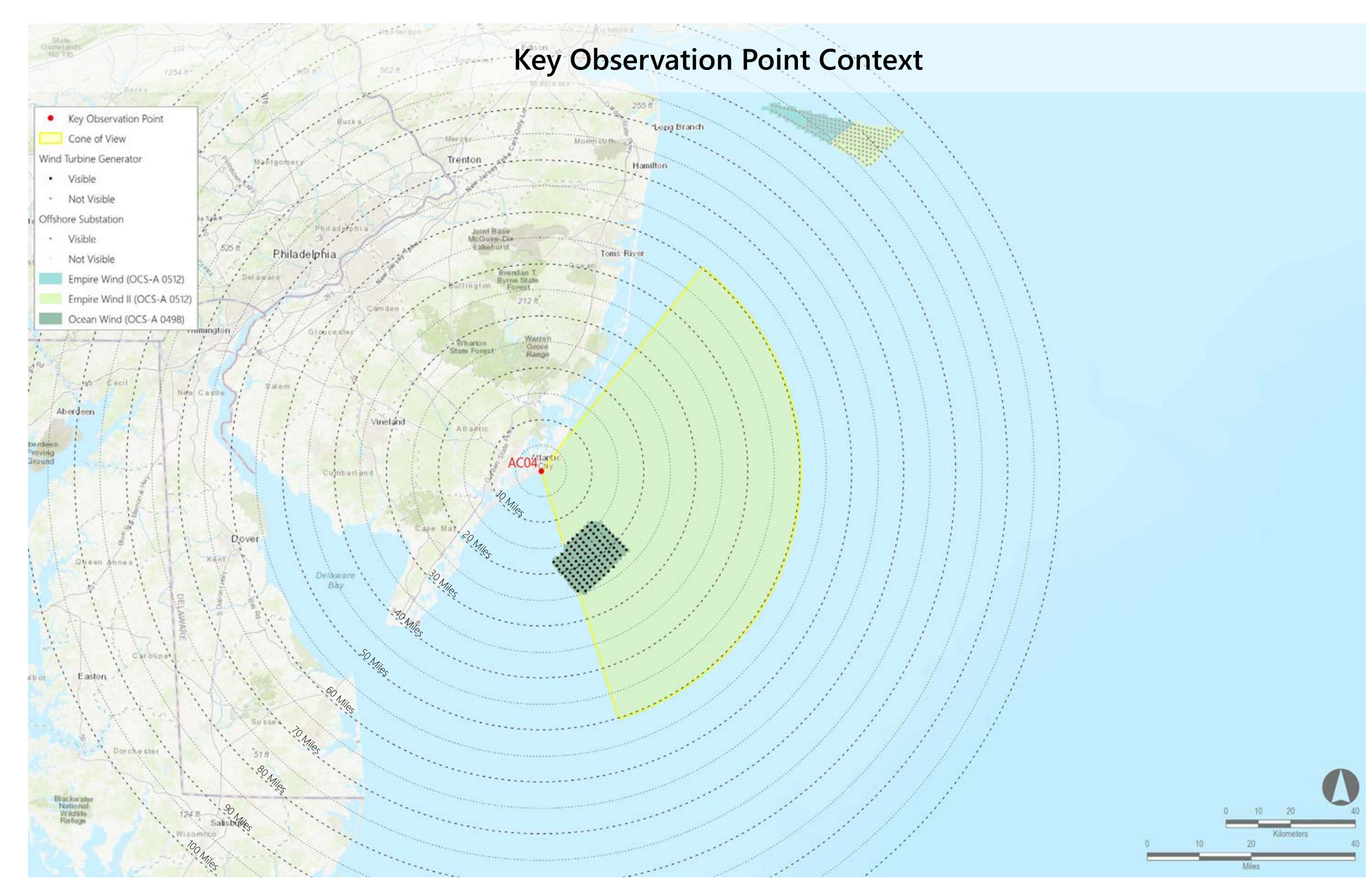
Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.
- Nighttime photosimulations are digitally adjusted from daytime photographs. Nighttime photographs captured at each represented KOP inform the presence or lack of existing light sources.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Ocean Wind (OCS-A 0498)	2024-2025	906	111	111	13.9	24.6
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible



MATCH LINE AC04 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

AC04 Night: Ocean Casino Resort - Sky Garden, Atlantic City, Atlantic County, New Jersey

Photosimulation (Panorama 1): Scenario 2: Atlantic Shores Construction (2025-2027) added to Scenario 1 (Ocean Wind, Empire Wind, Empire Wind II, Atlantic Shores South)

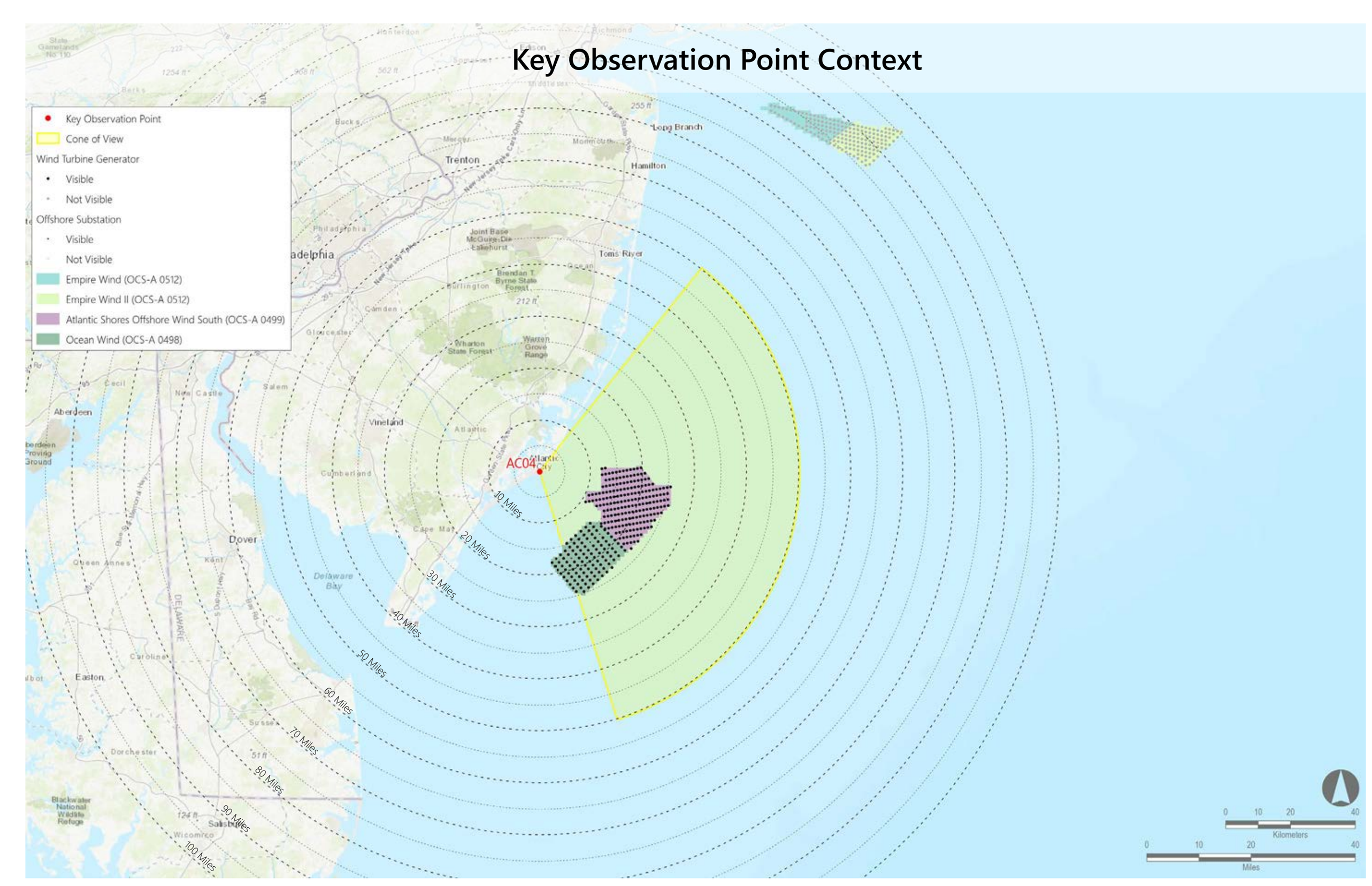
Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.
- Nighttime photosimulations are digitally adjusted from daytime photographs. Nighttime photographs captured at each represented KOP inform the presence or lack of existing light sources.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	205	205	10.5	25.6
Ocean Wind (OCS-A 0498)	2024-2025	906	111	111	13.9	24.6
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible



ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

AC04 Night: Ocean Casino Resort - Sky Garden, Atlantic City, Atlantic County, New Jersey

Photosimulation (Panorama 1): Scenario 3: 2024-2030 Project construction added after the construction of Atlantic Shores South (Full Lease Build-out Including Atlantic Shores South)

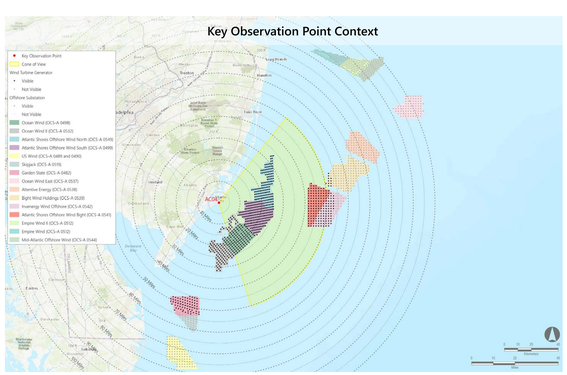
Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This size should measure 1" sq on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.
- Nighttime photosimulations are digitally adjusted from daytime photographs. Nighttime photographs captured at each represented KOP inform the presence or lack of existing light sources.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	205	205	10.5	25.6
Ocean Wind (OCS-A 0498)	2024-2025	906	111	111	13.9	24.6
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible
Skipjack (OCS-A 0519)	2024-2030	853	0	33	Not Visible	Not Visible
Garden State (OCS-A 0482)	2023-2030	853	0	80	Not Visible	Not Visible
US Wind (OCS-A 0489 and 0490)	2024	938	0	101	Not Visible	Not Visible
Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	164	164	16.2	33.2
Ocean Wind II (OCS-A 0532)	2026-2030	906	111	111	8.8	31.3
Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
Attentive Energy (OCS-A 0538)	by 2030	853	0	101	Not Visible	Not Visible
Bight Wind Holdings (OCS-A 0539)	by 2030	853	0	148	Not Visible	Not Visible
Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	56	95	41.4	50.9
Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	1	99	43.9	53.0



MATCH LINE AC04 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

AC04 Night: Ocean Casino Resort - Sky Garden, Atlantic City, Atlantic County, New Jersey

Photosimulation (Panorama 1): Scenario 4: Full buildout of all lease areas without Atlantic Shores South

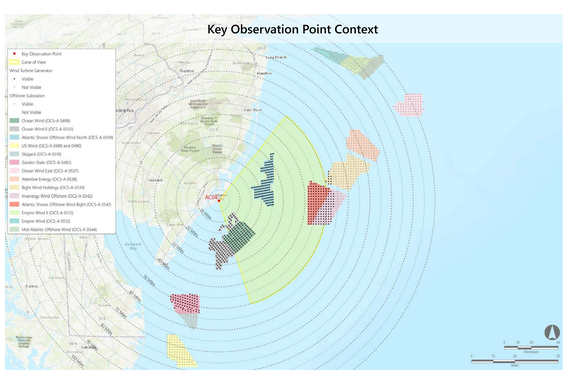
Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This box should measure 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.
- Nighttime photosimulations are digitally adjusted from daytime photographs. Nighttime photographs captured at each represented KOP inform the presence or lack of existing light sources.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Ocean Wind (OCS-A 0498)	2024-2025	906	111	111	13.9	24.6
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible
Skipjack (OCS-A 0519)	2024-2030	853	0	33	Not Visible	Not Visible
Garden State (OCS-A 0482)	2023-2030	853	0	80	Not Visible	Not Visible
US Wind (OCS-A 0489 and 0490)	2024	938	0	101	Not Visible	Not Visible
Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	164	164	16.2	33.2
Ocean Wind II (OCS-A 0532)	2026-2030	906	111	111	8.8	31.3
Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
Attentive Energy (OCS-A 0538)	by 2030	853	0	101	Not Visible	Not Visible
Bight Wind Holdings (OCS-A 0539)	by 2030	853	0	148	Not Visible	Not Visible
Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	56	95	41.4	50.9
Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	1	99	43.9	53.0



MATCH LINE AC04 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

AC04 Night: Ocean Casino Resort - Sky Garden, Atlantic City, Atlantic County, New Jersey

Photosimulation (Panorama 1): Scenario 5: Atlantic Shores South without the construction of other foreseeable planned activities

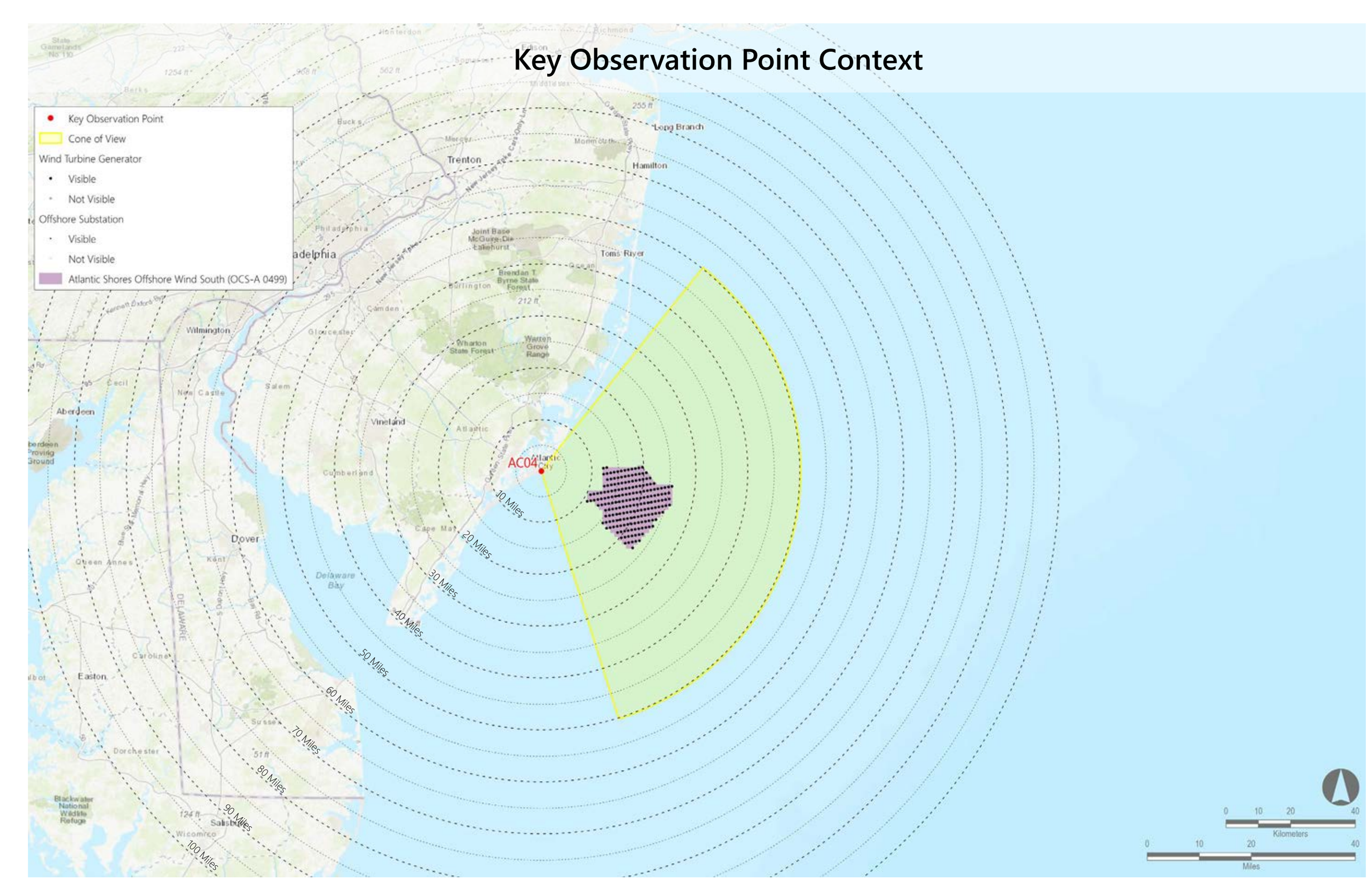
Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.
- Nighttime photosimulations are digitally adjusted from daytime photographs. Nighttime photographs captured at each represented KOP inform the presence or lack of existing light sources.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	205	205	10.5	25.6



AC04 Night: Ocean Casino Resort - Sky Garden, Atlantic City, Atlantic County, New Jersey

Environmental Data

Date Taken: 08/25/2022
Time: 10:43 AM
Temperature: 88°F
Humidity: 34%
Visibility*: 10+ miles
Wind Direction: Northwest
Wind Speed: 13 mph
Conditions Observed: Fair

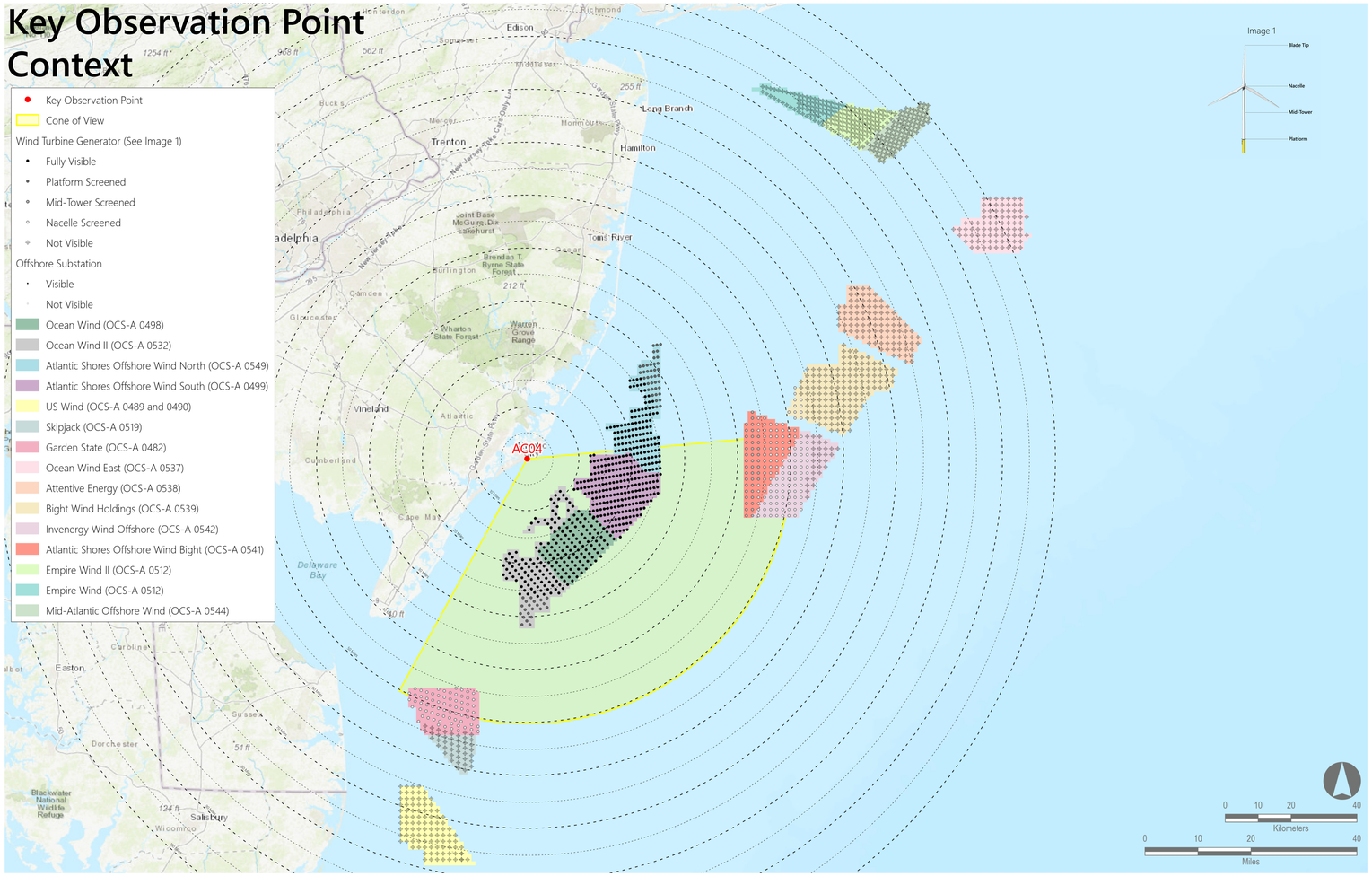
Camera Information
Camera: Canon EOS 5D Mark IV
Resolution: 30.4 Megapixels
Lens Focal Length: 50 mm
Camera Height: 117.26 feet AMSL

Key Observation Point Information

County: Atlantic
Town: Atlantic City
State: New Jersey
Location: Ocean Casino Resort - Sky Deck
Latitude, Longitude: 39.36225°N, 74.41353°W
Direction of View (Center): East (100.9°)
Field of View: 124° x 55°

Visual Resources
Character Area: Atlantic City, Seascape (SCA)
User Group: Local Resident/Tourist
Visually Sensitive Resource: Atlantic City Beach

Key Observation Point Context



Reasonably Foreseeable Projects Represented in Photosimulation

		Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP**	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Scenario 5	Scenario 2	Atlantic Shores Offshore Wind South (OCS-A 0499)	2025-2027	1,047	205	205	10.5	25.6
Scenario 4	Scenario 1	Ocean Wind (OCS-A 0498)	2023-2025	906	111	111	13.9	24.6
		Empire Wind (OCS-A 0512)	2024-2025	951	0	72	Not Visible	Not Visible
		Empire Wind II (OCS-A 0512)	2023-2027	951	0	104	Not Visible	Not Visible
	Scenario 3	Skipjack (OCS-A 0519)	2024-2030	853	0	33	Not Visible	Not Visible
		Garden State (OCS-A 0482)	2023-2030	853	0	80	Not Visible	Not Visible
		US Wind (OCS-A 0489 and 0490)	2024	938	0	101	Not Visible	Not Visible
		Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	164	164	16.2	33.2
		Ocean Wind II (OCS-A 0532)	2026-2030	906	111	111	8.8	31.3
		Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
		Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
		Attentive Energy (OCS-A 0538)	by 2030	853	0	101	Not Visible	Not Visible
		Bight Wind Holdings (OCS-A 0539)	by 2030	853	0	148	Not Visible	Not Visible
		Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	56	95	41.4	50.9
		Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	1	99	43.9	53.0

Notes:
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- *Historical meteorological data predicts visibility within a limit of 10 statute miles. However, visibility may extend beyond this distance. The photosimulations assume visibility extends to the limit of physical visibility (including a standard refraction index).
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- **The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.
- Nighttime photosimulations are digitally adjusted from daytime photographs. Nighttime photographs captured at each represented KOP inform the presence or lack of existing light sources.

ATLANTIC SHORES offshore wind

MATCH LINE AC04 PANO #1

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

AC04 Night: Ocean Casino Resort - Sky Garden, Atlantic City, Atlantic County, New Jersey

Existing Conditions (Panorama 2)

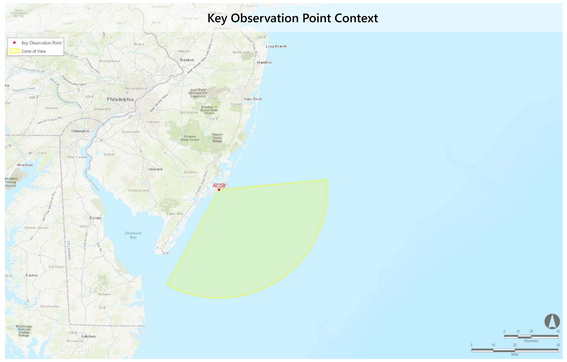
Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Nighttime photosimulations are digitally adjusted from daytime photographs. Nighttime photographs captured at each represented KOP inform the presence or lack of existing light sources.

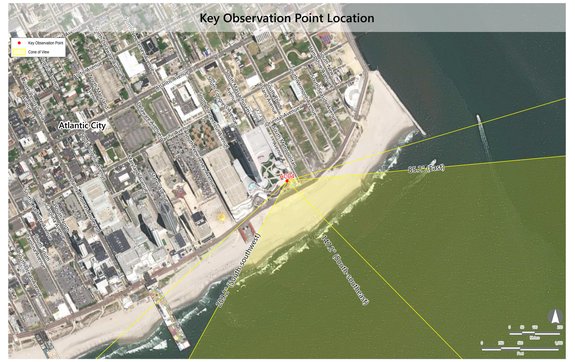
Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This box should be exactly 1" long on the printed panorama

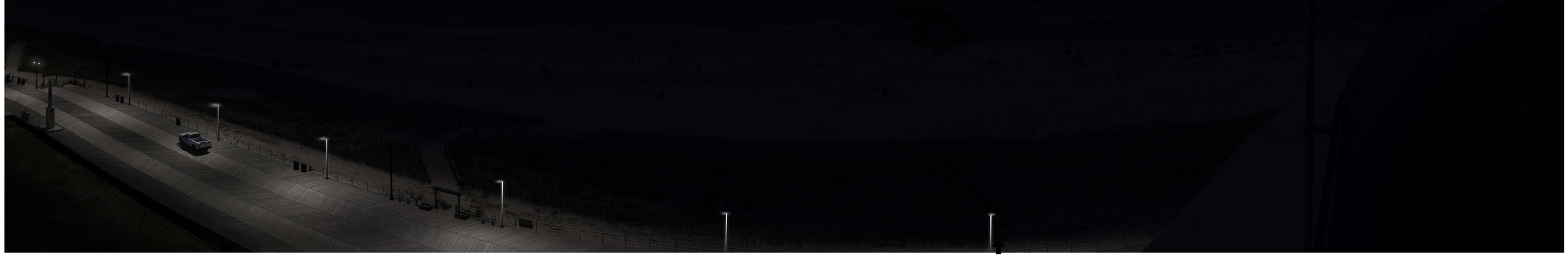
Key Observation Point Context



Key Observation Point Location



MATCH LINE AC04 PANO #1



ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

AC04 Night: Ocean Casino Resort - Sky Garden, Atlantic City, Atlantic County, New Jersey

Photosimulation (Panorama 2): Scenario 1: 2023-2025 Project Construction (Ocean Wind, Empire Wind, Empire Wind II)

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

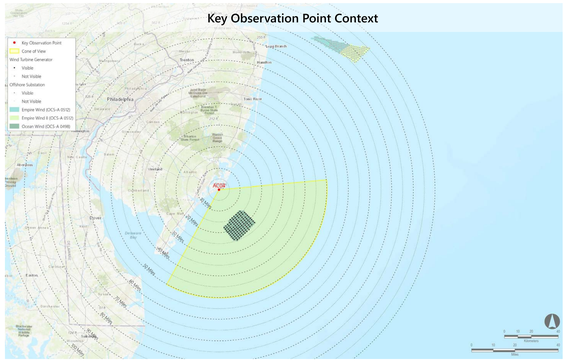
This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.
- Nighttime photosimulations are digitally adjusted from daytime photographs. Nighttime photographs captured at each represented KOP inform the presence or lack of existing light sources.

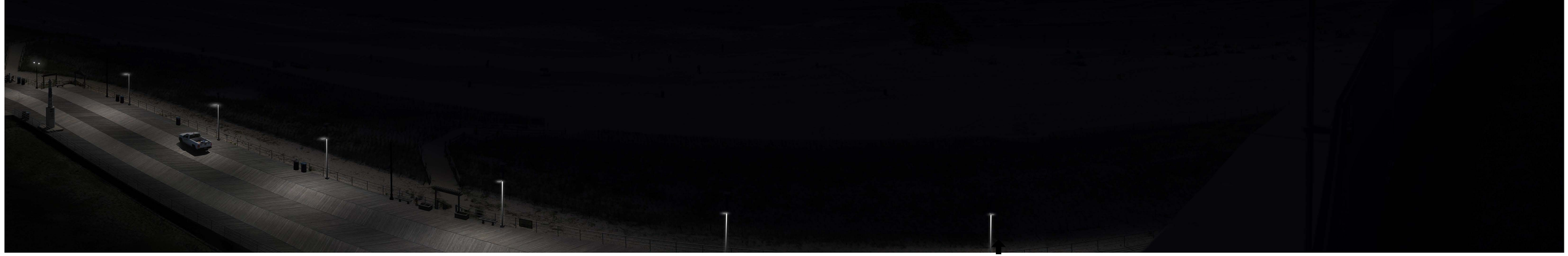
Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Ocean Wind (OCS-A 0498)	2024-2025	906	111	111	13.9	24.6
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible

Key Observation Point Context



Key Observation Point Location

MATCH LINE AC04 PANO #1



ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

AC04 Night: Ocean Casino Resort - Sky Garden, Atlantic City, Atlantic County, New Jersey

Photosimulation (Panorama 2): Scenario 2: Atlantic Shores Construction (2025-2027) added to Scenario 1 (Ocean Wind, Empire Wind, Empire Wind II, Atlantic Shores South)

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

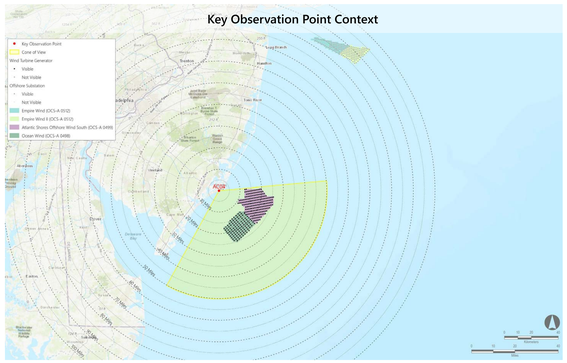
This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.
- Nighttime photosimulations are digitally adjusted from daytime photographs. Nighttime photographs captured at each represented KOP inform the presence or lack of existing light sources.

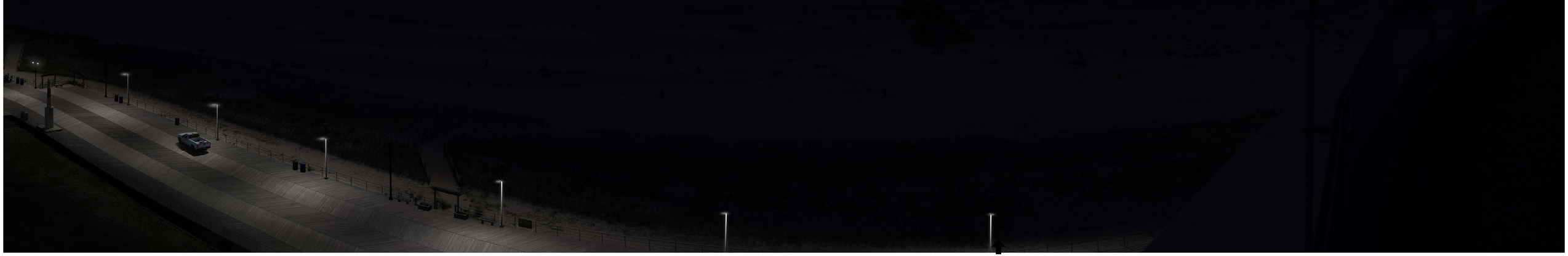
Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	205	205	10.5	25.6
Ocean Wind (OCS-A 0498)	2024-2025	906	111	111	13.9	24.6
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible

Key Observation Point Context



Key Observation Point Location

MATCH LINE AC04 PANO #1



ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

AC04 Night: Ocean Casino Resort - Sky Garden, Atlantic City, Atlantic County, New Jersey

Photosimulation (Panorama 2): Scenario 3: 2024-2030 Project construction added after the construction of Atlantic Shores South (Full Lease Build-out Including Atlantic Shores South)

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

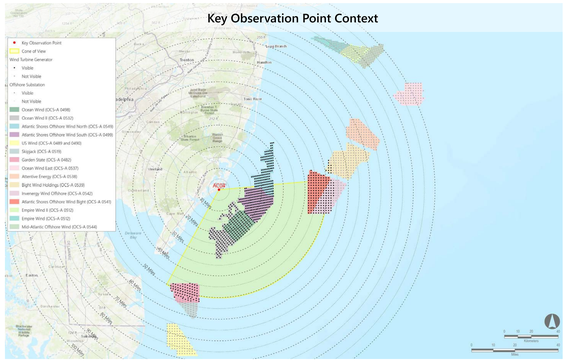
This box should measure 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.
- Nighttime photosimulations are digitally adjusted from daytime photographs. Nighttime photographs captured at each represented KOP inform the presence or lack of existing light sources.

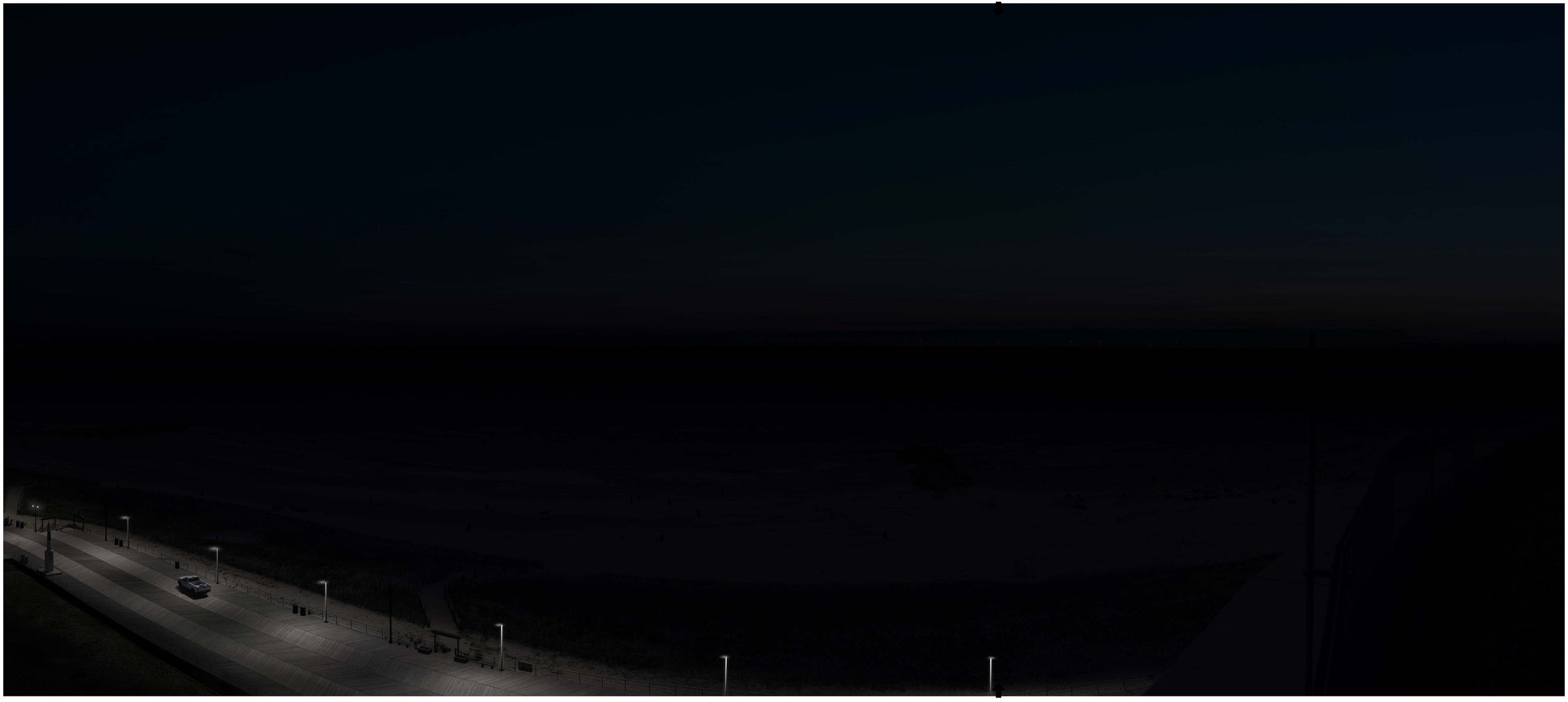
Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	205	205	10.5	25.6
Ocean Wind (OCS-A 0498)	2024-2025	906	111	111	13.9	24.6
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible
Skipjack (OCS-A 0519)	2024-2030	853	0	33	Not Visible	Not Visible
Garden State (OCS-A 0482)	2023-2030	853	0	80	Not Visible	Not Visible
US Wind (OCS-A 0489 and 0490)	2024	938	0	101	Not Visible	Not Visible
Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	164	164	16.2	33.2
Ocean Wind II (OCS-A 0532)	2026-2030	906	111	111	8.8	31.3
Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
Attentive Energy (OCS-A 0538)	by 2030	853	0	101	Not Visible	Not Visible
Bight Wind Holdings (OCS-A 0539)	by 2030	853	0	148	Not Visible	Not Visible
Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	56	95	41.4	50.9
Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	1	99	43.9	53.0

Key Observation Point Context



Key Observation Point Location

MATCH LINE AC04 PANO #1



ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

AC04 Night: Ocean Casino Resort - Sky Garden, Atlantic City, Atlantic County, New Jersey

Photosimulation (Panorama 2): Scenario 4: Full buildout of all lease areas without Atlantic Shores South

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

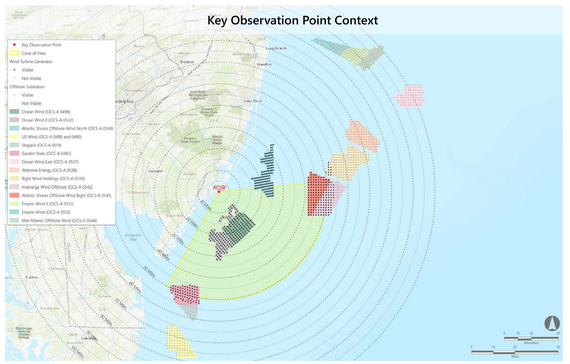
This box should on exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.
- Nighttime photosimulations are digitally adjusted from daytime photographs. Nighttime photographs captured at each represented KOP inform the presence or lack of existing light sources.

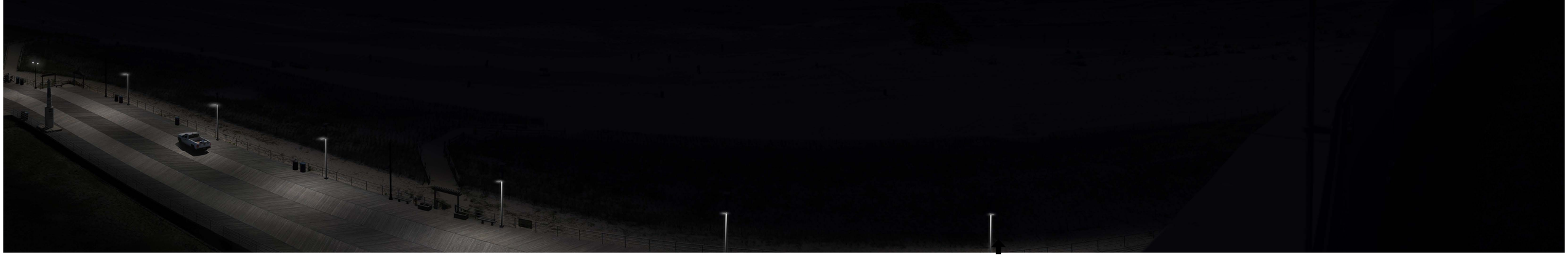
Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Ocean Wind (OCS-A 0498)	2024-2025	906	111	111	13.9	24.6
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible
Skipjack (OCS-A 0519)	2024-2030	853	0	33	Not Visible	Not Visible
Garden State (OCS-A 0482)	2023-2030	853	0	80	Not Visible	Not Visible
US Wind (OCS-A 0489 and 0490)	2024	938	0	101	Not Visible	Not Visible
Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	164	164	16.2	33.2
Ocean Wind II (OCS-A 0532)	2026-2030	906	111	111	8.8	31.3
Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
Attentive Energy (OCS-A 0538)	by 2030	853	0	101	Not Visible	Not Visible
Bight Wind Holdings (OCS-A 0539)	by 2030	853	0	148	Not Visible	Not Visible
Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	56	95	41.4	50.9
Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	1	99	43.9	53.0

Key Observation Point Context



Key Observation Point Location

MATCH LINE AC04 PANO #1



ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

AC04 Night: Ocean Casino Resort - Sky Garden, Atlantic City, Atlantic County, New Jersey

Photosimulation (Panorama 2): Scenario 5: Atlantic Shores South without the construction of other foreseeable planned activities

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

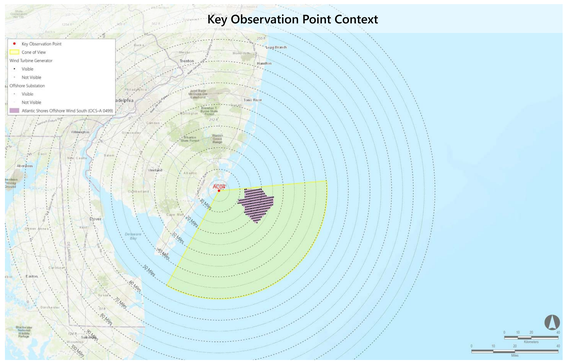
This box should on exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.
- Nighttime photosimulations are digitally adjusted from daytime photographs. Nighttime photographs captured at each represented KOP inform the presence or lack of existing light sources.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	205	205	10.5	25.6

Key Observation Point Context



Key Observation Point Location

BC02: North Brigantine Natural Area, Brigantine City, Atlantic County, New Jersey

Environmental Data

Date Taken: 08/18/2020
Time: 12:00 PM
Temperature: 84°F
Humidity: 53%
Visibility*: 10+ miles
Wind Direction: West-southwest
Wind Speed: 3 mph
Conditions Observed: Fair

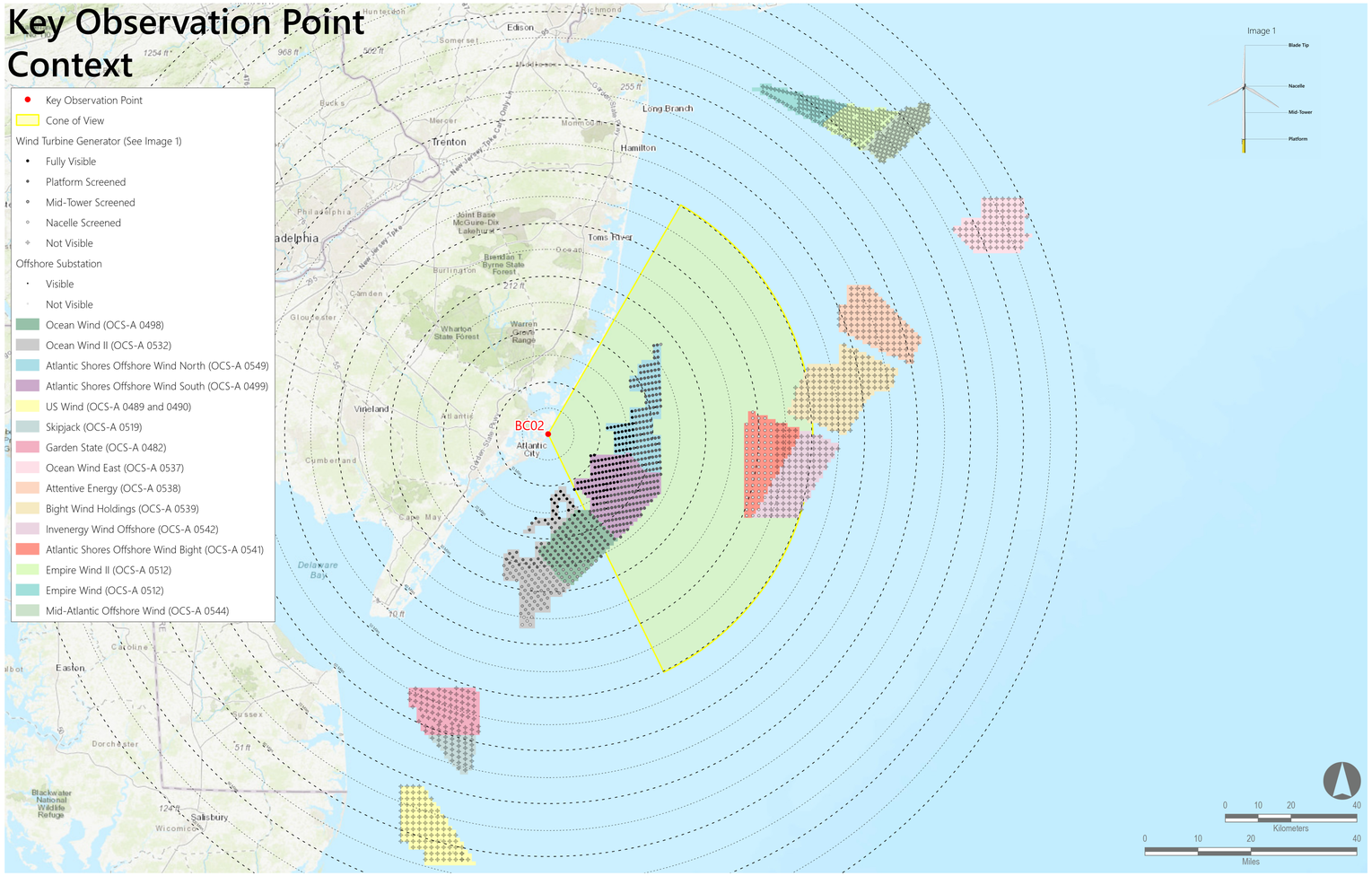
Camera Information
Camera: Canon EOS 5D Mark IV
Resolution: 30.4 Megapixels
Lens Focal Length: 50 mm
Camera Height: 11.06 feet AMSL

Key Observation Point Information

County: Atlantic
Town: Brigantine City
State: New Jersey
Location: North Brigantine Natural Area
Latitude, Longitude: 39.42954°N, 74.33968°W
Direction of View (Center): East (92.5°)
Field of View: 124° x 55°

Visual Resources
Character Area: Undeveloped Beach, Seascape (SCA)
User Group: Residents/Tourists, Fishermen
Visually Sensitive Resource: North Brigantine State Natural Area

Key Observation Point Context



Reasonably Foreseeable Projects Represented in Photosimulation

		Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP**	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Scenario 5	Scenario 2	Atlantic Shores Offshore Wind South (OCS-A 0499)	2025-2027	1,047	205	205	9.0	23.8
Scenario 4	Scenario 1	Ocean Wind (OCS-A 0498)	2023-2025	906	111	111	15.7	28.1
		Empire Wind (OCS-A 0512)	2024-2025	951	0	72	Not Visible	Not Visible
		Empire Wind II (OCS-A 0512)	2023-2027	951	0	104	Not Visible	Not Visible
	Scenario 3	Skipjack (OCS-A 0519)	2024-2030	853	0	33	Not Visible	Not Visible
		Garden State (OCS-A 0482)	2023-2030	853	0	80	Not Visible	Not Visible
		US Wind (OCS-A 0489 and 0490)	2024	938	0	101	Not Visible	Not Visible
		Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	164	164	11.3	27.2
		Ocean Wind II (OCS-A 0532)	2026-2030	906	111	111	11.1	36.3
		Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
		Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
		Attentive Energy (OCS-A 0538)	by 2030	853	0	101	Not Visible	Not Visible
		Bight Wind Holdings (OCS-A 0539)	by 2030	853	0	148	Not Visible	Not Visible
		Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	71	95	37.5	43.0
		Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	4	99	41.6	43.0

Notes:

- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- *Historical meteorological data predicts visibility within a limit of 10 statute miles. However, visibility may extend beyond this distance. The photosimulations assume visibility extends to the limit of physical visibility (including a standard refraction index).
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- **The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

ATLANTIC SHORES offshore wind

MATCH LINE BC02 PANO #2

MATCH LINE BC02 PANO #2

ATLANTIC SHORES offshore wind

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

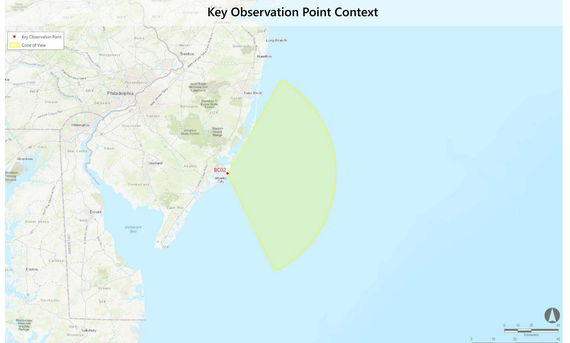
BC02: North Brigantine Natural Area, Brigantine City, Atlantic County, New Jersey

Existing Conditions (Panorama 1)

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This box should be exactly 1" long on the printed panorama

Key Observation Point Context



Key Observation Point Location

MATCH LINE BC02 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

BC02: North Brigantine Natural Area, Brigantine City, Atlantic County, New Jersey

Photosimulation (Panorama 1): Scenario 1: 2023-2025 Project Construction (Ocean Wind, Empire Wind, Empire Wind II)

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

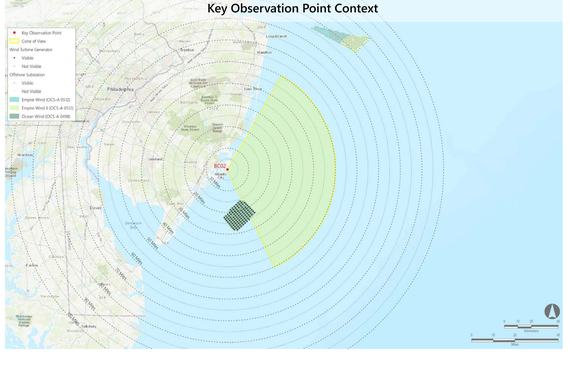
This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Ocean Wind (OCS-A 0498)	2024-2025	906	111	111	15.7	28.1
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible

Key Observation Point Context



Key Observation Point Location

MATCH LINE BC02 PANO #2

MATCH LINE BC02 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

BC02: North Brigantine Natural Area, Brigantine City, Atlantic County, New Jersey

Photosimulation (Panorama 1): Scenario 2: Atlantic Shores Construction (2025-2027) added to Scenario 1 (Ocean Wind, Empire Wind, Empire Wind II, Atlantic Shores South)

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

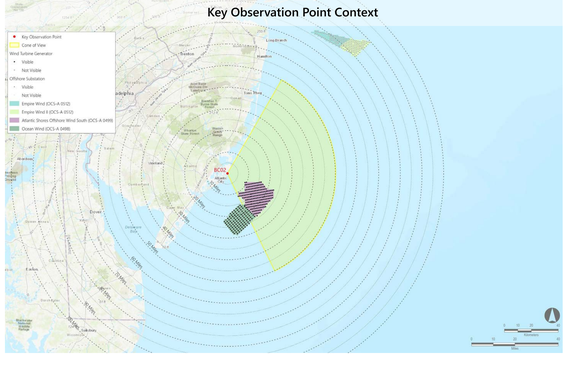
This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	205	205	9.0	23.8
Ocean Wind (OCS-A 0498)	2024-2025	906	111	111	15.7	28.1
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible

Key Observation Point Context



Key Observation Point Location

MATCH LINE BC02 PANO #2

MATCH LINE BC02 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

BC02: North Brigantine Natural Area, Brigantine City, Atlantic County, New Jersey

Photosimulation (Panorama 1): Scenario 3: 2024-2030 Project construction added after the construction of Atlantic Shores South (Full Lease Build-out Including Atlantic Shores South)

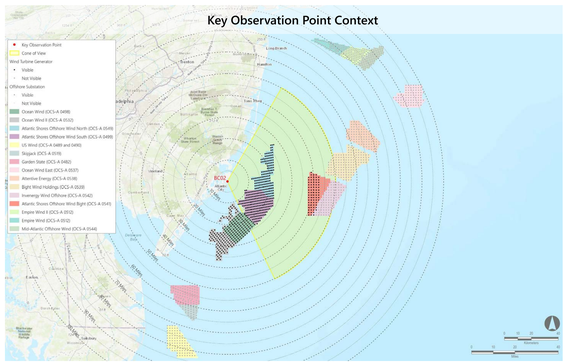
Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	205	205	9.0	23.8
Ocean Wind (OCS-A 0498)	2024-2025	906	111	111	15.7	28.1
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible
Skipjack (OCS-A 0519)	2024-2030	853	0	33	Not Visible	Not Visible
Garden State (OCS-A 0482)	2023-2030	853	0	80	Not Visible	Not Visible
US Wind (OCS-A 0489 and 0490)	2024	938	0	101	Not Visible	Not Visible
Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	164	164	11.3	27.2
Ocean Wind II (OCS-A 0532)	2026-2030	906	111	111	11.1	36.3
Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
Attentive Energy (OCS-A 0538)	by 2030	853	0	101	Not Visible	Not Visible
Bight Wind Holdings (OCS-A 0539)	by 2030	853	0	148	Not Visible	Not Visible
Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	71	95	37.5	43.0
Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	4	99	41.6	43.0



MATCH LINE BC02 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

BC02: North Brigantine Natural Area, Brigantine City, Atlantic County, New Jersey

Photosimulation (Panorama 1): Scenario 4: Full buildout of all lease areas without Atlantic Shores South

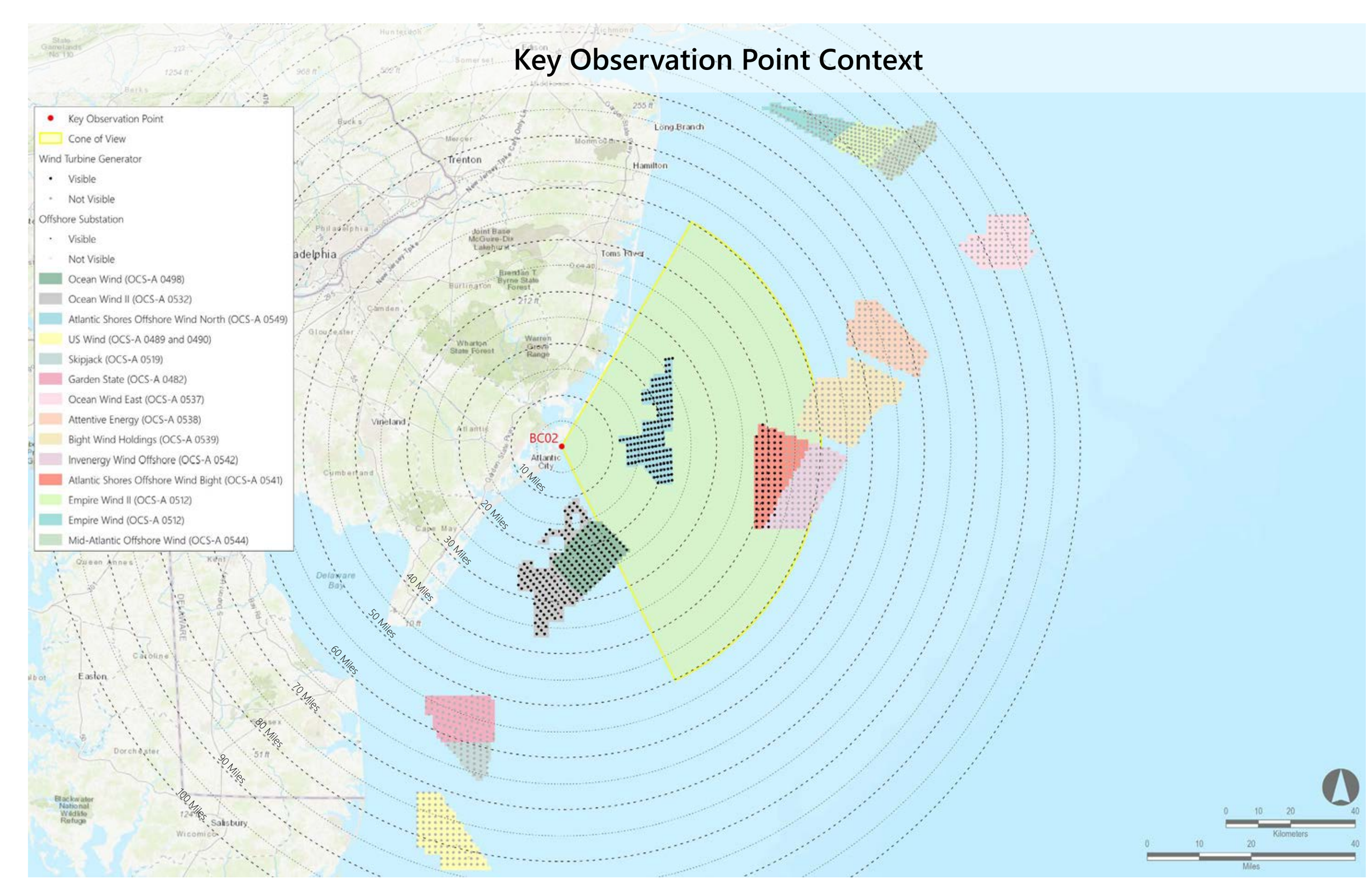
Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Ocean Wind (OCS-A 0498)	2024-2025	906	111	111	15.7	28.1
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible
Skipjack (OCS-A 0519)	2024-2030	853	0	33	Not Visible	Not Visible
Garden State (OCS-A 0482)	2023-2030	853	0	80	Not Visible	Not Visible
US Wind (OCS-A 0489 and 0490)	2024	938	0	101	Not Visible	Not Visible
Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	164	164	11.3	27.2
Ocean Wind II (OCS-A 0532)	2026-2030	906	111	111	11.1	36.3
Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
Attentive Energy (OCS-A 0538)	by 2030	853	0	101	Not Visible	Not Visible
Bight Wind Holdings (OCS-A 0539)	by 2030	853	0	148	Not Visible	Not Visible
Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	71	95	37.5	43.0
Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	4	99	41.6	43.0



MATCH LINE BC02 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

BC02: North Brigantine Natural Area, Brigantine City, Atlantic County, New Jersey

Photosimulation (Panorama 1): Scenario 5: Atlantic Shores South without the construction of other foreseeable planned activities

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	205	205	9.0	23.8

Key Observation Point Context

Key Observation Point Location

BC02: North Brigantine Natural Area, Brigantine City, Atlantic County, New Jersey

Environmental Data

Date Taken: 08/18/2020
Time: 12:00 PM
Temperature: 84°F
Humidity: 53%
Visibility*: 10+ miles
Wind Direction: West-southwest
Wind Speed: 3 mph
Conditions Observed: Fair

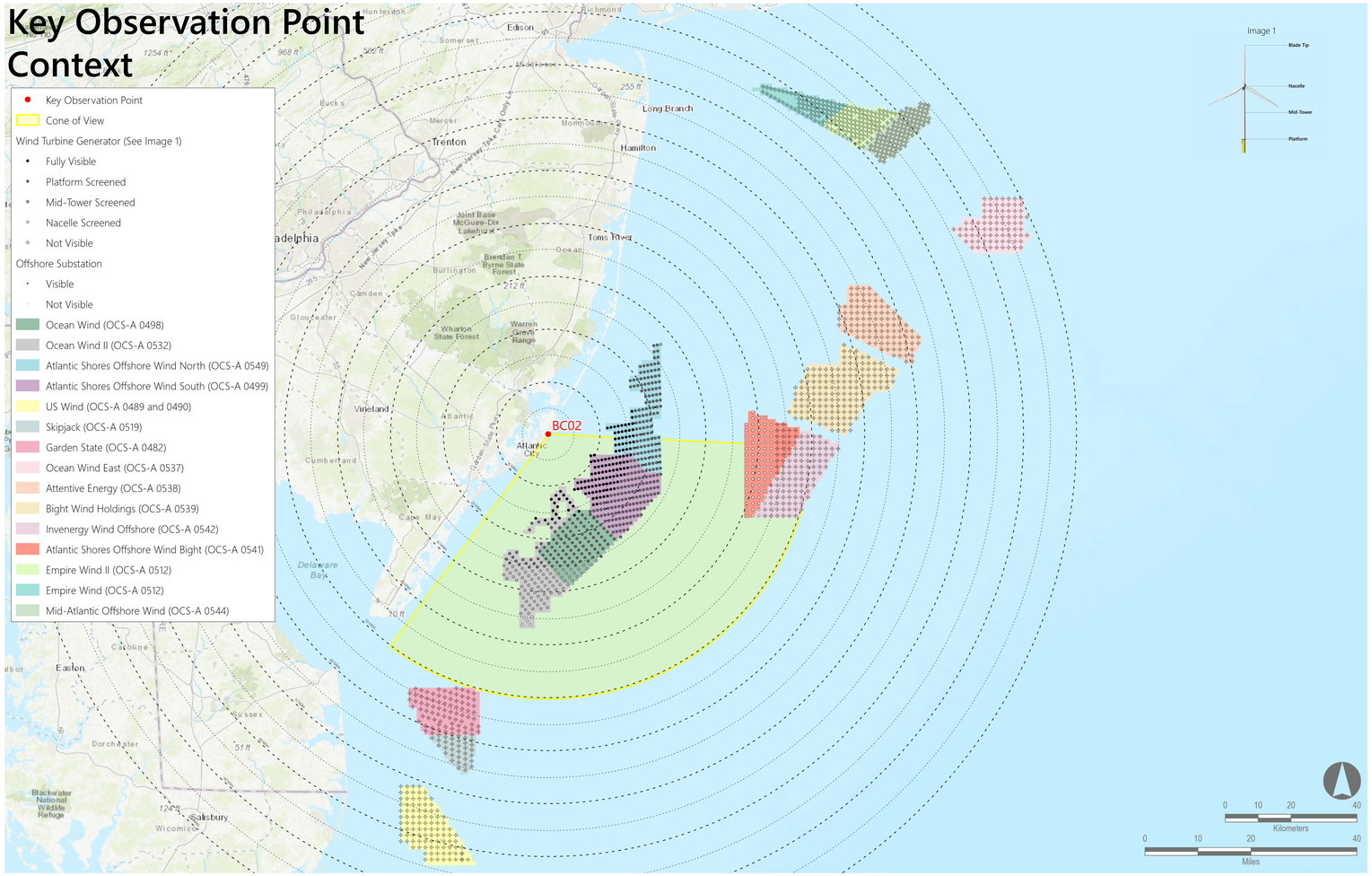
Camera Information
Camera: Canon EOS 5D Mark IV
Resolution: 30.4 Megapixels
Lens Focal Length: 50 mm
Camera Height: 11.06 feet AMSL

Key Observation Point Information

County: Atlantic
Town: Brigantine City
State: New Jersey
Location: North Brigantine Natural Area
Latitude, Longitude: 39.42954°N, 74.33968°W
Direction of View (Center): South-southeast (155.2°)
Field of View: 124° x 55°

Visual Resources
Character Area: Undeveloped Beach, Seascape (SCA)
User Group: Residents/Tourists, Fishermen
Visually Sensitive Resource: North Brigantine State Natural Area

Key Observation Point Context



Reasonably Foreseeable Projects Represented in Photosimulation

		Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP**	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Scenario 5	Scenario 2	Atlantic Shores Offshore Wind South (OCS-A 0499)	2025-2027	1,047	205	205	9.0	23.8
Scenario 4	Scenario 1	Ocean Wind (OCS-A 0498)	2023-2025	906	111	111	15.7	28.1
		Empire Wind (OCS-A 0512)	2024-2025	951	0	72	Not Visible	Not Visible
		Empire Wind II (OCS-A 0512)	2023-2027	951	0	104	Not Visible	Not Visible
	Scenario 3	Skipjack (OCS-A 0519)	2024-2030	853	0	33	Not Visible	Not Visible
		Garden State (OCS-A 0482)	2023-2030	853	0	80	Not Visible	Not Visible
		US Wind (OCS-A 0489 and 0490)	2024	938	0	101	Not Visible	Not Visible
		Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	164	164	11.3	27.2
		Ocean Wind II (OCS-A 0532)	2026-2030	906	111	111	11.1	36.3
		Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
		Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
		Attentive Energy (OCS-A 0538)	by 2030	853	0	101	Not Visible	Not Visible
		Bight Wind Holdings (OCS-A 0539)	by 2030	853	0	148	Not Visible	Not Visible
		Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	71	95	37.5	43.0
		Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	4	99	41.6	43.0

Notes:

- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- *Historical meteorological data predicts visibility within a limit of 10 statute miles. However, visibility may extend beyond this distance. The photosimulations assume visibility extends to the limit of physical visibility (including a standard refraction index).
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- **The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

ATLANTIC SHORES offshore wind

MATCH LINE BC02 PANO #1

MATCH LINE BC02 PANO #1

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

BC02: North Brigantine Natural Area, Brigantine City, Atlantic County, New Jersey

Existing Conditions (Panorama 2)

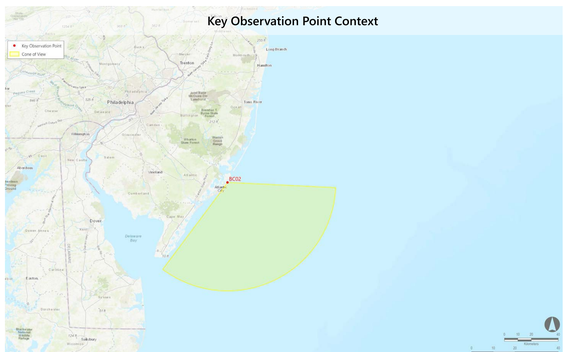
Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This box should be exactly 1" long on the printed panorama

Key Observation Point Context



Key Observation Point Location

MATCH LINE BC02 PANO #1

MATCH LINE BC02 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

BC02: North Brigantine Natural Area, Brigantine City, Atlantic County, New Jersey

Photosimulation (Panorama 2): Scenario 1: 2023-2025 Project Construction (Ocean Wind, Empire Wind, Empire Wind II)

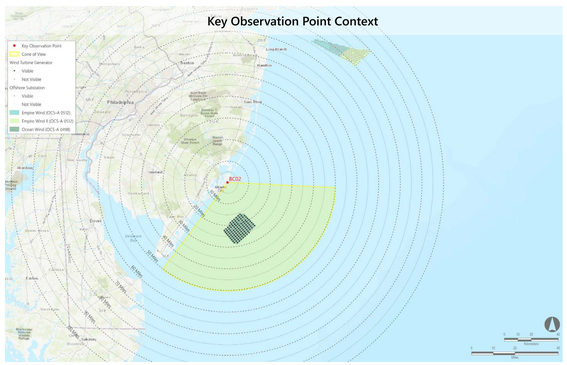
Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Ocean Wind (OCS-A 0498)	2024-2025	906	111	111	15.7	28.1
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible



MATCH LINE BC02 PANO #1

MATCH LINE BC02 PANO #1

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

BC02: North Brigantine Natural Area, Brigantine City, Atlantic County, New Jersey

Photosimulation (Panorama 2): Scenario 2: Atlantic Shores Construction (2025-2027) added to Scenario 1 (Ocean Wind, Empire Wind, Empire Wind II, Atlantic Shores South)

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

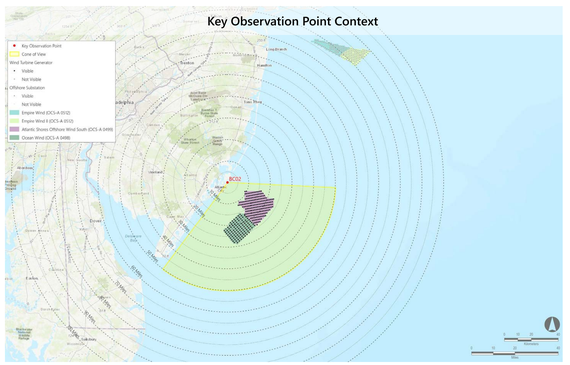
This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	205	205	9.0	23.8
Ocean Wind (OCS-A 0498)	2024-2025	906	111	111	15.7	28.1
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible

Key Observation Point Context



Key Observation Point Location

MATCH LINE BC02 PANO #1

MATCH LINE BC02 PANO #1

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

BC02: North Brigantine Natural Area, Brigantine City, Atlantic County, New Jersey

Photosimulation (Panorama 2): Scenario 3: 2024-2030 Project construction added after the construction of Atlantic Shores South (Full Lease Build-out Including Atlantic Shores South)

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

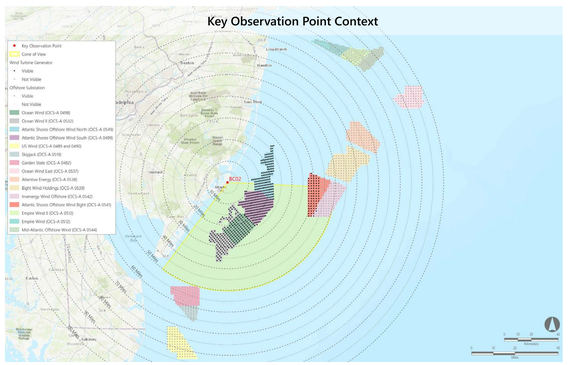
This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	205	205	9.0	23.8
Ocean Wind (OCS-A 0498)	2024-2025	906	111	111	15.7	28.1
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible
Skipjack (OCS-A 0519)	2024-2030	853	0	33	Not Visible	Not Visible
Garden State (OCS-A 0482)	2023-2030	853	0	80	Not Visible	Not Visible
US Wind (OCS-A 0489 and 0490)	2024	938	0	101	Not Visible	Not Visible
Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	164	164	11.3	27.2
Ocean Wind II (OCS-A 0532)	2026-2030	906	111	111	11.1	36.3
Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
Attentive Energy (OCS-A 0538)	by 2030	853	0	101	Not Visible	Not Visible
Bight Wind Holdings (OCS-A 0539)	by 2030	853	0	148	Not Visible	Not Visible
Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	71	95	37.5	43.0
Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	4	99	41.6	43.0

Key Observation Point Context



Key Observation Point Location

MATCH LINE BC02 PANO #1

MATCH LINE BC02 PANO #1

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

BC02: North Brigantine Natural Area, Brigantine City, Atlantic County, New Jersey

Photosimulation (Panorama 2): Scenario 4: Full buildout of all lease areas without Atlantic Shores South

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

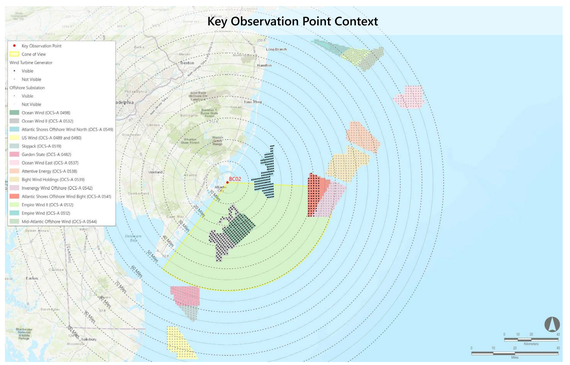
This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Ocean Wind (OCS-A 0498)	2024-2025	906	111	111	15.7	28.1
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible
Skipjack (OCS-A 0519)	2024-2030	853	0	33	Not Visible	Not Visible
Garden State (OCS-A 0482)	2023-2030	853	0	80	Not Visible	Not Visible
US Wind (OCS-A 0489 and 0490)	2024	938	0	101	Not Visible	Not Visible
Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	164	164	11.3	27.2
Ocean Wind II (OCS-A 0532)	2026-2030	906	111	111	11.1	36.3
Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
Attentive Energy (OCS-A 0538)	by 2030	853	0	101	Not Visible	Not Visible
Bight Wind Holdings (OCS-A 0539)	by 2030	853	0	148	Not Visible	Not Visible
Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	71	95	37.5	43.0
Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	4	99	41.6	43.0

Key Observation Point Context



Key Observation Point Location

MATCH LINE BC02 PANO #1

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

BC02: North Brigantine Natural Area, Brigantine City, Atlantic County, New Jersey

Photosimulation (Panorama 2): Scenario 5: Atlantic Shores South without the construction of other foreseeable planned activities

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

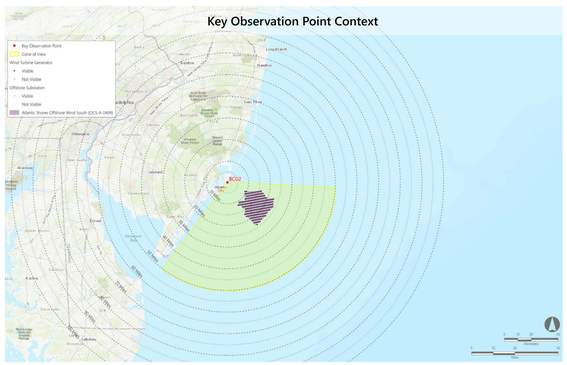
This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	205	205	9.0	23.8

Key Observation Point Context



Key Observation Point Location

BHB03: Holyoke Avenue, Beach Haven Borough, Ocean County, New Jersey

Environmental Data

Date Taken: 03/02/2022
Time: 7:35 AM
Temperature: 37°F
Humidity: 82%
Visibility*: 10+ miles
Wind Direction: Northwest
Wind Speed: 3 mph
Conditions Observed: Fair

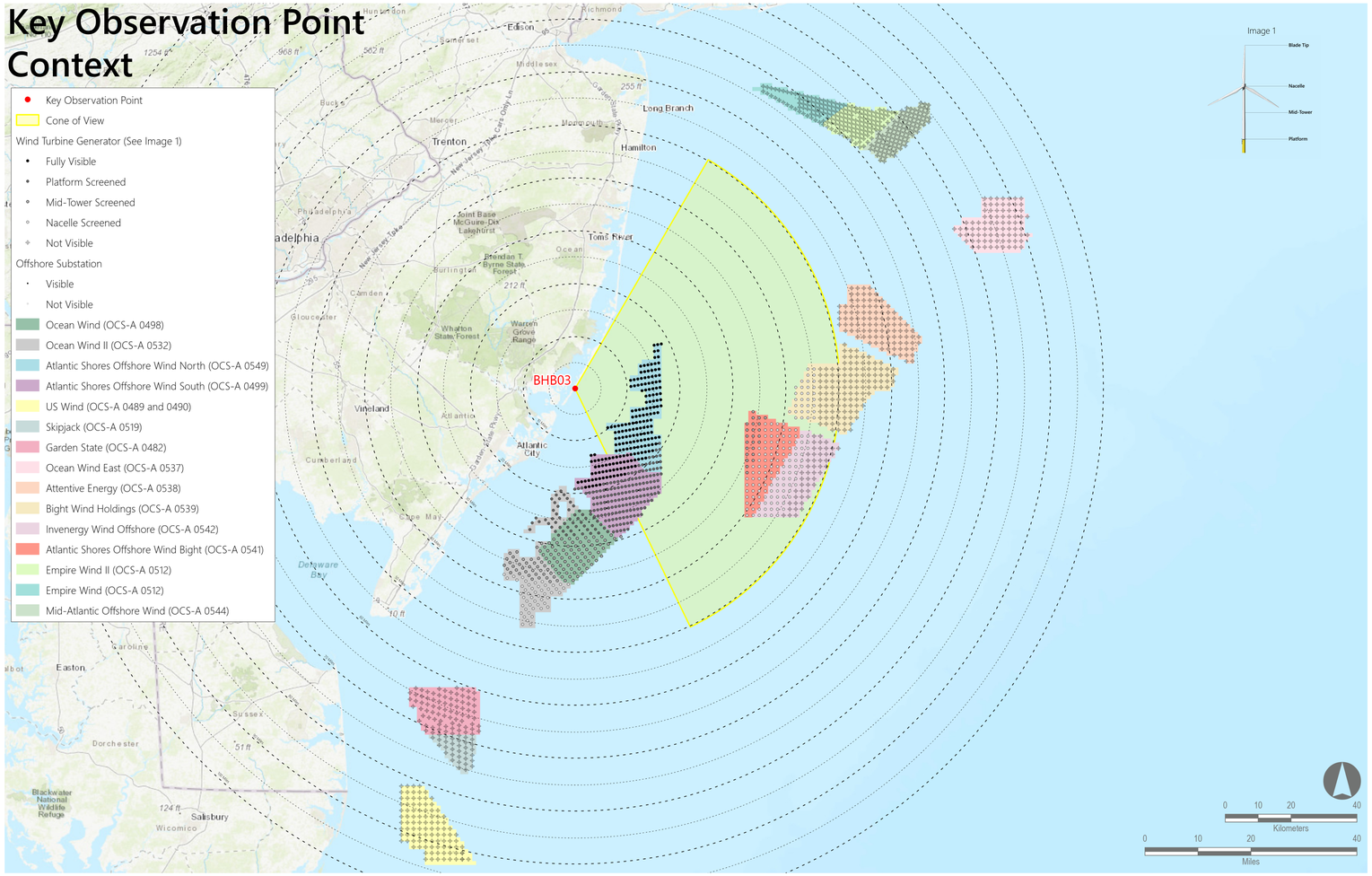
Camera Information
Camera: Canon EOS 5D Mark IV
Resolution: 30.4 Megapixels
Lens Focal Length: 50 mm
Camera Height: 26.85 feet AMSL

Key Observation Point Information

County: Ocean
Town: Beach Haven Borough
State: New Jersey
Location: Holyoke Avenue, Beach Haven
Latitude, Longitude: 39.55262°N, 74.24422°W
Direction of View (Center): East (92.7°)
Field of View: 124° x 55°

Visual Resources
Character Area: Oceanfront Residential, Seascape (SCA)
User Group: Residents/Tourists
Visually Sensitive Resource: Beach Haven Borough Public Beach

Key Observation Point Context



Reasonably Foreseeable Projects Represented in Photosimulation

		Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP**	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Scenario 5	Scenario 2	Atlantic Shores Offshore Wind South (OCS-A 0499)	2025-2027	1,047	205	205	13.0	29.3
Scenario 4	Scenario 1	Ocean Wind (OCS-A 0498)	2023-2025	906	111	111	23.1	36.3
		Empire Wind (OCS-A 0512)	2024-2025	951	0	72	Not Visible	Not Visible
		Empire Wind II (OCS-A 0512)	2023-2027	951	0	104	Not Visible	Not Visible
	Scenario 3	Skipjack (OCS-A 0519)	2024-2030	853	0	33	Not Visible	Not Visible
		Garden State (OCS-A 0482)	2023-2030	853	0	80	Not Visible	Not Visible
		US Wind (OCS-A 0489 and 0490)	2024	938	0	101	Not Visible	Not Visible
		Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	164	164	9.6	22.1
		Ocean Wind II (OCS-A 0532)	2026-2030	906	111	111	19.5	45.6
		Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
		Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
		Attentive Energy (OCS-A 0538)	by 2030	853	0	101	Not Visible	Not Visible
		Bight Wind Holdings (OCS-A 0539)	by 2030	853	32	148	40.8	45.5
		Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	95	95	33.2	42.6
		Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	51	99	41.3	45.5

Notes:

- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- *Historical meteorological data predicts visibility within a limit of 10 statute miles. However, visibility may extend beyond this distance. The photosimulations assume visibility extends to the limit of physical visibility (including a standard refraction index).
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- **The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

ATLANTIC SHORES offshore wind

MATCH LINE BHB03 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

BHB03: Holyoke Avenue, Beach Haven Borough, Ocean County, New Jersey

Existing Conditions (Panorama 1)

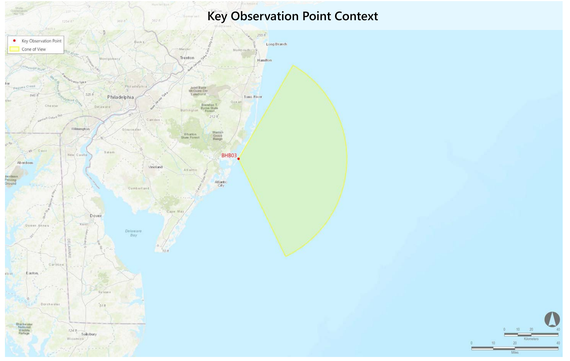
Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This box should measure 1" long on the printed panorama

Key Observation Point Context



Key Observation Point Location

MATCH LINE BHB03 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

BHB03: Holyoke Avenue, Beach Haven Borough, Ocean County, New Jersey

Photosimulation (Panorama 1): Scenario 1: 2023-2025 Project Construction (Ocean Wind, Empire Wind, Empire Wind II)

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

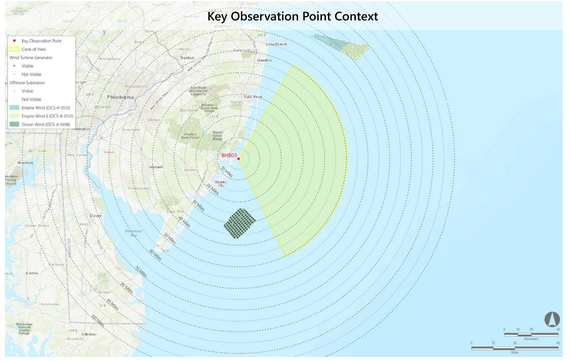
This box should measure 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Ocean Wind (OCS-A 0498)	2024-2025	906	111	111	23.1	36.3
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible

Key Observation Point Context



Key Observation Point Location

MATCH LINE BHB03 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

BHB03: Holyoke Avenue, Beach Haven Borough, Ocean County, New Jersey

Photosimulation (Panorama 1): Scenario 2: Atlantic Shores Construction (2025-2027) added to Scenario 1 (Ocean Wind, Empire Wind, Empire Wind II, Atlantic Shores South)

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

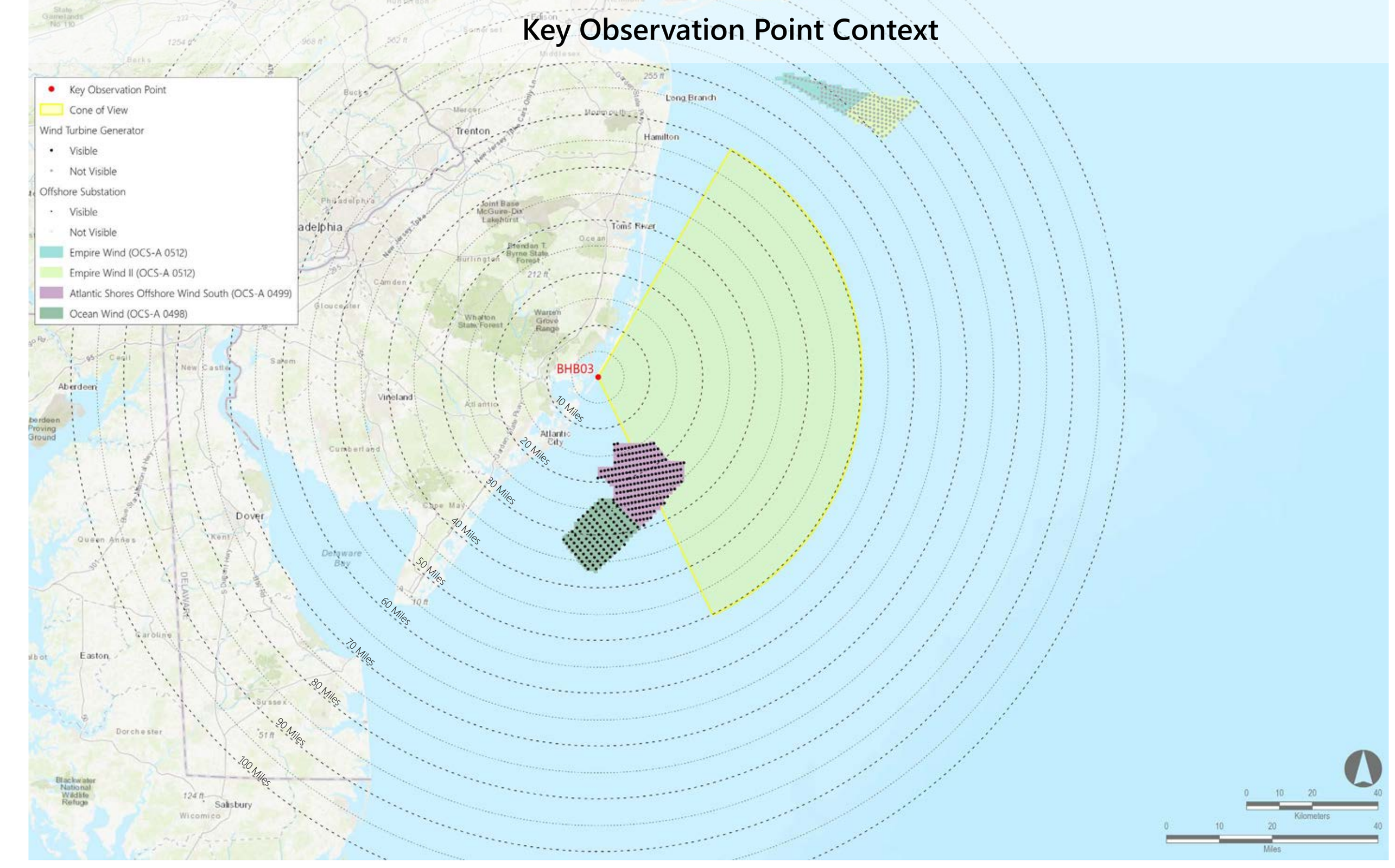
This box should be exactly 1" long on the printed panorama

Notes:

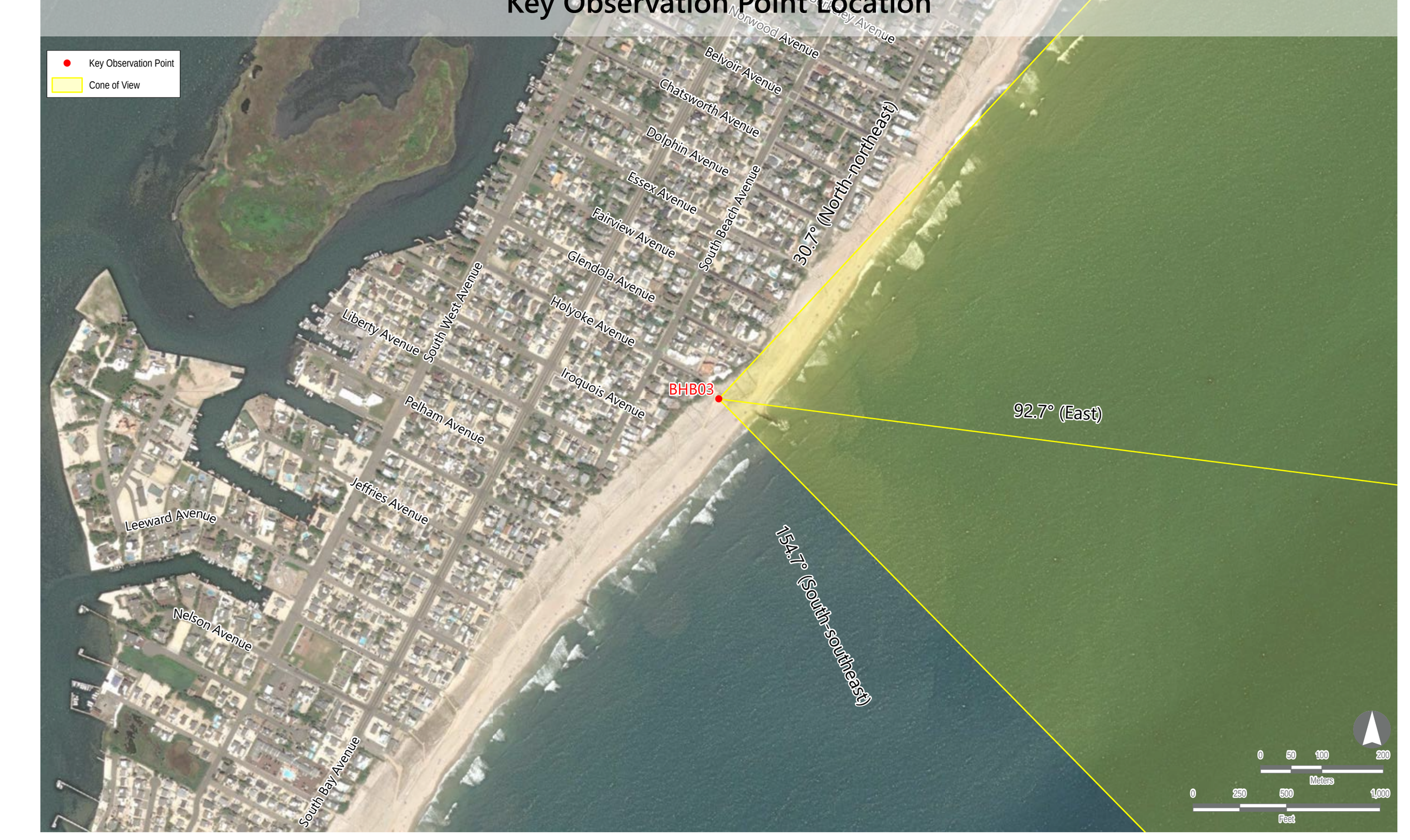
- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	205	205	13.0	29.3
Ocean Wind (OCS-A 0498)	2024-2025	906	111	111	23.1	36.3
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible

Key Observation Point Context



Key Observation Point Location



MATCH LINE BHB03 PANO #2

MATCH LINE BHB03 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

BHB03: Holyoke Avenue, Beach Haven Borough, Ocean County, New Jersey

Photosimulation (Panorama 1): Scenario 3: 2024-2030 Project construction added after the construction of Atlantic Shores South (Full Lease Build-out Including Atlantic Shores South)

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

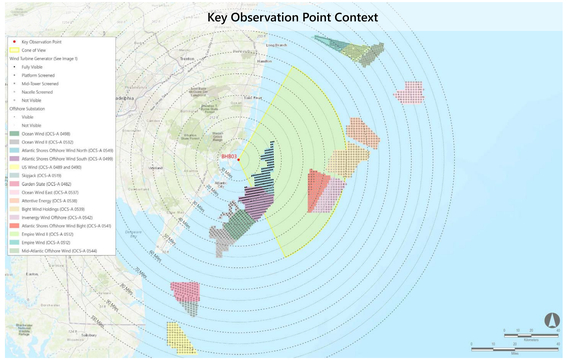
This box should measure 7" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	205	205	13.0	29.3
Ocean Wind (OCS-A 0498)	2024-2025	906	111	111	23.1	36.3
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible
Skipjack (OCS-A 0519)	2024-2030	853	0	33	Not Visible	Not Visible
Garden State (OCS-A 0482)	2023-2030	853	0	80	Not Visible	Not Visible
US Wind (OCS-A 0489 and 0490)	2024	938	0	101	Not Visible	Not Visible
Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	164	164	9.6	22.1
Ocean Wind II (OCS-A 0532)	2026-2030	906	111	111	19.5	45.6
Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
Attentive Energy (OCS-A 0538)	by 2030	853	0	101	Not Visible	Not Visible
Bight Wind Holdings (OCS-A 0539)	by 2030	853	32	148	40.8	45.5
Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	95	95	33.2	42.6
Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	51	99	41.3	45.5

Key Observation Point Context



Key Observation Point Location

MATCH LINE BHB03 PANO #2

MATCH LINE BHB03 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

BHB03: Holyoke Avenue, Beach Haven Borough, Ocean County, New Jersey

Photosimulation (Panorama 1): Scenario 4: Full buildout of all lease areas without Atlantic Shores South

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

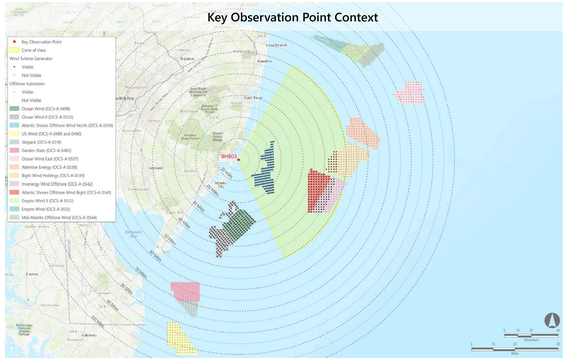
This box should measure 7" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Ocean Wind (OCS-A 0498)	2024-2025	906	111	111	23.1	36.3
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible
Skipjack (OCS-A 0519)	2024-2030	853	0	33	Not Visible	Not Visible
Garden State (OCS-A 0482)	2023-2030	853	0	80	Not Visible	Not Visible
US Wind (OCS-A 0489 and 0490)	2024	938	0	101	Not Visible	Not Visible
Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	164	164	9.6	22.1
Ocean Wind II (OCS-A 0532)	2026-2030	906	111	111	19.5	45.6
Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
Attentive Energy (OCS-A 0538)	by 2030	853	0	101	Not Visible	Not Visible
Bight Wind Holdings (OCS-A 0539)	by 2030	853	32	148	40.8	45.5
Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	95	95	33.2	42.6
Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	51	99	41.3	45.5

Key Observation Point Context



Key Observation Point Location

MATCH LINE BHB03 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

BHB03: Holyoke Avenue, Beach Haven Borough, Ocean County, New Jersey

Photosimulation (Panorama 1): Scenario 5: Atlantic Shores South without the construction of other foreseeable planned activities

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

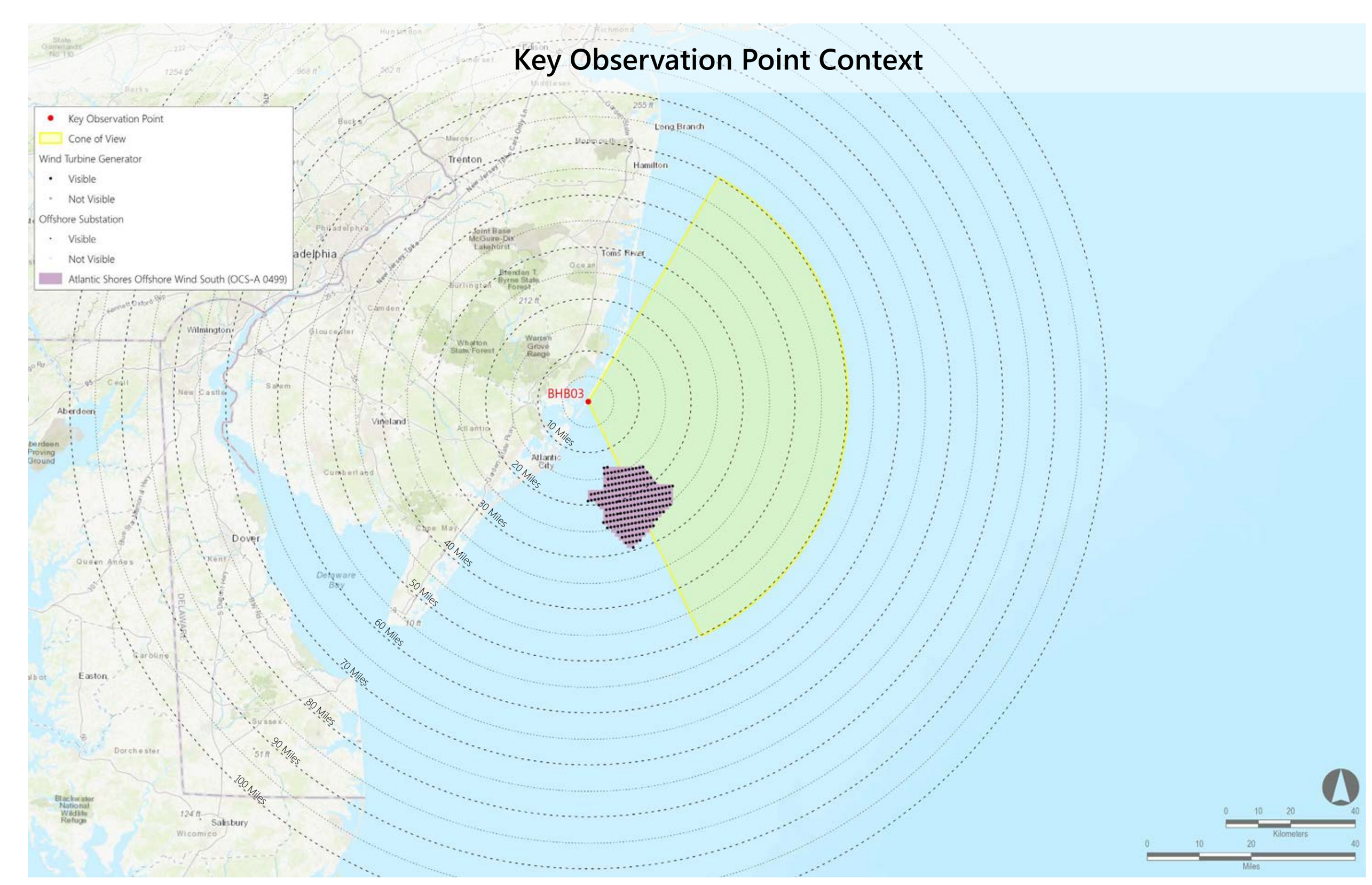
This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	205	205	13.0	29.3

Key Observation Point Context



Key Observation Point Location

BHB03: Holyoke Avenue, Beach Haven Borough, Ocean County, New Jersey

Environmental Data

Date Taken: 03/02/2022
Time: 7:35 AM
Temperature: 37°F
Humidity: 82%
Visibility*: 10+ miles
Wind Direction: Northwest
Wind Speed: 3 mph
Conditions Observed: Fair

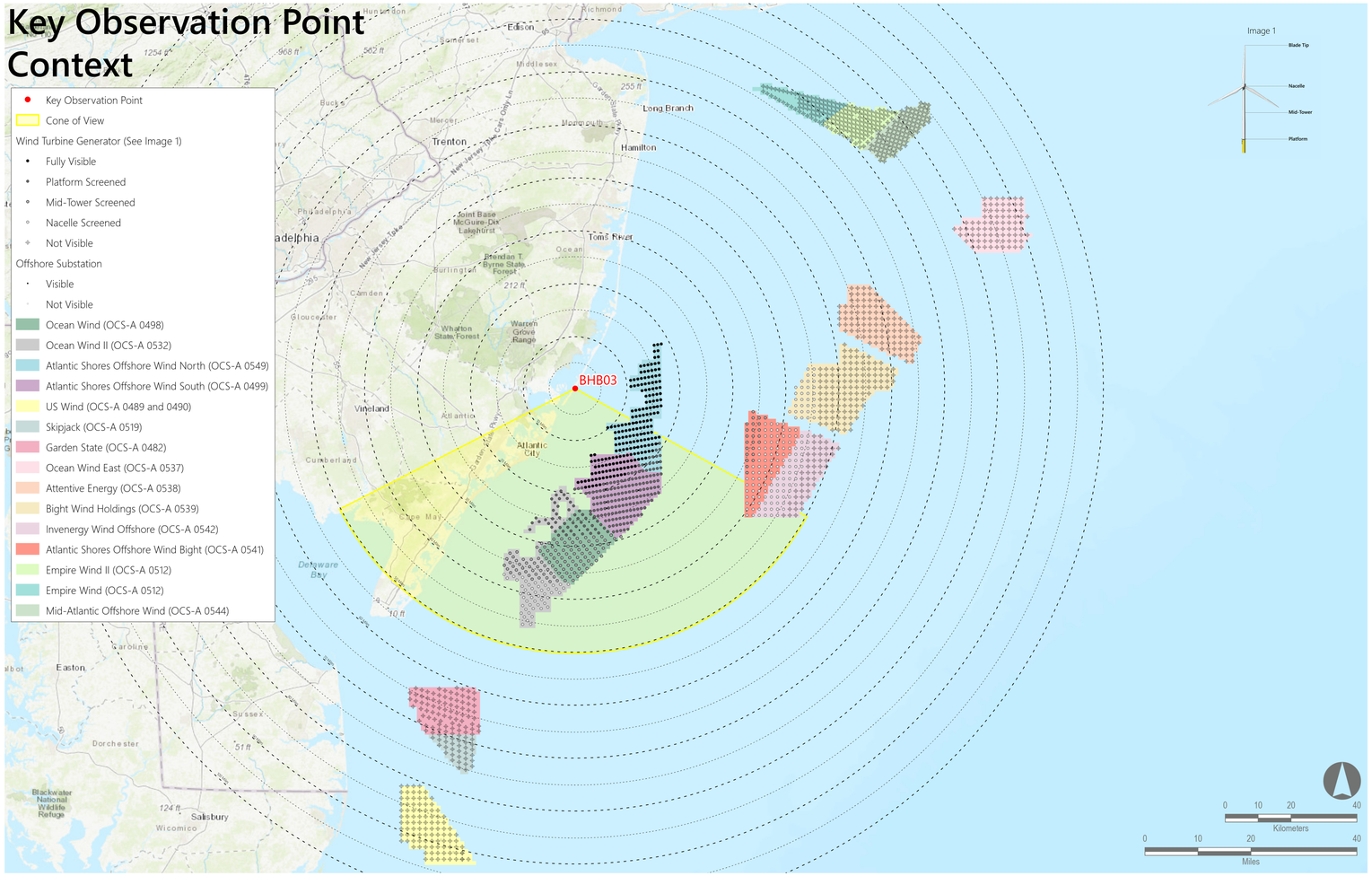
Camera Information
Camera: Canon EOS 5D Mark IV
Resolution: 30.4 Megapixels
Lens Focal Length: 50 mm
Camera Height: 26.85 feet AMSL

Key Observation Point Information

County: Ocean
Town: Beach Haven Borough
State: New Jersey
Location: Holyoke Avenue, Beach Haven
Latitude, Longitude: 39.55262°N, 74.24422°W
Direction of View (Center): South (181.4°)
Field of View: 124° x 55°

Visual Resources
Character Area: Oceanfront Residential, Seascape (SCA)
User Group: Residents/Tourists
Visually Sensitive Resource: Beach Haven Borough Public Beach

Key Observation Point Context



Reasonably Foreseeable Projects Represented in Photosimulation

		Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP**	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Scenario 5	Scenario 2	Atlantic Shores Offshore Wind South (OCS-A 0499)	2025-2027	1,047	205	205	13.0	29.3
Scenario 4	Scenario 1	Ocean Wind (OCS-A 0498)	2023-2025	906	111	111	23.1	36.3
		Empire Wind (OCS-A 0512)	2024-2025	951	0	72	Not Visible	Not Visible
		Empire Wind II (OCS-A 0512)	2023-2027	951	0	104	Not Visible	Not Visible
	Scenario 3	Skipjack (OCS-A 0519)	2024-2030	853	0	33	Not Visible	Not Visible
		Garden State (OCS-A 0482)	2023-2030	853	0	80	Not Visible	Not Visible
		US Wind (OCS-A 0489 and 0490)	2024	938	0	101	Not Visible	Not Visible
		Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	164	164	9.6	22.1
		Ocean Wind II (OCS-A 0532)	2026-2030	906	111	111	19.5	45.6
		Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
		Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
		Attentive Energy (OCS-A 0538)	by 2030	853	0	101	Not Visible	Not Visible
		Bight Wind Holdings (OCS-A 0539)	by 2030	853	32	148	40.8	45.5
		Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	95	95	33.2	42.6
		Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	51	99	41.3	45.5

Notes:

- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- *Historical meteorological data predicts visibility within a limit of 10 statute miles. However, visibility may extend beyond this distance. The photosimulations assume visibility extends to the limit of physical visibility (including a standard refraction index).
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- **The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

MATCH LINE BHB03 PANO #1

MATCH LINE BHB03 PANO #1

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

BHB03: Holyoke Avenue, Beach Haven Borough, Ocean County, New Jersey

Existing Conditions (Panorama 2)

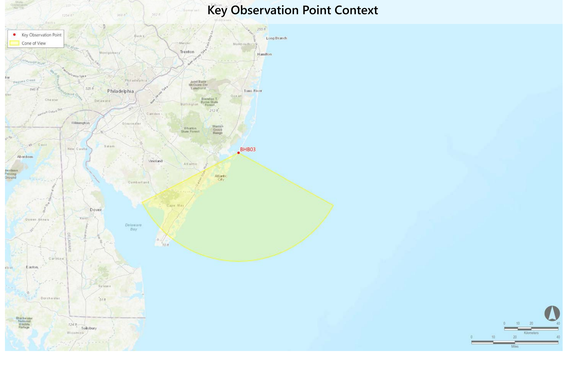
Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.

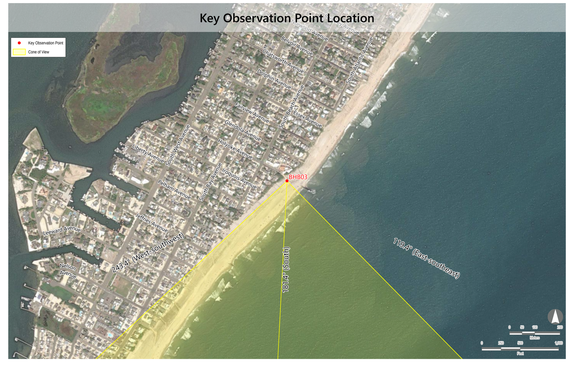
Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This box should be exactly 1" long on the printed panorama

Key Observation Point Context



Key Observation Point Location



MATCH LINE BHB03 PANO #1

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

BHB03: Holyoke Avenue, Beach Haven Borough, Ocean County, New Jersey

Photosimulation (Panorama 2): Scenario 1: 2023-2025 Project Construction (Ocean Wind, Empire Wind, Empire Wind II)

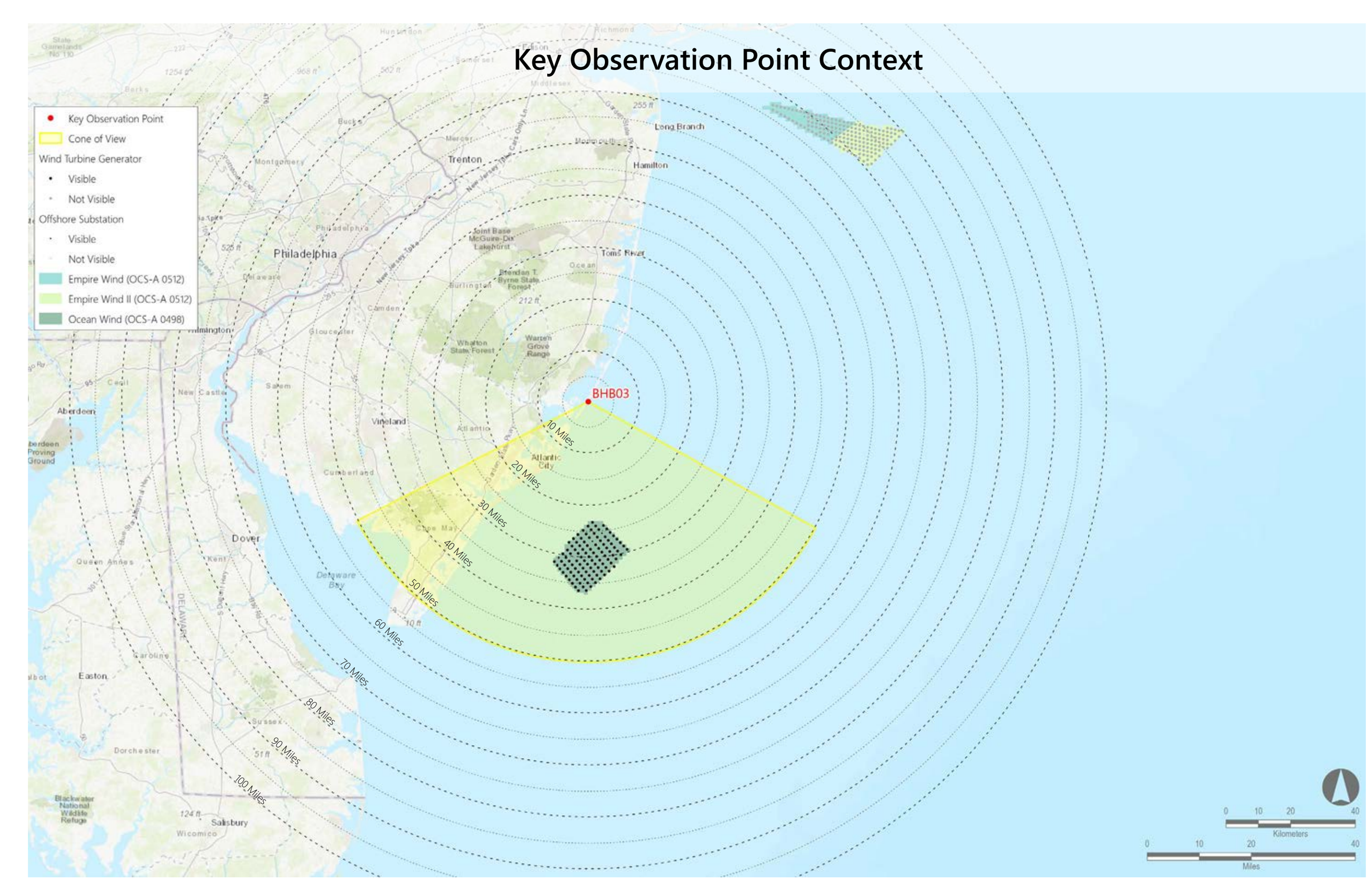
Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Ocean Wind (OCS-A 0498)	2024-2025	906	111	111	23.1	36.3
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible



MATCH LINE BHB03 PANO #1

MATCH LINE BHB03 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

BHB03: Holyoke Avenue, Beach Haven Borough, Ocean County, New Jersey

Photosimulation (Panorama 2): Scenario 2: Atlantic Shores Construction (2025-2027) added to Scenario 1 (Ocean Wind, Empire Wind, Empire Wind II, Atlantic Shores South)

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

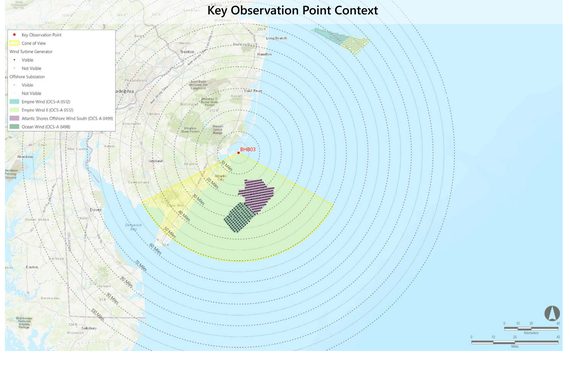
This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	205	205	13.0	29.3
Ocean Wind (OCS-A 0498)	2024-2025	906	111	111	23.1	36.3
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible

Key Observation Point Context



Key Observation Point Location

MATCH LINE BHB03 PANO #1

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

BHB03: Holyoke Avenue, Beach Haven Borough, Ocean County, New Jersey

Photosimulation (Panorama 2): Scenario 3: 2024-2030 Project construction added after the construction of Atlantic Shores South (Full Lease Build-out Including Atlantic Shores South)

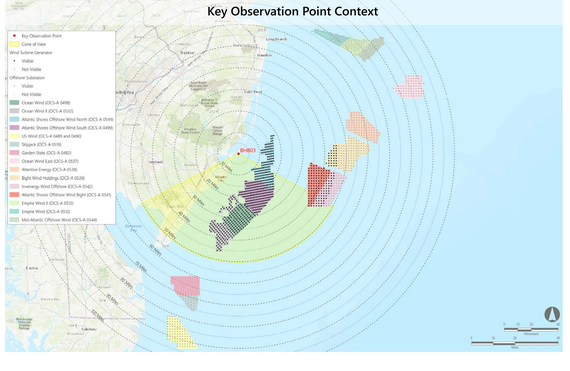
Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	205	205	13.0	29.3
Ocean Wind (OCS-A 0498)	2024-2025	906	111	111	23.1	36.3
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible
Skipjack (OCS-A 0519)	2024-2030	853	0	33	Not Visible	Not Visible
Garden State (OCS-A 0482)	2023-2030	853	0	80	Not Visible	Not Visible
US Wind (OCS-A 0489 and 0490)	2024	938	0	101	Not Visible	Not Visible
Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	164	164	9.6	22.1
Ocean Wind II (OCS-A 0532)	2026-2030	906	111	111	19.5	45.6
Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
Attentive Energy (OCS-A 0538)	by 2030	853	0	101	Not Visible	Not Visible
Bight Wind Holdings (OCS-A 0539)	by 2030	853	32	148	40.8	45.5
Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	95	95	33.2	42.6
Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	51	99	41.3	45.5



MATCH LINE BHB03 PANO #1

MATCH LINE BHB03 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

BHB03: Holyoke Avenue, Beach Haven Borough, Ocean County, New Jersey

Photosimulation (Panorama 2): Scenario 4: Full buildout of all lease areas without Atlantic Shores South

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

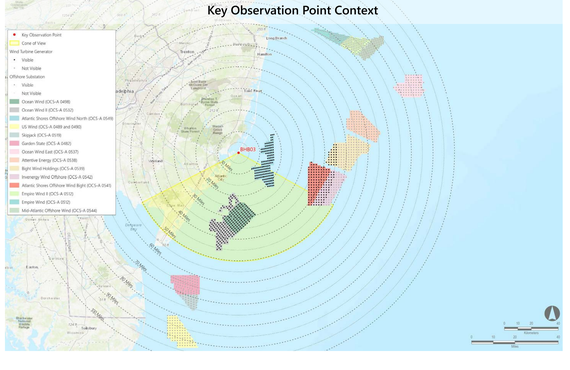
This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Ocean Wind (OCS-A 0498)	2024-2025	906	111	111	23.1	36.3
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible
Skipjack (OCS-A 0519)	2024-2030	853	0	33	Not Visible	Not Visible
Garden State (OCS-A 0482)	2023-2030	853	0	80	Not Visible	Not Visible
US Wind (OCS-A 0489 and 0490)	2024	938	0	101	Not Visible	Not Visible
Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	164	164	9.6	22.1
Ocean Wind II (OCS-A 0532)	2026-2030	906	111	111	19.5	45.6
Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
Attentive Energy (OCS-A 0538)	by 2030	853	0	101	Not Visible	Not Visible
Bight Wind Holdings (OCS-A 0539)	by 2030	853	32	148	40.8	45.5
Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	95	95	33.2	42.6
Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	51	99	41.3	45.5

Key Observation Point Context



Key Observation Point Location

MATCH LINE BHB03 PANO #1

MATCH LINE BHB03 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

BHB03: Holyoke Avenue, Beach Haven Borough, Ocean County, New Jersey

Photosimulation (Panorama 2): Scenario 5: Atlantic Shores South without the construction of other foreseeable planned activities

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	205	205	13.0	29.3

LEHT02: Great Bay Boulevard WMA/ Rutgers Field Station, Little Egg Harbor Township, Ocean County, New Jersey

Environmental Data

Date Taken: 09/22/2020
Time: 8:32 AM
Temperature: 59°F
Humidity: 49%
Visibility*: 10+ miles
Wind Direction: North-northwest
Wind Speed: 12 mph
Conditions Observed: Fair

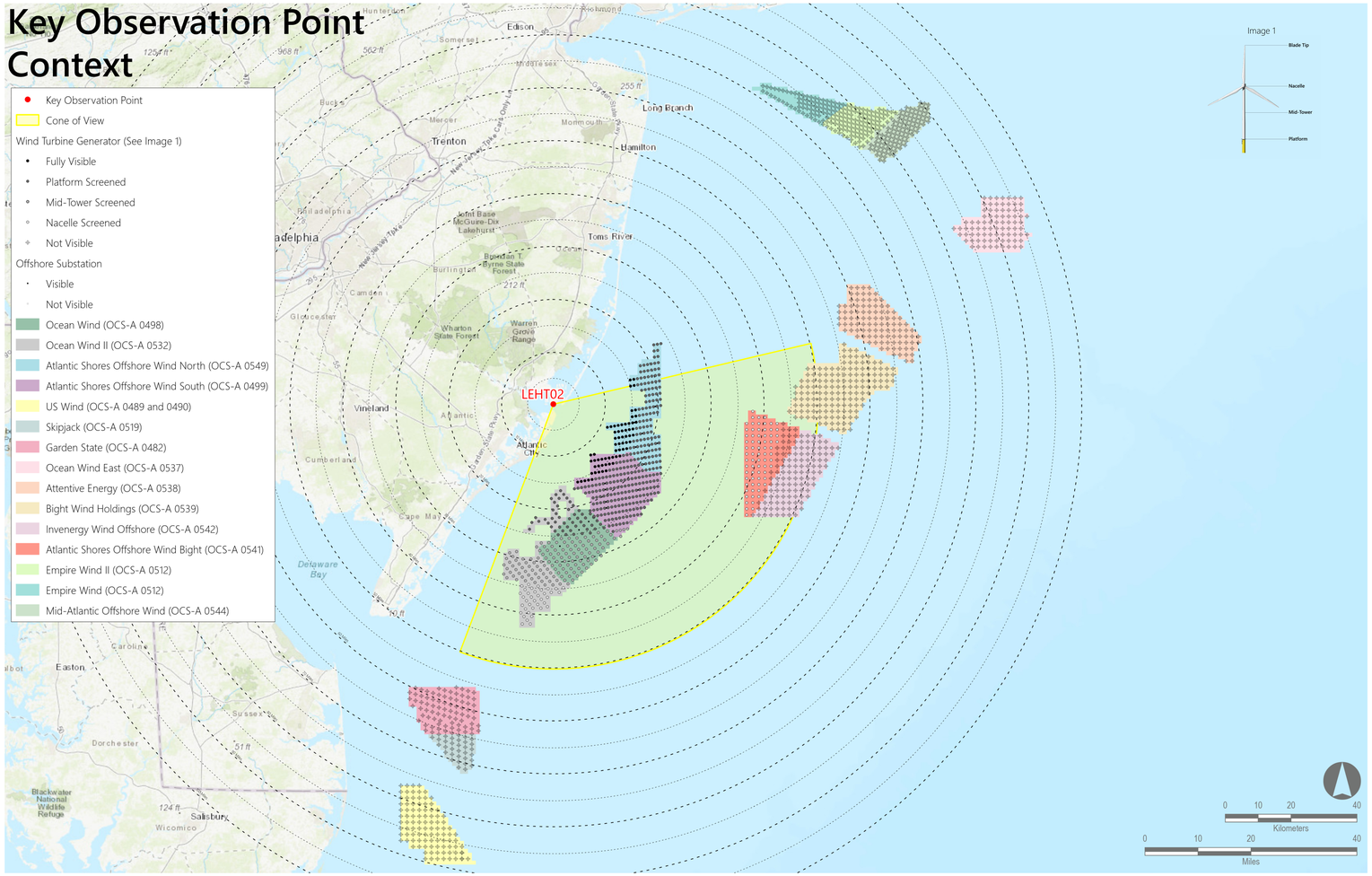
Camera Information
Camera: Canon EOS 5D Mark IV
Resolution: 30.4 Megapixels
Lens Focal Length: 50 mm
Camera Height: 10.00 feet AMSL

Key Observation Point Information

County: Ocean
Town: Little Egg Harbor
State: New Jersey
Location: North Brigantine Natural Area
Latitude, Longitude: 39.50913°N, 74.32038°W
Direction of View (Center): Southeast (139.1°)
Field of View: 124° x 55°

Visual Resources
Character Area: Salt Marsh (LCA)
User Group: Residents/Tourists, Fishermen
Visually Sensitive Resource: Great Bay Boulevard Wildlife Management Area, Little Egg Harbor US Life Saving Station #23

Key Observation Point Context



Reasonably Foreseeable Projects Represented in Photosimulation

		Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP**	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Scenario 5	Scenario 2	Atlantic Shores Offshore Wind South (OCS-A 0499)	2025-2027	1,047	205	205	11.9	28.0
Scenario 4	Scenario 1	Ocean Wind (OCS-A 0498)	2023-2025	906	93	111	20.7	33.4
		Empire Wind (OCS-A 0512)	2024-2025	951	0	72	Not Visible	Not Visible
		Empire Wind II (OCS-A 0512)	2023-2027	951	0	104	Not Visible	Not Visible
	Scenario 3	Skipjack (OCS-A 0519)	2024-2030	853	0	33	Not Visible	Not Visible
		Garden State (OCS-A 0482)	2023-2030	853	0	80	Not Visible	Not Visible
		US Wind (OCS-A 0489 and 0490)	2024	938	0	101	Not Visible	Not Visible
		Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	131	164	11.1	23.5
		Ocean Wind II (OCS-A 0532)	2026-2030	906	41	111	16.4	41.9
		Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
		Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
		Attentive Energy (OCS-A 0538)	by 2030	853	0	101	Not Visible	Not Visible
		Bight Wind Holdings (OCS-A 0539)	by 2030	853	0	148	Not Visible	Not Visible
		Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	5	95	36.7	42.9
		Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	0	99	Not Visible	Not Visible

Notes:

- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- *Historical meteorological data predicts visibility within a limit of 10 statute miles. However, visibility may extend beyond this distance. The photosimulations assume visibility extends to the limit of physical visibility (including a standard refraction index).
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- **The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

LEHT02: Great Bay Boulevard WMA/Rutgers Field Station, Little Egg Harbor Township, Ocean County, New Jersey

Existing Conditions (Panorama 1)

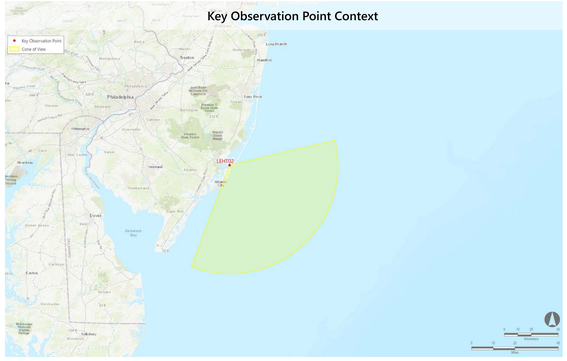
Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.

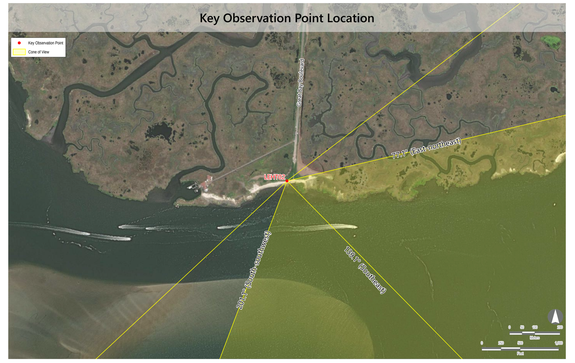
Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This box should be exactly 1" long on the printed panorama

Key Observation Point Context



Key Observation Point Location



ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

LEHT02: Great Bay Boulevard WMA/Rutgers Field Station, Little Egg Harbor Township, Ocean County, New Jersey

Photosimulation (Panorama 1): Scenario 1: 2023-2025 Project Construction (Ocean Wind, Empire Wind, Empire Wind II)

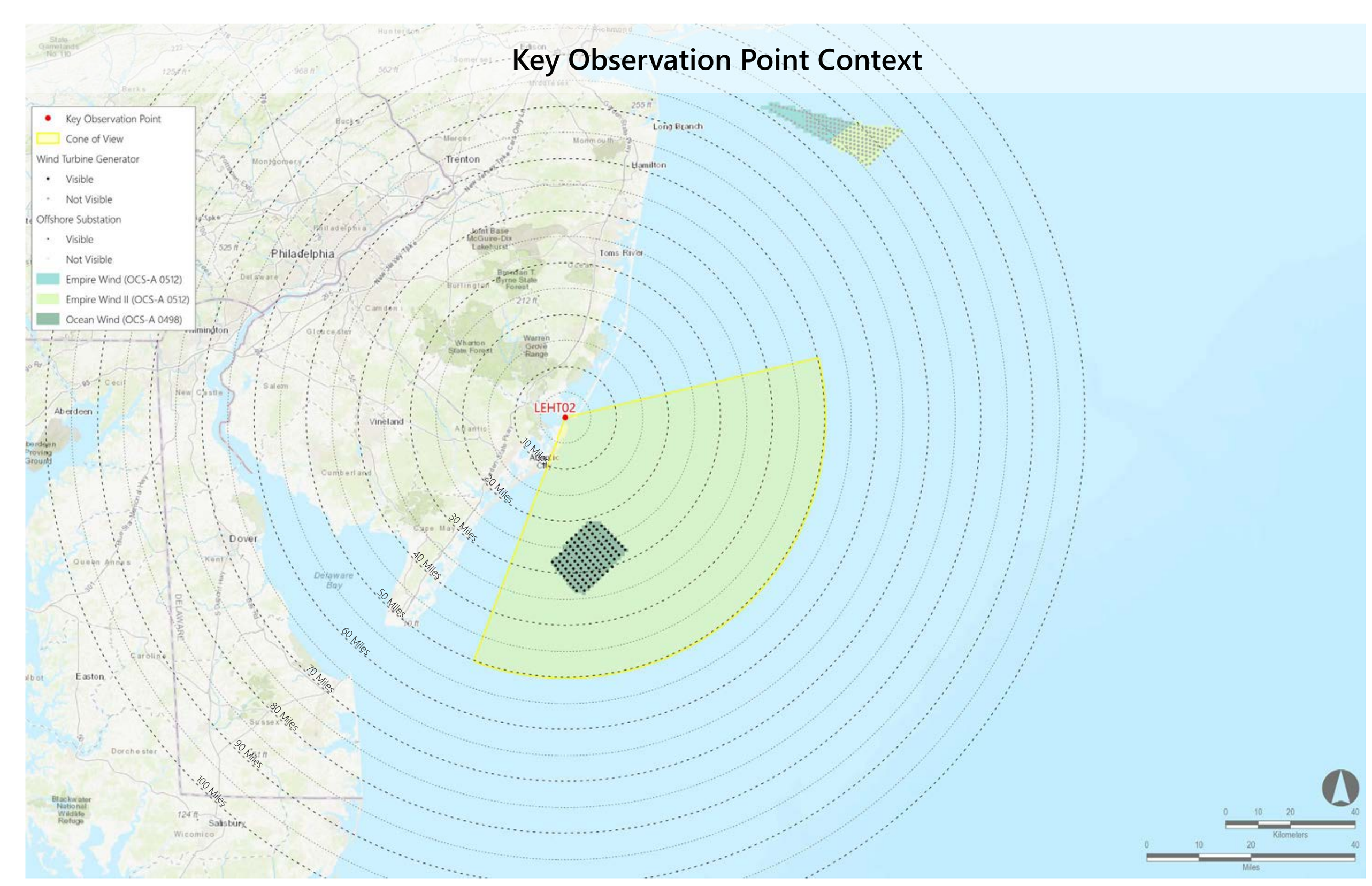
Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

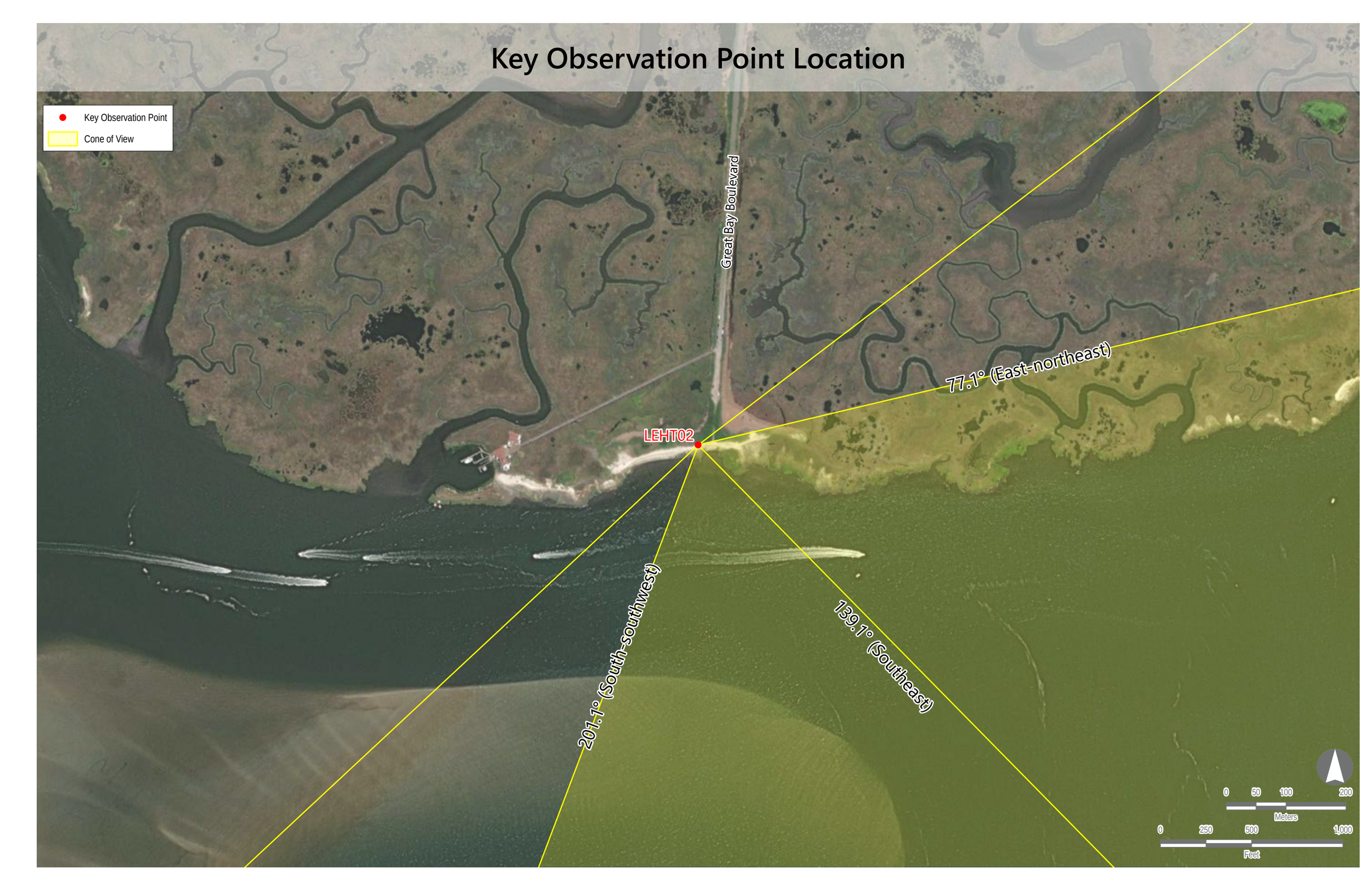
This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Ocean Wind (OCS-A 0498)	2024-2025	906	93	111	20.7	33.4
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible





ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

LEHT02: Great Bay Boulevard WMA/Rutgers Field Station, Little Egg Harbor Township, Ocean County, New Jersey

Photosimulation (Panorama 1): Scenario 2: Atlantic Shores Construction (2025-2027) added to Scenario 1 (Ocean Wind, Empire Wind, Empire Wind II, Atlantic Shores South)

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

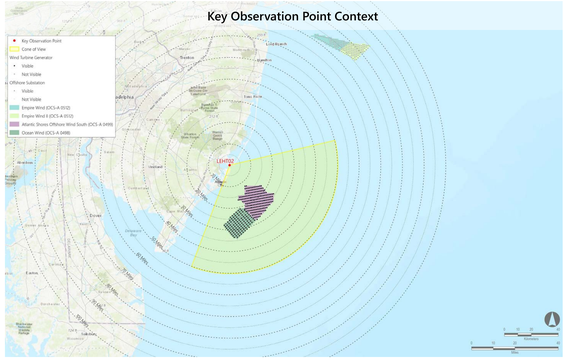
This box should be exactly 7" long on the printed panorama

Notes:

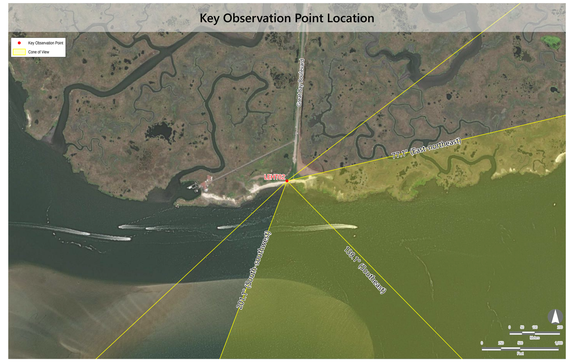
- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	205	205	11.9	28.0
Ocean Wind (OCS-A 0498)	2024-2025	906	93	111	20.7	33.4
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible

Key Observation Point Context



Key Observation Point Location



ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

LEHT02: Great Bay Boulevard WMA/Rutgers Field Station, Little Egg Harbor Township, Ocean County, New Jersey

Photosimulation (Panorama 1): Scenario 3: 2024-2030 Project construction added after the construction of Atlantic Shores South (Full Lease Build-out Including Atlantic Shores South)

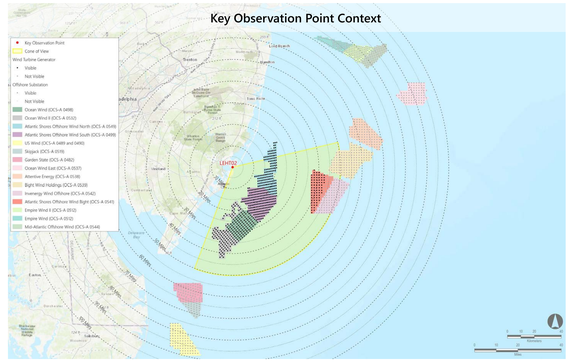
Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

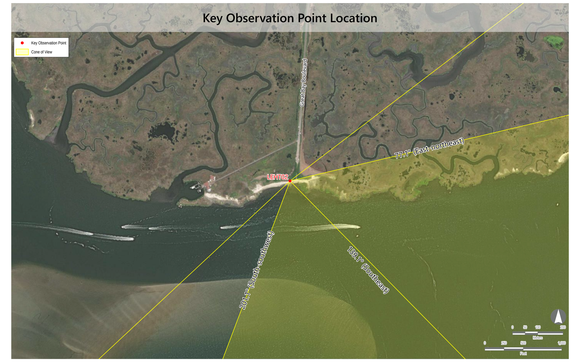
This line should be exactly 7" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	205	205	11.9	28.0
Ocean Wind (OCS-A 0498)	2024-2025	906	93	111	20.7	33.4
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible
Skipjack (OCS-A 0519)	2024-2030	853	0	33	Not Visible	Not Visible
Garden State (OCS-A 0482)	2023-2030	853	0	80	Not Visible	Not Visible
US Wind (OCS-A 0489 and 0490)	2024	938	0	101	Not Visible	Not Visible
Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	131	164	11.1	23.5
Ocean Wind II (OCS-A 0532)	2026-2030	906	41	111	16.4	41.9
Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
Attentive Energy (OCS-A 0538)	by 2030	853	0	101	Not Visible	Not Visible
Bight Wind Holdings (OCS-A 0539)	by 2030	853	0	148	Not Visible	Not Visible
Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	5	95	36.7	42.9
Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	0	99	Not Visible	Not Visible





ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

LEHT02: Great Bay Boulevard WMA/Rutgers Field Station, Little Egg Harbor Township, Ocean County, New Jersey

Photosimulation (Panorama 1): Scenario 4: Full buildout of all lease areas without Atlantic Shores South

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

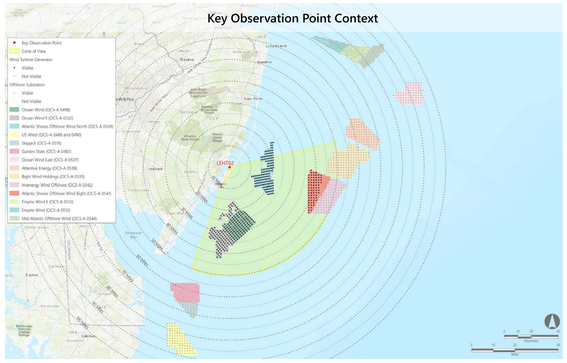
This line should be exactly 7" long on the printed panorama

Notes:

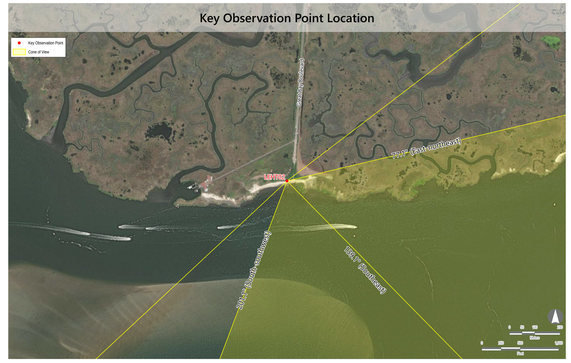
- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 7023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Ocean Wind (OCS-A 0498)	2024-2025	906	93	111	20.7	33.4
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible
Skipjack (OCS-A 0519)	2024-2030	853	0	33	Not Visible	Not Visible
Garden State (OCS-A 0482)	2023-2030	853	0	80	Not Visible	Not Visible
US Wind (OCS-A 0489 and 0490)	2024	938	0	101	Not Visible	Not Visible
Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	131	164	11.1	23.5
Ocean Wind II (OCS-A 0532)	2026-2030	906	41	111	16.4	41.9
Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
Attentive Energy (OCS-A 0538)	by 2030	853	0	101	Not Visible	Not Visible
Bight Wind Holdings (OCS-A 0539)	by 2030	853	0	148	Not Visible	Not Visible
Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	5	95	36.7	42.9
Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	0	99	Not Visible	Not Visible

Key Observation Point Context



Key Observation Point Location



ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

LEHT02: Great Bay Boulevard WMA/Rutgers Field Station, Little Egg Harbor Township, Ocean County, New Jersey

Photosimulation (Panorama 1): Scenario 5: Atlantic Shores South without the construction of other foreseeable planned activities

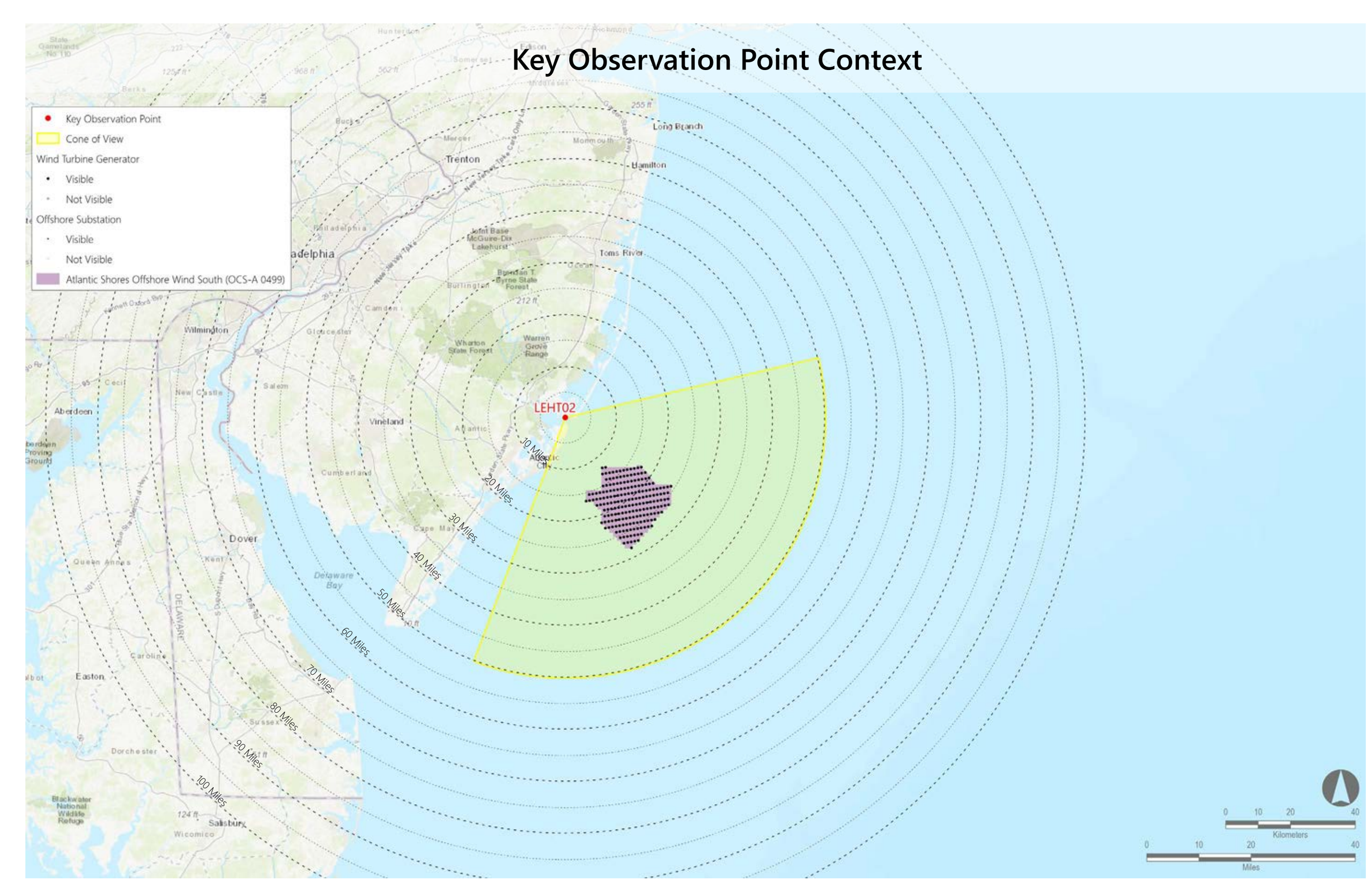
Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

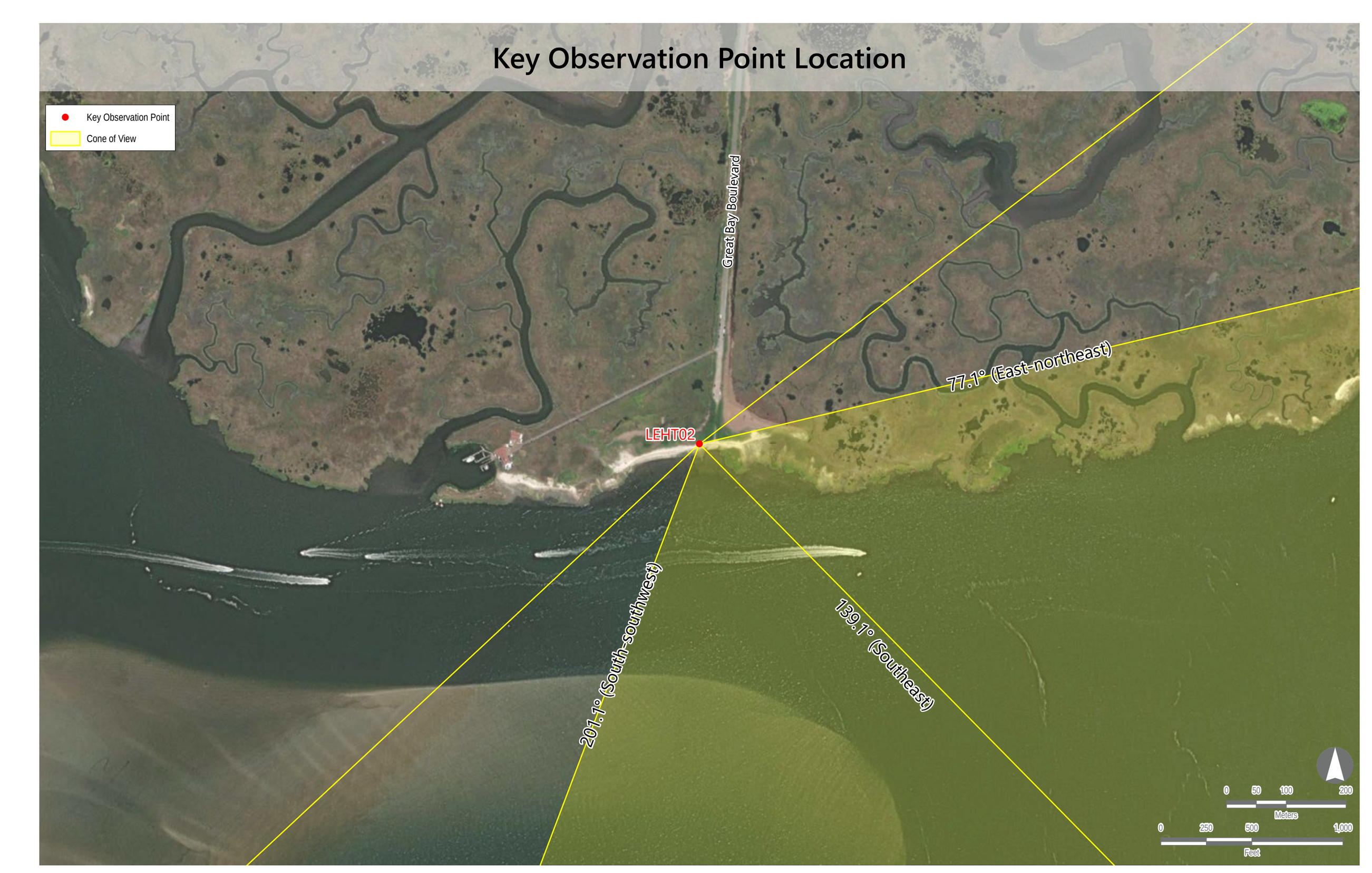
This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	205	205	11.9	28.0





LT02: Cape May Point State Park, Lower Township, Cape May County, New Jersey

Environmental Data

Date Taken: 08/20/2020
Time: 9:32 AM
Temperature: 76°F
Humidity: 67%
Visibility*: 10+ miles
Wind Direction: North-northeast
Wind Speed: 7 mph
Conditions Observed: Fair

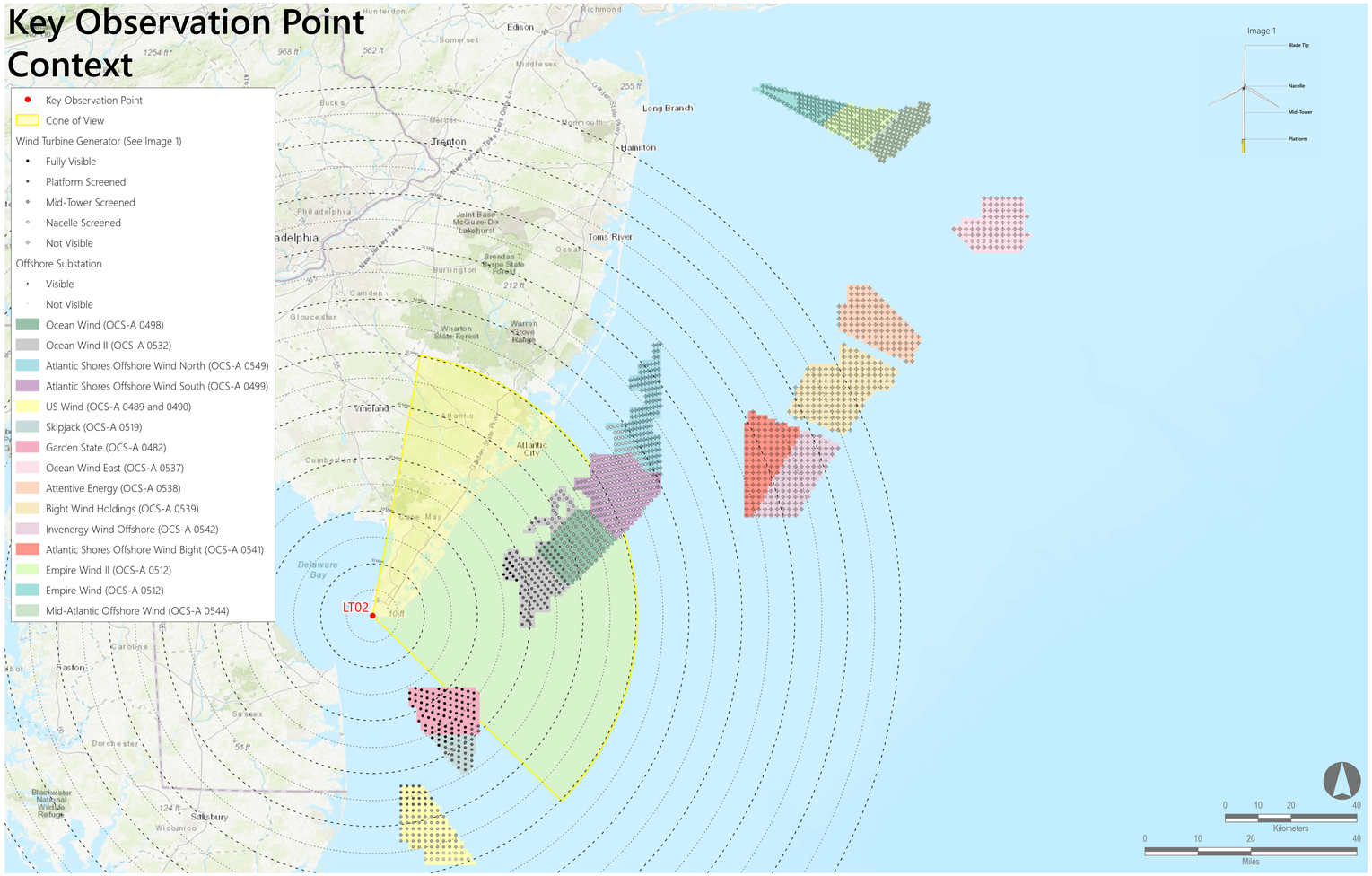
Camera Information
Camera: Canon EOS 5D Mark IV
Resolution: 30.4 Megapixels
Lens Focal Length: 50 mm
Camera Height: 150.10 feet AMSL

Key Observation Point Information

County: Cape May
Town: Lower
State: New Jersey
Location: Cape May Point State Park
Latitude, Longitude: 38.93299°N, 74.96036°W
Direction of View (Center): East-northeast (72.4°)
Field of View: 124° x 55°

Visual Resources
Character Area: Recreation, Seascape (SCA)
User Group: Residents/Tourists
Visually Sensitive Resource: Cape May Point State Park, Cape May Point State Park - Fishing Access, Cape May Point Borough Beach, Cape May Lighthouse, Bayshore Heritage Scenic Byway

Key Observation Point Context



Reasonably Foreseeable Projects Represented in Photosimulation

		Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP**	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Scenario 5	Scenario 2	Atlantic Shores Offshore Wind South (OCS-A 0499)	2025-2027	1,047	145	205	45.0	58.9
Scenario 4	Scenario 1	Ocean Wind (OCS-A 0498)	2023-2025	906	105	111	33.9	47.9
		Empire Wind (OCS-A 0512)	2024-2025	951	0	72	Not Visible	Not Visible
		Empire Wind II (OCS-A 0512)	2023-2027	951	0	104	Not Visible	Not Visible
	Scenario 3	Skipjack (OCS-A 0519)	2024-2030	853	33	33	25.7	34.1
		Garden State (OCS-A 0482)	2023-2030	853	80	80	15.9	29.6
		US Wind (OCS-A 0489 and 0490)	2024	938	98	101	32.6	49.4
		Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	13	164	55.5	59.0
		Ocean Wind II (OCS-A 0532)	2026-2030	906	111	111	26.0	43.2
		Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
		Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
		Attentive Energy (OCS-A 0538)	by 2030	853	0	101	Not Visible	Not Visible
		Bight Wind Holdings (OCS-A 0539)	by 2030	853	0	148	Not Visible	Not Visible
		Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	0	95	Not Visible	Not Visible
		Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	0	99	Not Visible	Not Visible

Notes:

- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- *Historical meteorological data predicts visibility within a limit of 10 statute miles. However, visibility may extend beyond this distance. The photosimulations assume visibility extends to the limit of physical visibility (including a standard refraction index).
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- **The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

ATLANTIC SHORES offshore wind

MATCH LINE** LT02 PANO #2

MATCH LINE** LT02 PANO #3

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

LT02: Cape May Point State Park, Lower Township, Cape May County, New Jersey

Existing Conditions (Panorama 1)

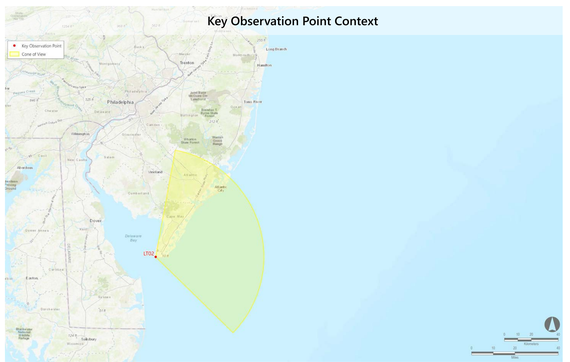
Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This box should be exactly 1" long on the printed panorama

Key Observation Point Context



Key Observation Point Location

MATCH LINE** LT02 PANO #2

MATCH LINE** LT02 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

LT02: Cape May Point State Park, Lower Township, Cape May County, New Jersey

Photosimulation (Panorama 1): Scenario 1: 2023-2025 Project Construction (Ocean Wind, Empire Wind, Empire Wind II)

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

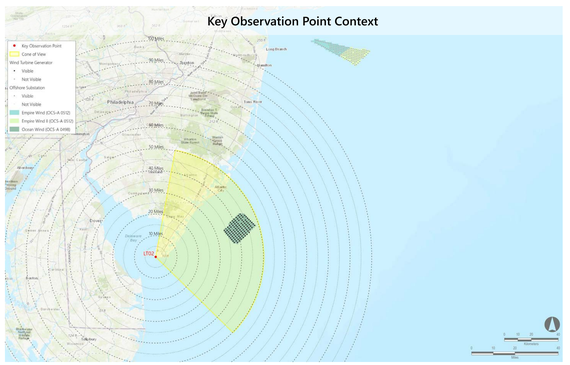
This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Ocean Wind (OCS-A 0498)	2024-2025	906	105	111	33.9	47.9
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible

Key Observation Point Context



Key Observation Point Location

MATCH LINE** LT02 PANO #2

MATCH LINE** LT02 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

LT02: Cape May Point State Park, Lower Township, Cape May County, New Jersey

Photosimulation (Panorama 1): Scenario 2: Atlantic Shores Construction (2025-2027) added to Scenario 1 (Ocean Wind, Empire Wind, Empire Wind II, Atlantic Shores South)

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

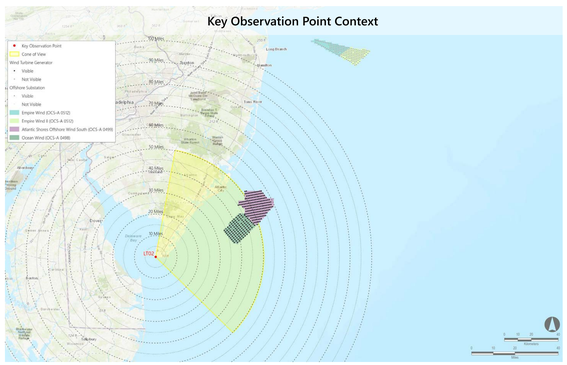
This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	145	205	45.0	58.9
Ocean Wind (OCS-A 0498)	2024-2025	906	105	111	33.9	47.9
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible

Key Observation Point Context



Key Observation Point Location

MATCH LINE** LT02 PANO #2

MATCH LINE** LT02 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

LT02: Cape May Point State Park, Lower Township, Cape May County, New Jersey

Photosimulation (Panorama 1): Scenario 3: 2024-2030 Project construction added after the construction of Atlantic Shores South (Full Lease Build-out Including Atlantic Shores South)

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

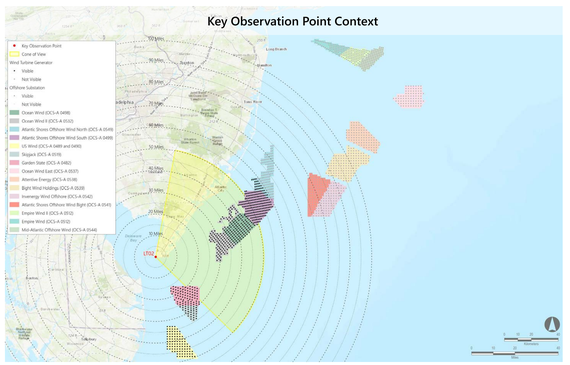
This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	145	205	45.0	58.9
Ocean Wind (OCS-A 0498)	2024-2025	906	105	111	33.9	47.9
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible
Skipjack (OCS-A 0519)	2024-2030	853	33	33	25.7	34.1
Garden State (OCS-A 0482)	2023-2030	853	80	80	15.9	29.6
US Wind (OCS-A 0489 and 0490)	2024	938	98	101	32.6	49.4
Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	13	164	55.5	59.0
Ocean Wind II (OCS-A 0532)	2026-2030	906	111	111	26.0	43.2
Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
Attentive Energy (OCS-A 0538)	by 2030	853	0	101	Not Visible	Not Visible
Bight Wind Holdings (OCS-A 0539)	by 2030	853	0	148	Not Visible	Not Visible
Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	0	95	Not Visible	Not Visible
Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	0	99	Not Visible	Not Visible

Key Observation Point Context



Key Observation Point Location

MATCH LINE** LT02 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

LT02: Cape May Point State Park, Lower Township, Cape May County, New Jersey

Photosimulation (Panorama 1): Scenario 4: Full buildout of all lease areas without Atlantic Shores South

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

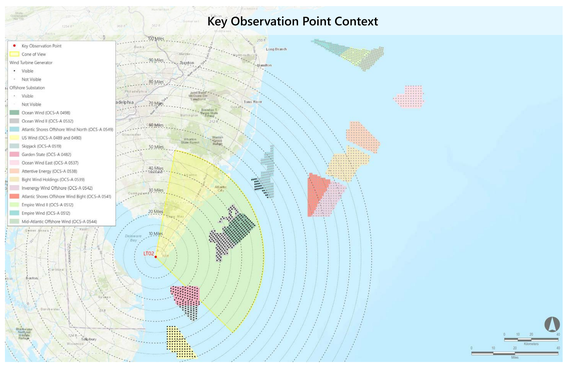
This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Ocean Wind (OCS-A 0498)	2024-2025	906	105	111	33.9	47.9
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible
Skipjack (OCS-A 0519)	2024-2030	853	33	33	25.7	34.1
Garden State (OCS-A 0482)	2023-2030	853	80	80	15.9	29.6
US Wind (OCS-A 0489 and 0490)	2024	938	98	101	32.6	49.4
Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	13	164	55.5	59.0
Ocean Wind II (OCS-A 0532)	2026-2030	906	111	111	26.0	43.2
Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
Attentive Energy (OCS-A 0538)	by 2030	853	0	101	Not Visible	Not Visible
Bight Wind Holdings (OCS-A 0539)	by 2030	853	0	148	Not Visible	Not Visible
Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	0	95	Not Visible	Not Visible
Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	0	99	Not Visible	Not Visible

Key Observation Point Context



Key Observation Point Location

MATCH LINE** LT02 PANO #2

MATCH LINE** LT02 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

LT02: Cape May Point State Park, Lower Township, Cape May County, New Jersey

Photosimulation (Panorama 1): Scenario 5: Atlantic Shores South without the construction of other foreseeable planned activities

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

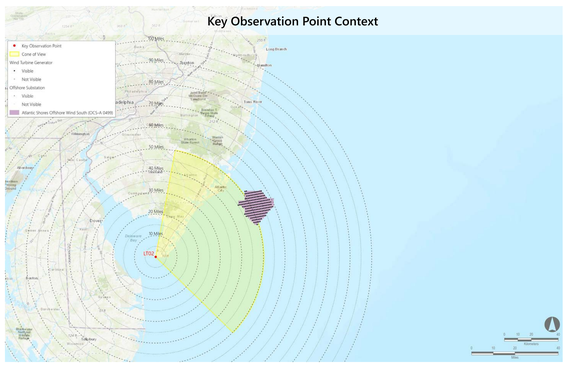
This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	145	205	45.0	58.9

Key Observation Point Context



Key Observation Point Location

LT02: Cape May Point State Park, Lower Township, Cape May County, New Jersey

Environmental Data

Date Taken: 08/25/2022
Time: 2:35 PM
Temperature: 88°F
Humidity: 40%
Visibility*: 10+ miles
Wind Direction: South
Wind Speed: 16 mph
Conditions Observed: Fair

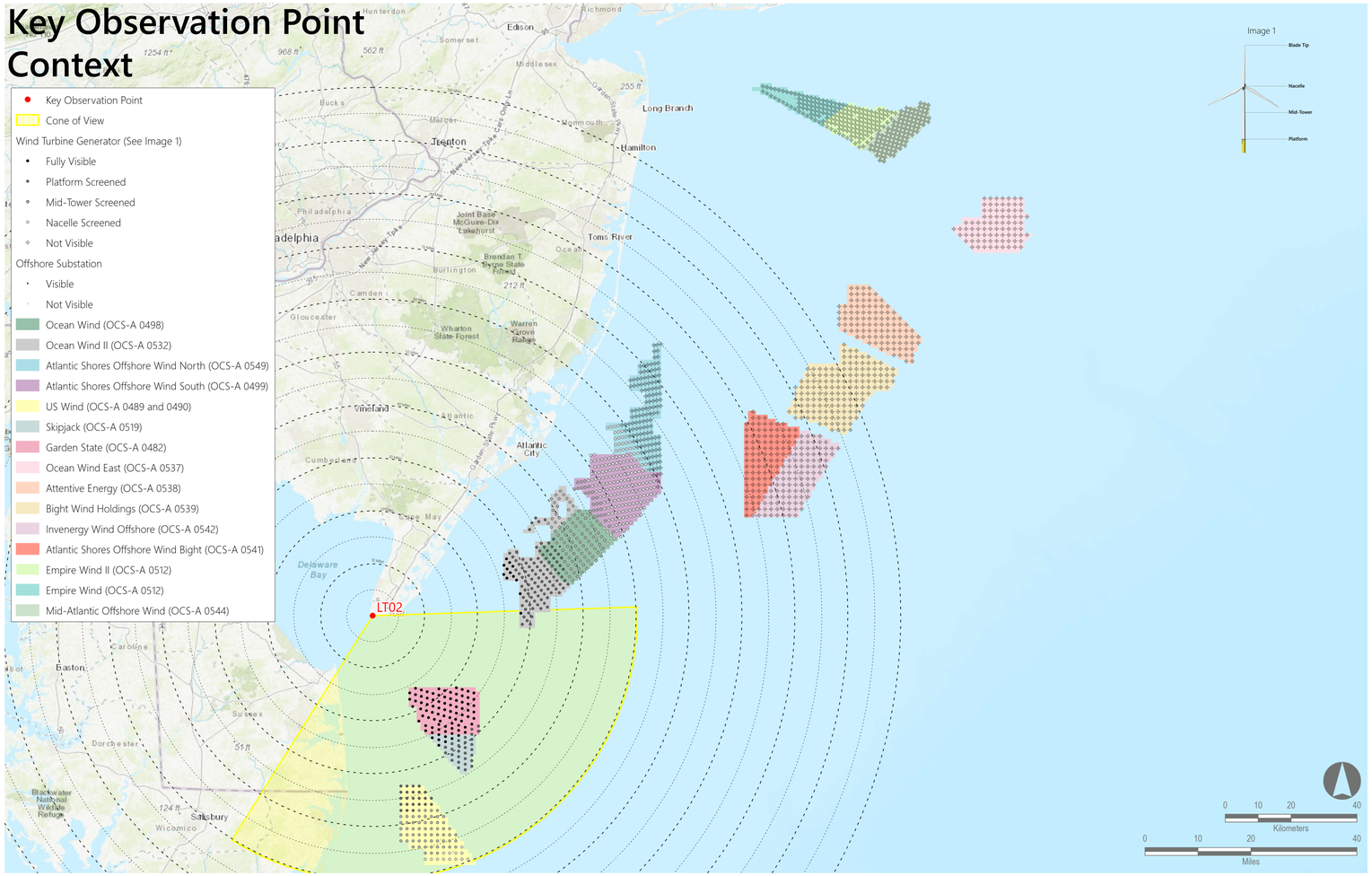
Camera Information
Camera: Canon EOS 5D Mark IV
Resolution: 30.4 Megapixels
Lens Focal Length: 50 mm
Camera Height: 150.10 feet AMSL

Key Observation Point Information

County: Cape May
Town: Lower
State: New Jersey
Location: Cape May Point State Park
Latitude, Longitude: 38.93299°N, 74.96036°W
Direction of View (Center): South-southeast (149.4°)
Field of View: 124° x 55°

Visual Resources
Character Area: Recreation, Seascape (SCA)
User Group: Residents/Tourists
Visually Sensitive Resource: Cape May Point State Park, Cape May Point State Park - Fishing Access, Cape May Point Borough Beach, Cape May Lighthouse, Bayshore Heritage Scenic Byway

Key Observation Point Context



Reasonably Foreseeable Projects Represented in Photosimulation

		Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP**	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Scenario 5	Scenario 2	Atlantic Shores Offshore Wind South (OCS-A 0499)	2025-2027	1,047	145	205	45.0	58.9
Scenario 4	Scenario 1	Ocean Wind (OCS-A 0498)	2023-2025	906	105	111	33.9	47.9
		Empire Wind (OCS-A 0512)	2024-2025	951	0	72	Not Visible	Not Visible
		Empire Wind II (OCS-A 0512)	2023-2027	951	0	104	Not Visible	Not Visible
	Scenario 3	Skipjack (OCS-A 0519)	2024-2030	853	33	33	25.7	34.1
		Garden State (OCS-A 0482)	2023-2030	853	80	80	15.9	29.6
		US Wind (OCS-A 0489 and 0490)	2024	938	98	101	32.6	49.4
		Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	13	164	55.5	59.0
		Ocean Wind II (OCS-A 0532)	2026-2030	906	111	111	26.0	43.2
		Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
		Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
		Attentive Energy (OCS-A 0538)	by 2030	853	0	101	Not Visible	Not Visible
		Bight Wind Holdings (OCS-A 0539)	by 2030	853	0	148	Not Visible	Not Visible
		Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	0	95	Not Visible	Not Visible
		Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	0	99	Not Visible	Not Visible

Notes:

- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- *Historical meteorological data predicts visibility within a limit of 10 statute miles. However, visibility may extend beyond this distance. The photosimulations assume visibility extends to the limit of physical visibility (including a standard refraction index).
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- **The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

ATLANTIC SHORES offshore wind

MATCH LINE** LT02 PANO #1

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

LT02: Cape May Point State Park, Lower Township, Cape May County, New Jersey

Existing Conditions (Panorama 2)

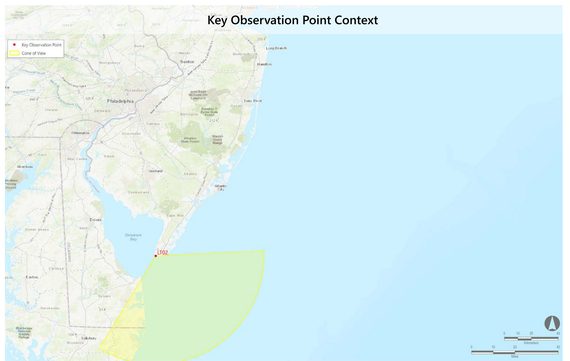
Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This box should be exactly 1" long on the printed panorama

Key Observation Point Context



Key Observation Point Location

MATCH LINE** LT02 PANO #1

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

LT02: Cape May Point State Park, Lower Township, Cape May County, New Jersey

Photosimulation (Panorama 2): Scenario 1: 2023-2025 Project Construction (Ocean Wind, Empire Wind, Empire Wind II)

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

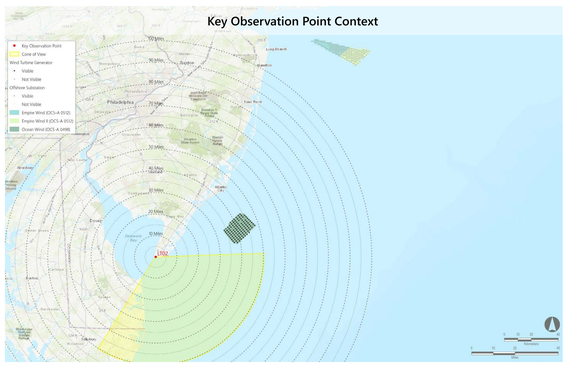
This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Ocean Wind (OCS-A 0498)	2024-2025	906	105	111	33.9	47.9
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible

Key Observation Point Context



Key Observation Point Location

MATCH LINE** LT02 PANO #1

MATCH LINE** LT02 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

LT02: Cape May Point State Park, Lower Township, Cape May County, New Jersey

Photosimulation (Panorama 2): Scenario 2: Atlantic Shores Construction (2025-2027) added to Scenario 1 (Ocean Wind, Empire Wind, Empire Wind II, Atlantic Shores South)

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

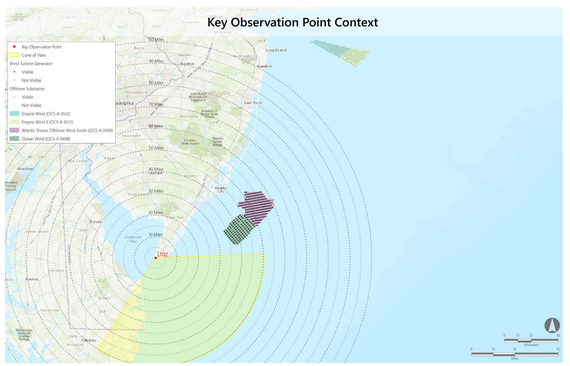
This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	145	205	45.0	58.9
Ocean Wind (OCS-A 0498)	2024-2025	906	105	111	33.9	47.9
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible

Key Observation Point Context



Key Observation Point Location

MATCH LINE** LT02 PANO #1

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

LT02: Cape May Point State Park, Lower Township, Cape May County, New Jersey

Photosimulation (Panorama 2): Scenario 3: 2024-2030 Project construction added after the construction of Atlantic Shores South (Full Lease Build-out Including Atlantic Shores South)

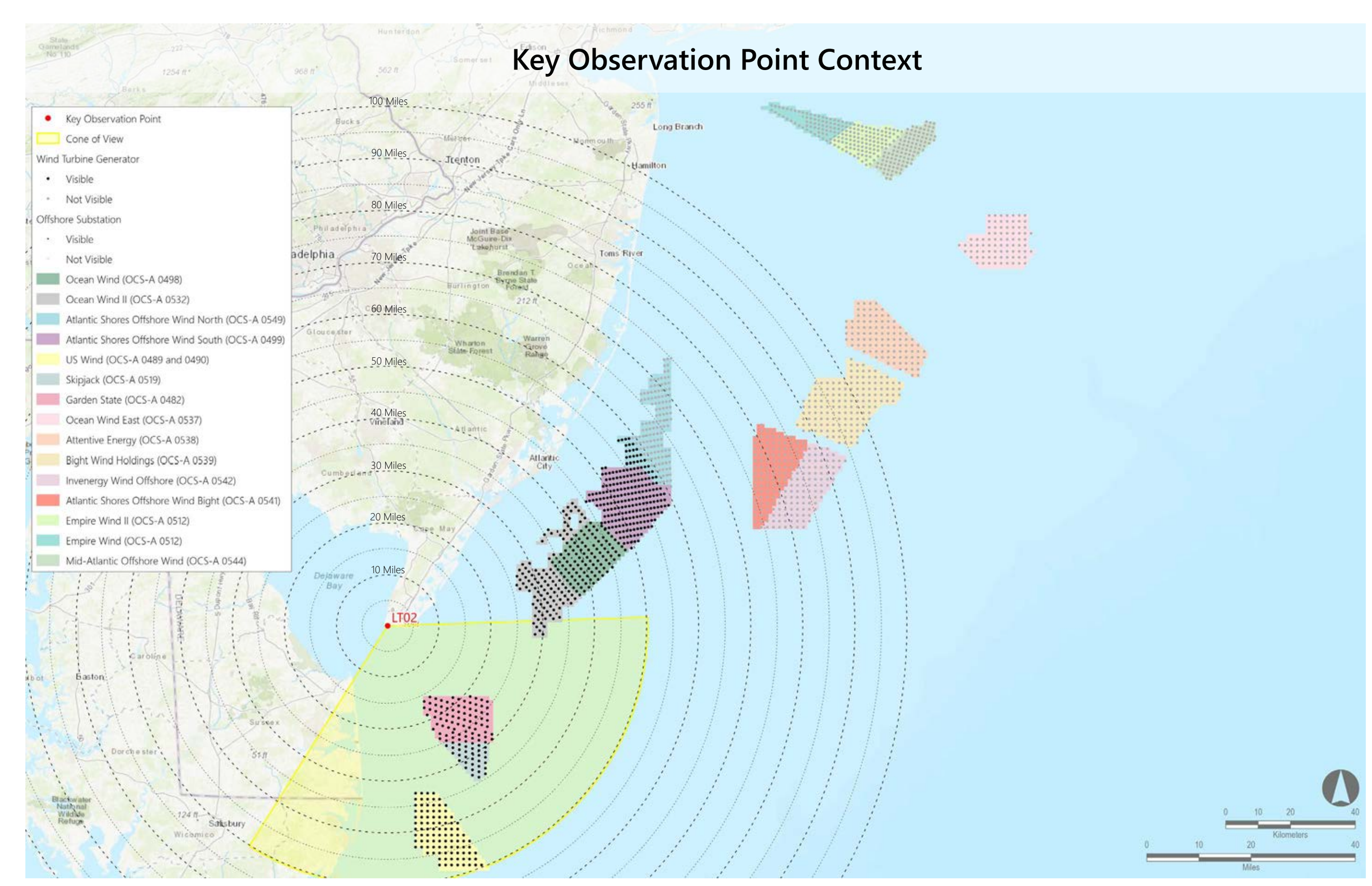
Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	145	205	45.0	58.9
Ocean Wind (OCS-A 0498)	2024-2025	906	105	111	33.9	47.9
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible
Skipjack (OCS-A 0519)	2024-2030	853	33	33	25.7	34.1
Garden State (OCS-A 0482)	2023-2030	853	80	80	15.9	29.6
US Wind (OCS-A 0489 and 0490)	2024	938	98	101	32.6	49.4
Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	13	164	55.5	59.0
Ocean Wind II (OCS-A 0532)	2026-2030	906	111	111	26.0	43.2
Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
Attentive Energy (OCS-A 0538)	by 2030	853	0	101	Not Visible	Not Visible
Bight Wind Holdings (OCS-A 0539)	by 2030	853	0	148	Not Visible	Not Visible
Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	0	95	Not Visible	Not Visible
Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	0	99	Not Visible	Not Visible



MATCH LINE** LT02 PANO #1

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

LT02: Cape May Point State Park, Lower Township, Cape May County, New Jersey

Photosimulation (Panorama 2): Scenario 4: Full buildout of all lease areas without Atlantic Shores South

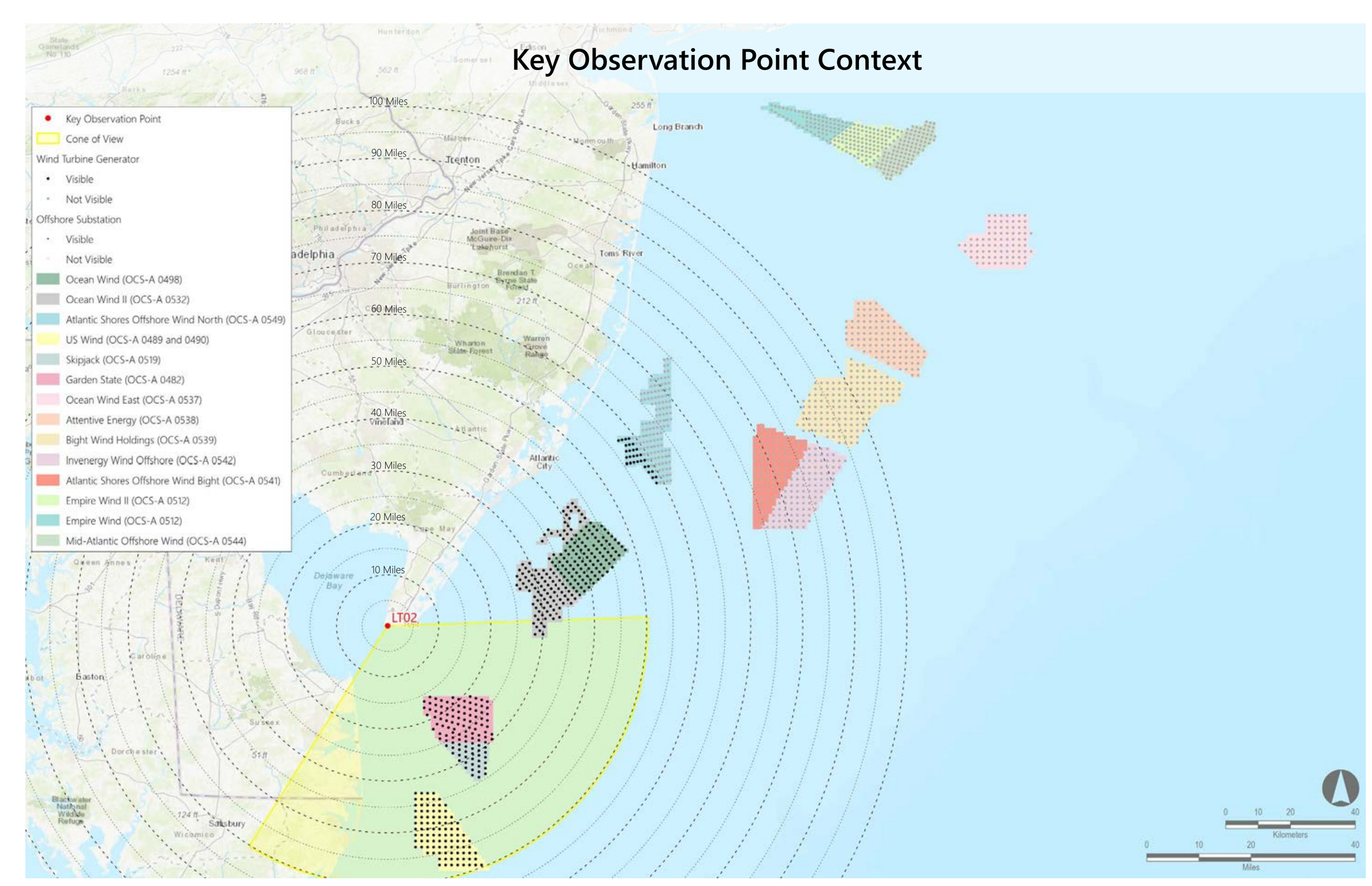
Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Ocean Wind (OCS-A 0498)	2024-2025	906	105	111	33.9	47.9
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible
Skipjack (OCS-A 0519)	2024-2030	853	33	33	25.7	34.1
Garden State (OCS-A 0482)	2023-2030	853	80	80	15.9	29.6
US Wind (OCS-A 0489 and 0490)	2024	938	98	101	32.6	49.4
Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	13	164	55.5	59.0
Ocean Wind II (OCS-A 0532)	2026-2030	906	111	111	26.0	43.2
Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
Attentive Energy (OCS-A 0538)	by 2030	853	0	101	Not Visible	Not Visible
Bight Wind Holdings (OCS-A 0539)	by 2030	853	0	148	Not Visible	Not Visible
Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	0	95	Not Visible	Not Visible
Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	0	99	Not Visible	Not Visible



MATCH LINE** LT02 PANO #1

MATCH LINE** LT02 PANO #1

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

LT02: Cape May Point State Park, Lower Township, Cape May County, New Jersey

Photosimulation (Panorama 2): Scenario 5: Atlantic Shores South without the construction of other foreseeable planned activities

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

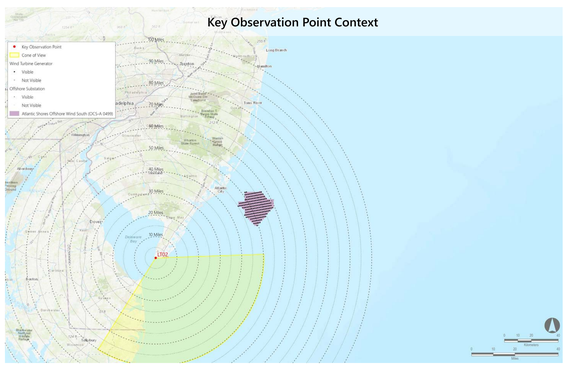
This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	145	205	45.0	58.9

Key Observation Point Context



Key Observation Point Location

OC04: Gillian's Wonderland Pier, Ocean City, Cape May County, New Jersey

Environmental Data

Date Taken: 08/25/2022
Time: 12:47 PM
Temperature: 91°F
Humidity: 29%
Visibility*: 10+ miles
Wind Direction: Northwest
Wind Speed: 3 mph
Conditions Observed: Fair

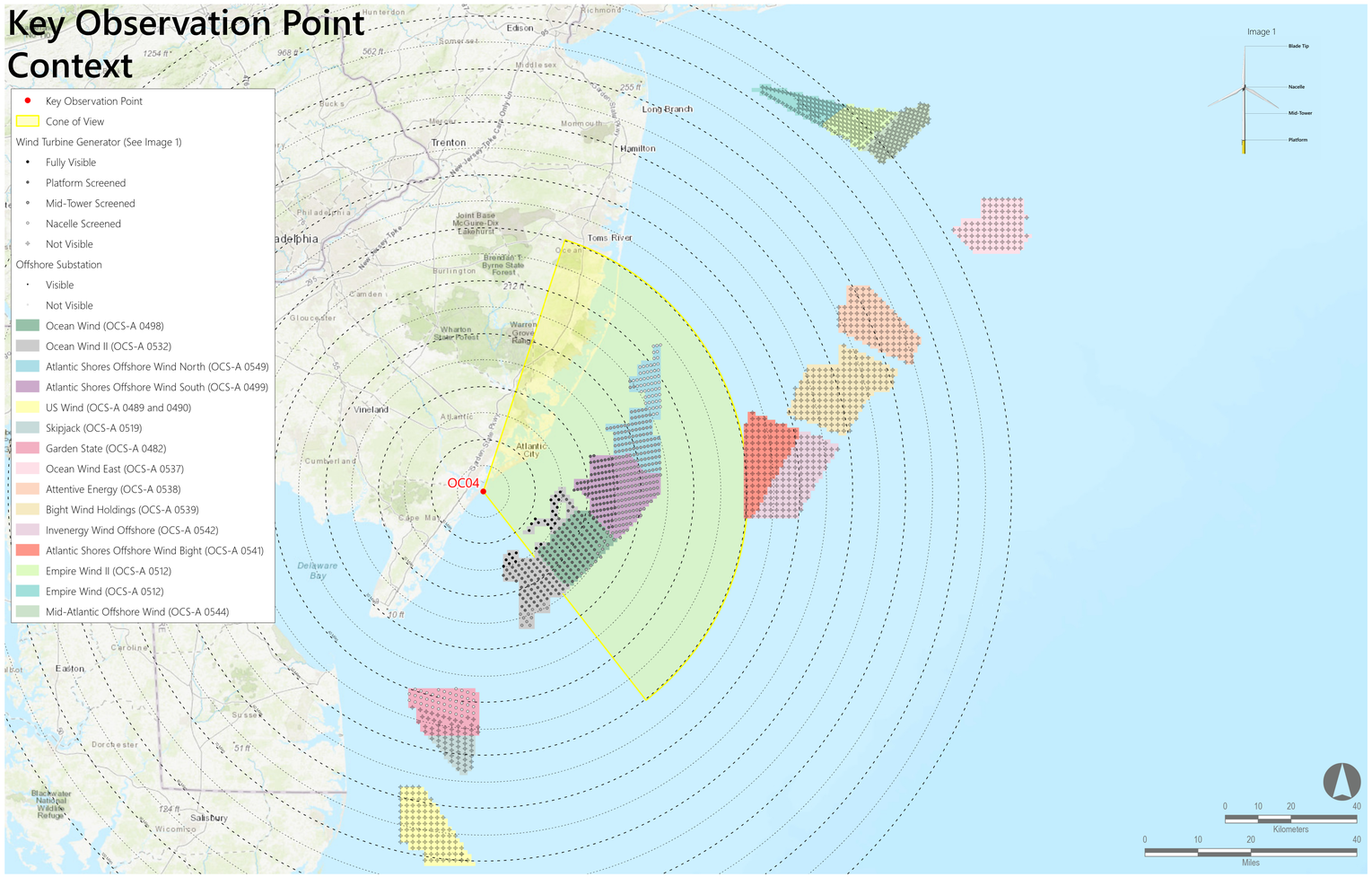
Camera Information
Camera: Canon EOS 5D Mark IV
Resolution: 30.4 Megapixels
Lens Focal Length: 50 mm
Camera Height: 5.10 feet AMSL

Key Observation Point Information

County: Cape May
Town: Ocean City
State: New Jersey
Location: Gillian's Wonderland Pier
Latitude, Longitude: 39.27506°N, 74.56878°W
Direction of View (Center): East (80.3°)
Field of View: 124° x 55°

Visual Resources
Character Area: Commercial Beachfront, Seascape (SCA)
User Group: Residents/Tourists, Fishermen
Visually Sensitive Resource: Ocean City Beachfront

Key Observation Point Context



Reasonably Foreseeable Projects Represented in Photosimulation

		Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP**	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Scenario 5	Scenario 2	Atlantic Shores Offshore Wind South (OCS-A 0499)	2025-2027	1,047	204	205	17.2	33.6
Scenario 4	Scenario 1	Ocean Wind (OCS-A 0498)	2023-2025	906	111	111	15.6	26.3
		Empire Wind (OCS-A 0512)	2024-2025	951	0	72	Not Visible	Not Visible
		Empire Wind II (OCS-A 0512)	2023-2027	951	0	104	Not Visible	Not Visible
	Scenario 3	Skipjack (OCS-A 0519)	2024-2030	853	0	33	Not Visible	Not Visible
		Garden State (OCS-A 0482)	2023-2030	853	32	80	37.6	42.6
		US Wind (OCS-A 0489 and 0490)	2024	938	0	101	Not Visible	Not Visible
		Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	118	164	26.1	43.5
		Ocean Wind II (OCS-A 0532)	2026-2030	906	111	111	11.0	26.8
		Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
		Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
		Attentive Energy (OCS-A 0538)	by 2030	853	0	101	Not Visible	Not Visible
		Bight Wind Holdings (OCS-A 0539)	by 2030	853	0	148	Not Visible	Not Visible
		Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	0	95	Not Visible	Not Visible
		Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	0	99	Not Visible	Not Visible

Notes:

- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- *Historical meteorological data predicts visibility within a limit of 10 statute miles. However, visibility may extend beyond this distance. The photosimulations assume visibility extends to the limit of physical visibility (including a standard refraction index).
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- **The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

MATCH LINE OC04 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

OC04: Gillian's Wonderland Pier, Ocean City, Cape May County, New Jersey

Existing Conditions (Panorama 1)

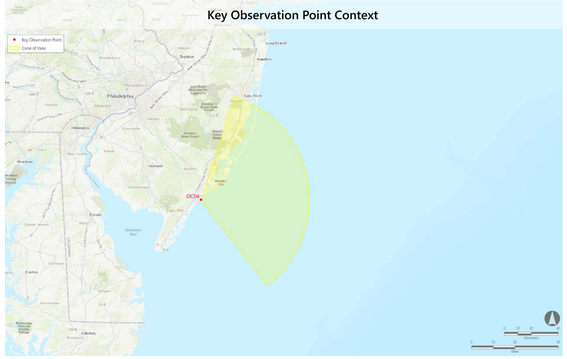
Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This box should be exactly 7" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.

Key Observation Point Context



Key Observation Point Location

MATCH LINE OC04 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

OC04: Gillian's Wonderland Pier, Ocean City, Cape May County, New Jersey

Photosimulation (Panorama 1): Scenario 1: 2023-2025 Project Construction (Ocean Wind, Empire Wind, Empire Wind II)

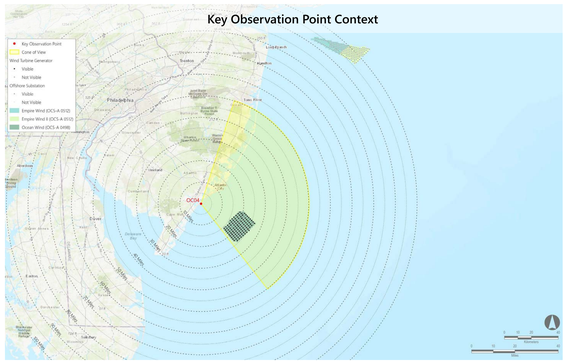
Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This box should be exactly 7" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Ocean Wind (OCS-A 0498)	2024-2025	906	111	111	15.6	26.3
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible



MATCH LINE OC04 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

OC04: Gillian's Wonderland Pier, Ocean City, Cape May County, New Jersey

Photosimulation (Panorama 1): Scenario 2: Atlantic Shores Construction (2025-2027) added to Scenario 1 (Ocean Wind, Empire Wind, Empire Wind II, Atlantic Shores South)

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

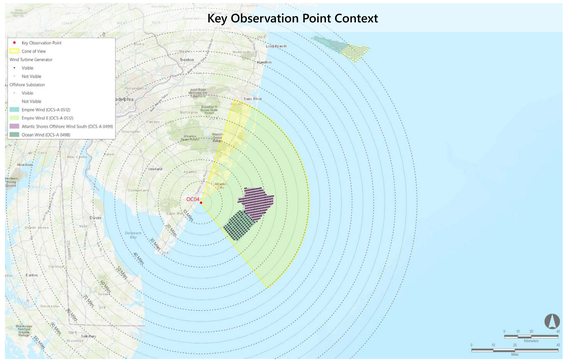
This box should be exactly 7" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	204	205	17.2	33.6
Ocean Wind (OCS-A 0498)	2024-2025	906	111	111	15.6	26.3
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible

Key Observation Point Context



Key Observation Point Location

MATCH LINE OC04 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

OC04: Gillian's Wonderland Pier, Ocean City, Cape May County, New Jersey

Photosimulation (Panorama 1): Scenario 3: 2024-2030 Project construction added after the construction of Atlantic Shores South (Full Lease Build-out Including Atlantic Shores South)

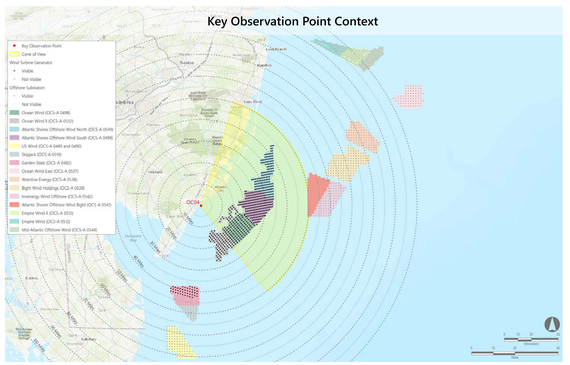
Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

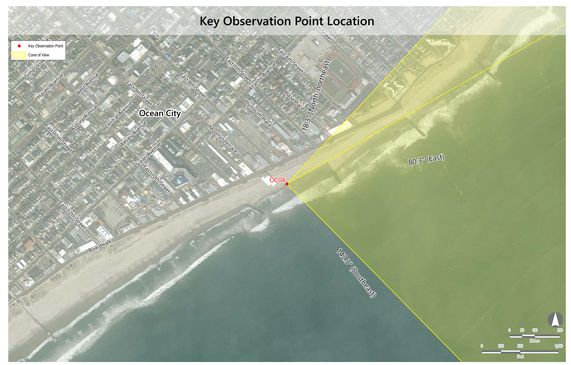
This box should be exactly 7" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	204	205	17.2	33.6
Ocean Wind (OCS-A 0498)	2024-2025	906	111	111	15.6	26.3
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible
Skipjack (OCS-A 0519)	2024-2030	853	0	33	Not Visible	Not Visible
Garden State (OCS-A 0482)	2023-2030	853	32	80	37.6	42.6
US Wind (OCS-A 0489 and 0490)	2024	938	0	101	Not Visible	Not Visible
Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	118	164	26.1	43.5
Ocean Wind II (OCS-A 0532)	2026-2030	906	111	111	11.0	26.8
Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
Attentive Energy (OCS-A 0538)	by 2030	853	0	101	Not Visible	Not Visible
Bight Wind Holdings (OCS-A 0539)	by 2030	853	0	148	Not Visible	Not Visible
Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	0	95	Not Visible	Not Visible
Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	0	99	Not Visible	Not Visible





MATCH LINE OC04 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

OC04: Gillian's Wonderland Pier, Ocean City, Cape May County, New Jersey

Photosimulation (Panorama 1): Scenario 4: Full buildout of all lease areas without Atlantic Shores South

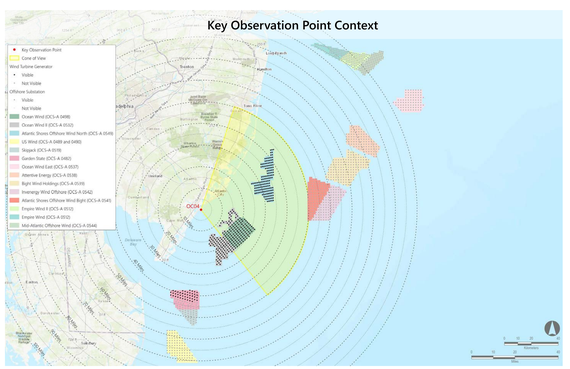
Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

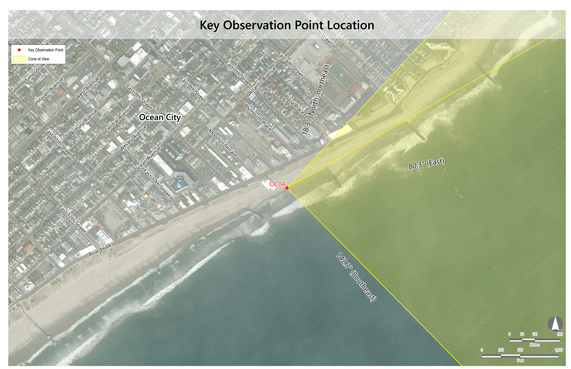
This box should be exactly 7" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Ocean Wind (OCS-A 0498)	2024-2025	906	111	111	15.6	26.3
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible
Skipjack (OCS-A 0519)	2024-2030	853	0	33	Not Visible	Not Visible
Garden State (OCS-A 0482)	2023-2030	853	32	80	37.6	42.6
US Wind (OCS-A 0489 and 0490)	2024	938	0	101	Not Visible	Not Visible
Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	118	164	26.1	43.5
Ocean Wind II (OCS-A 0532)	2026-2030	906	111	111	11.0	26.8
Mid-Atlantic Offshore Wind (OCS- A 0544)	by 2030	853	0	104	Not Visible	Not Visible
Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
Attentive Energy (OCS-A 0538)	by 2030	853	0	101	Not Visible	Not Visible
Bight Wind Holdings (OCS-A 0539)	by 2030	853	0	148	Not Visible	Not Visible
Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	0	95	Not Visible	Not Visible
Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	0	99	Not Visible	Not Visible





MATCH LINE OC04 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

OC04: Gillian's Wonderland Pier, Ocean City, Cape May County, New Jersey

Photosimulation (Panorama 1): Scenario 5: Atlantic Shores South without the construction of other foreseeable planned activities

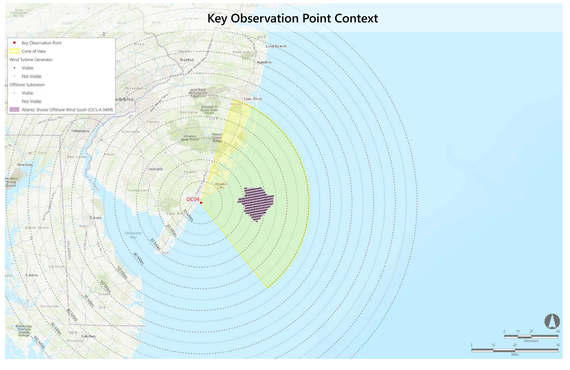
Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This box should be exactly 7" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	204	205	17.2	33.6



OC04: Gillian's Wonderland Pier, Ocean City, Cape May County, New Jersey

Environmental Data

Date Taken: 08/25/2022
Time: 12:47 PM
Temperature: 91°F
Humidity: 29%
Visibility*: 10+ miles
Wind Direction: Northwest
Wind Speed: 3 mph
Conditions Observed: Fair

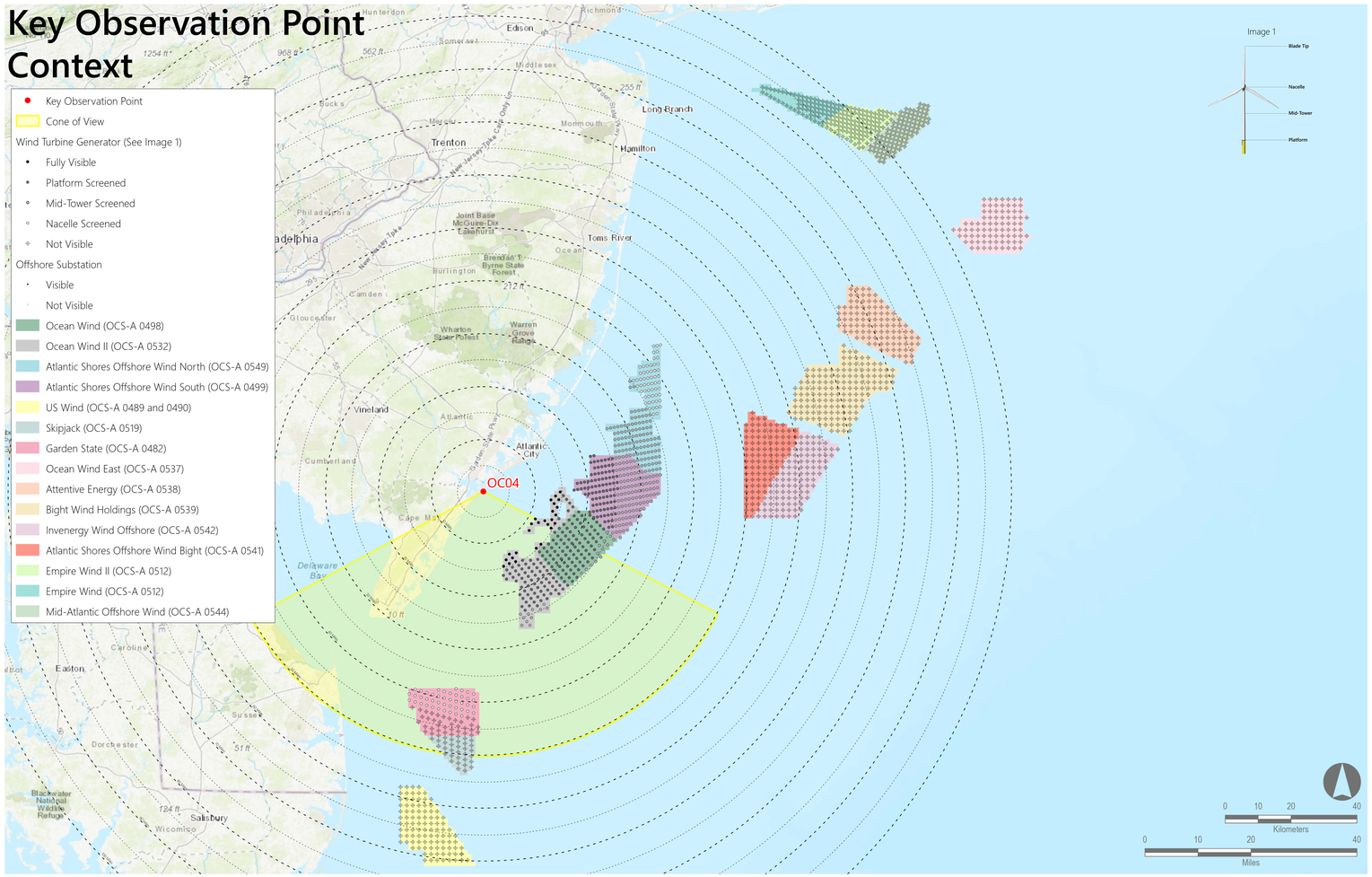
Camera Information
Camera: Canon EOS 5D Mark IV
Resolution: 30.4 Megapixels
Lens Focal Length: 50 mm
Camera Height: 5.10 feet AMSL

Key Observation Point Information

County: Cape May
Town: Ocean City
State: New Jersey
Location: Gillian's Wonderland Pier
Latitude, Longitude: 39.27506°N, 74.56878°W
Direction of View (Center): South (179.7°)
Field of View: 124° x 55°

Visual Resources
Character Area: Commercial Beachfront, Seascape (SCA)
User Group: Residents/Tourists, Fishermen
Visually Sensitive Resource: Ocean City Beachfront

Key Observation Point Context



Reasonably Foreseeable Projects Represented in Photosimulation

		Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP**	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Scenario 5	Scenario 2	Atlantic Shores Offshore Wind South (OCS-A 0499)	2025-2027	1,047	204	205	17.2	33.6
Scenario 4	Scenario 1	Ocean Wind (OCS-A 0498)	2023-2025	906	111	111	15.6	26.3
		Empire Wind (OCS-A 0512)	2024-2025	951	0	72	Not Visible	Not Visible
		Empire Wind II (OCS-A 0512)	2023-2027	951	0	104	Not Visible	Not Visible
	Scenario 3	Skipjack (OCS-A 0519)	2024-2030	853	0	33	Not Visible	Not Visible
		Garden State (OCS-A 0482)	2023-2030	853	32	80	37.6	42.6
		US Wind (OCS-A 0489 and 0490)	2024	938	0	101	Not Visible	Not Visible
		Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	118	164	26.1	43.5
		Ocean Wind II (OCS-A 0532)	2026-2030	906	111	111	11.0	26.8
		Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
		Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
		Attentive Energy (OCS-A 0538)	by 2030	853	0	101	Not Visible	Not Visible
		Bight Wind Holdings (OCS-A 0539)	by 2030	853	0	148	Not Visible	Not Visible
		Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	0	95	Not Visible	Not Visible
		Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	0	99	Not Visible	Not Visible

Notes:

- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- *Historical meteorological data predicts visibility within a limit of 10 statute miles. However, visibility may extend beyond this distance. The photosimulations assume visibility extends to the limit of physical visibility (including a standard refraction index).
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- **The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

ATLANTIC SHORES offshore wind

MATCH LINE OC04 PANO #1

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

OC04: Gillian's Wonderland Pier, Ocean City, Cape May County, New Jersey

Existing Conditions (Panorama 2)

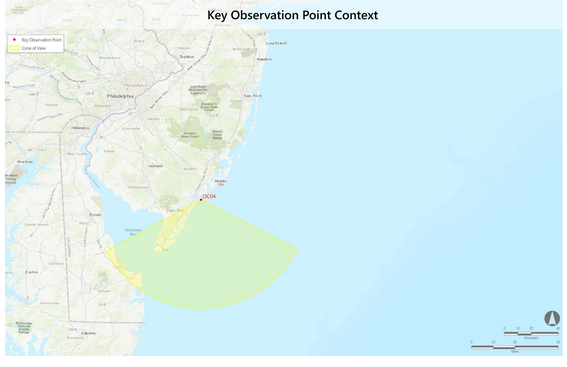
Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This box should be exactly 7" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.

Key Observation Point Context



Key Observation Point Location

MATCH LINE OC04 PANO #1

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

OC04: Gillian's Wonderland Pier, Ocean City, Cape May County, New Jersey

Photosimulation (Panorama 2): Scenario 1: 2023-2025 Project Construction (Ocean Wind, Empire Wind, Empire Wind II)

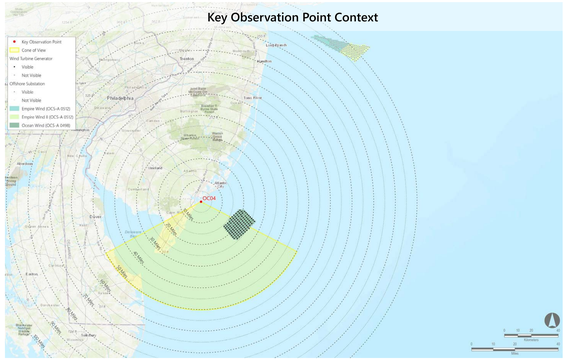
Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This box should be exactly 7" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Ocean Wind (OCS-A 0498)	2024-2025	906	111	111	15.6	26.3
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible



MATCH LINE OC04 PANO #1

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

OC04: Gillian's Wonderland Pier, Ocean City, Cape May County, New Jersey

Photosimulation (Panorama 2): Scenario 2: Atlantic Shores Construction (2025-2027) added to Scenario 1 (Ocean Wind, Empire Wind, Empire Wind II, Atlantic Shores South)

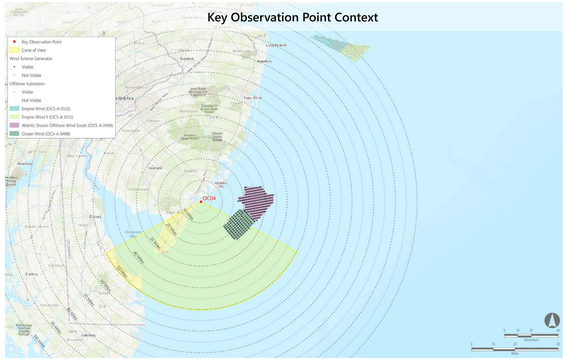
Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This box should be exactly 7" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	204	205	17.2	33.6
Ocean Wind (OCS-A 0498)	2024-2025	906	111	111	15.6	26.3
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible



MATCH LINE OC04 PANO #1

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

OC04: Gillian's Wonderland Pier, Ocean City, Cape May County, New Jersey

Photosimulation (Panorama 2): Scenario 3: 2024-2030 Project construction added after the construction of Atlantic Shores South (Full Lease Build-out Including Atlantic Shores South)

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

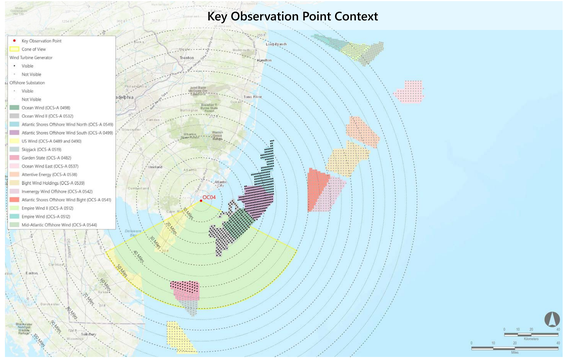
This box should be exactly 7" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	204	205	17.2	33.6
Ocean Wind (OCS-A 0498)	2024-2025	906	111	111	15.6	26.3
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible
Skipjack (OCS-A 0519)	2024-2030	853	0	33	Not Visible	Not Visible
Garden State (OCS-A 0482)	2023-2030	853	32	80	37.6	42.6
US Wind (OCS-A 0489 and 0490)	2024	938	0	101	Not Visible	Not Visible
Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	118	164	26.1	43.5
Ocean Wind II (OCS-A 0532)	2026-2030	906	111	111	11.0	26.8
Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
Attentive Energy (OCS-A 0538)	by 2030	853	0	101	Not Visible	Not Visible
Bight Wind Holdings (OCS-A 0539)	by 2030	853	0	148	Not Visible	Not Visible
Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	0	95	Not Visible	Not Visible
Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	0	99	Not Visible	Not Visible

Key Observation Point Context



Key Observation Point Location

MATCH LINE OC04 PANO #1

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

OC04: Gillian's Wonderland Pier, Ocean City, Cape May County, New Jersey

Photosimulation (Panorama 2): Scenario 4: Full buildout of all lease areas without Atlantic Shores South

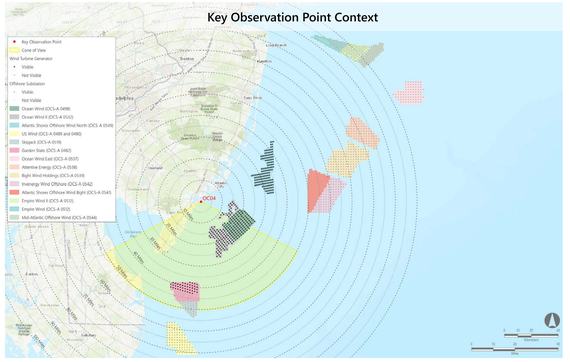
Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

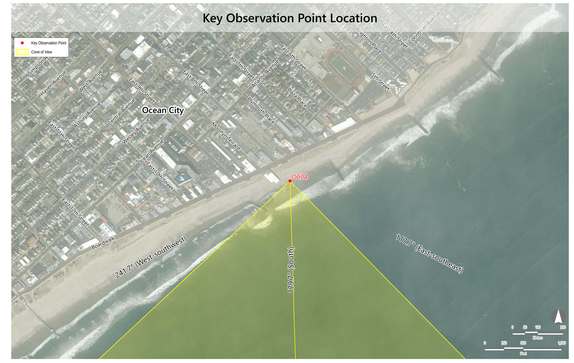
This box should be exactly 7" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Ocean Wind (OCS-A 0498)	2024-2025	906	111	111	15.6	26.3
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible
Skipjack (OCS-A 0519)	2024-2030	853	0	33	Not Visible	Not Visible
Garden State (OCS-A 0482)	2023-2030	853	32	80	37.6	42.6
US Wind (OCS-A 0489 and 0490)	2024	938	0	101	Not Visible	Not Visible
Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	118	164	26.1	43.5
Ocean Wind II (OCS-A 0532)	2026-2030	906	111	111	11.0	26.8
Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
Attentive Energy (OCS-A 0538)	by 2030	853	0	101	Not Visible	Not Visible
Bight Wind Holdings (OCS-A 0539)	by 2030	853	0	148	Not Visible	Not Visible
Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	0	95	Not Visible	Not Visible
Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	0	99	Not Visible	Not Visible





MATCH LINE OC04 PANO #1

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

OC04: Gillian's Wonderland Pier, Ocean City, Cape May County, New Jersey

Photosimulation (Panorama 2): Scenario 5: Atlantic Shores South without the construction of other foreseeable planned activities

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

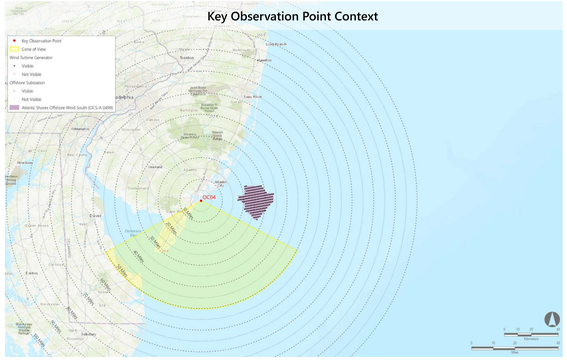
This box should be exactly 7" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	204	205	17.2	33.6

Key Observation Point Context



Key Observation Point Location

SIC02: Townsend's Inlet Bridge, Sea Isle City, Cape May County, New Jersey

Environmental Data

Date Taken: 08/25/2022
Time: 4:58 PM
Temperature: 84°F
Humidity: 53%
Visibility*: 10+ miles
Wind Direction: South-southeast
Wind Speed: 10 mph
Conditions Observed: Fair

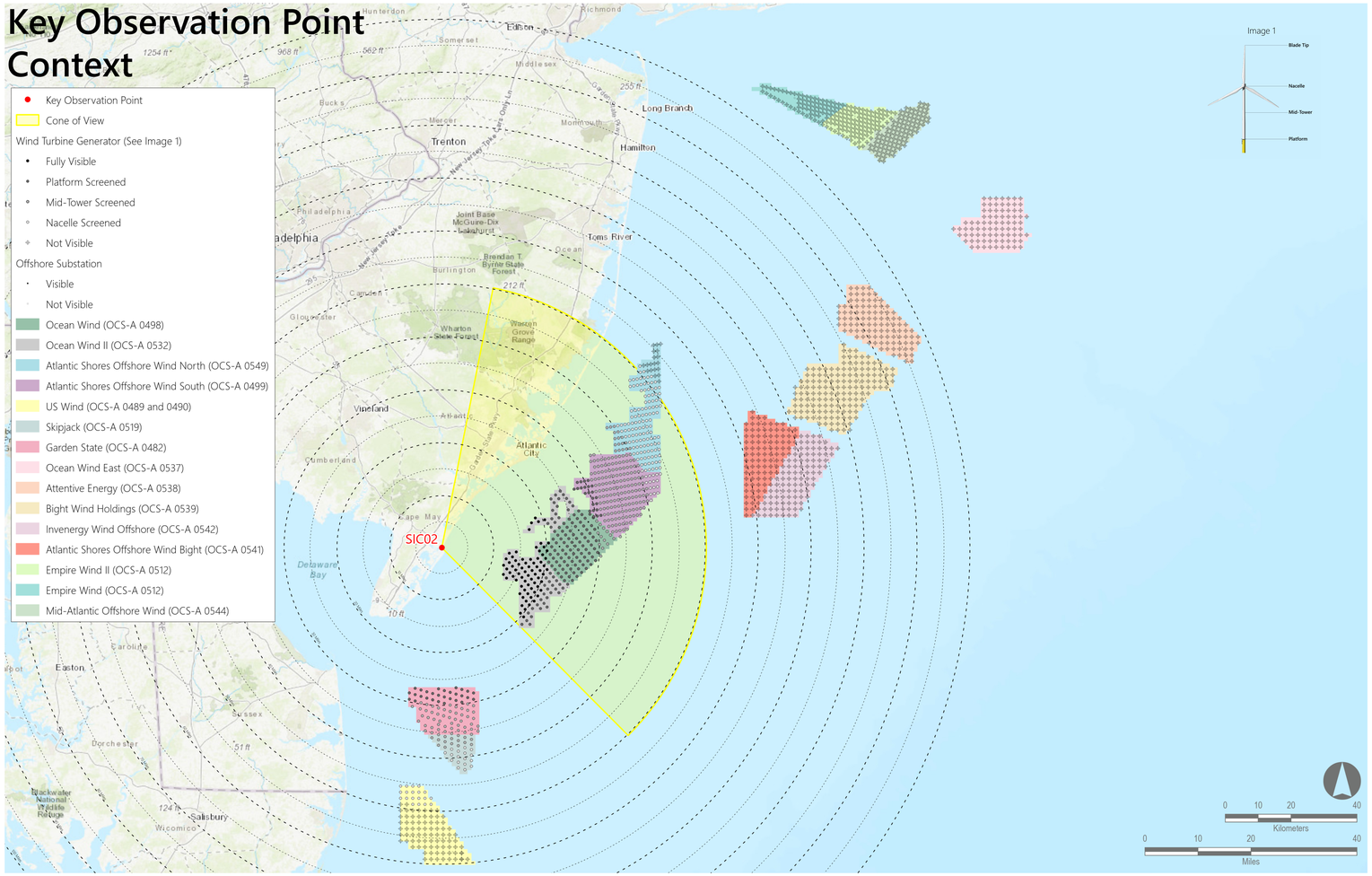
Camera Information
Camera: Canon EOS 5D Mark IV
Resolution: 30.4 Megapixels
Lens Focal Length: 50 mm
Camera Height: 40.18 feet AMSL

Key Observation Point Information

County: Cape May
Town: Ocean City
State: New Jersey
Location: Townsend's Inlet Bridge
Latitude, Longitude: 39.11919°N, 74.71576°W
Direction of View (Center): East-northeast (73.4°)
Field of View: 124° x 55°

Visual Resources
Character Area: Open Water/Ocean, Undeveloped Bay, Seascape (SCA)
User Group: Residents/Tourists
Visually Sensitive Resource: Sea Isle City Beach Dune Upland, Townsend Inlet Bridge (SI&A #3100003)

Key Observation Point Context



Reasonably Foreseeable Projects Represented in Photosimulation

		Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP**	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Scenario 5	Scenario 2	Atlantic Shores Offshore Wind South (OCS-A 0499)	2025-2027	1,047	200	205	27.4	43.6
Scenario 4	Scenario 1	Ocean Wind (OCS-A 0498)	2023-2025	906	111	111	18.5	32.6
		Empire Wind (OCS-A 0512)	2024-2025	951	0	72	Not Visible	Not Visible
		Empire Wind II (OCS-A 0512)	2023-2027	951	0	104	Not Visible	Not Visible
	Scenario 3	Skipjack (OCS-A 0519)	2024-2030	853	1	33	35.3	42.2
		Garden State (OCS-A 0482)	2023-2030	853	62	80	26.6	35.7
		US Wind (OCS-A 0489 and 0490)	2024	938	0	101	Not Visible	Not Visible
		Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	134	164	37.6	51.1
		Ocean Wind II (OCS-A 0532)	2026-2030	906	111	111	12.1	26.0
		Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
		Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
		Attentive Energy (OCS-A 0538)	by 2030	853	0	101	Not Visible	Not Visible
		Bight Wind Holdings (OCS-A 0539)	by 2030	853	0	148	Not Visible	Not Visible
		Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	0	95	Not Visible	Not Visible
		Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	0	99	Not Visible	Not Visible

Notes:

- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- *Historical meteorological data predicts visibility within a limit of 10 statute miles. However, visibility may extend beyond this distance. The photosimulations assume visibility extends to the limit of physical visibility (including a standard refraction index).
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- **The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

ATLANTIC SHORES offshore wind

MATCH LINE SIC02 PANO #2

MATCH LINE SIC02 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

SIC02: Townsend's Inlet Bridge, Sea Isle City, Cape May County, New Jersey

Existing Conditions (Panorama 1)

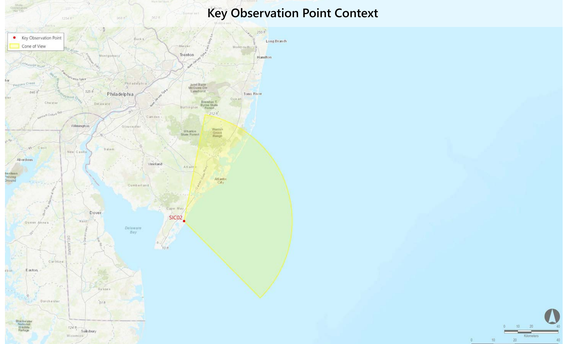
Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This box should be exactly 1" long on the printed panorama

Key Observation Point Context



Key Observation Point Location

MATCH LINE SIC02 PANO #2

MATCH LINE SIC02 PANO #1

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

SIC02: Townsend's Inlet Bridge, Sea Isle City, Cape May County, New Jersey

Photosimulation (Panorama 1): Scenario 1: 2023-2025 Project Construction (Ocean Wind, Empire Wind, Empire Wind II)

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

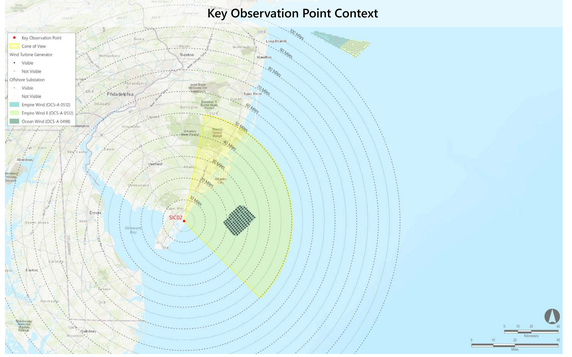
This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Ocean Wind (OCS-A 0498)	2024-2025	906	111	111	18.5	32.6
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible

Key Observation Point Context



Key Observation Point Location

MATCH LINE SIC02 PANO #2

MATCH LINE SIC02 PANO #1

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

SIC02: Townsend's Inlet Bridge, Sea Isle City, Cape May County, New Jersey

Photosimulation (Panorama 1): Scenario 2: Atlantic Shores Construction (2025-2027) added to Scenario 1 (Ocean Wind, Empire Wind, Empire Wind II, Atlantic Shores South)

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

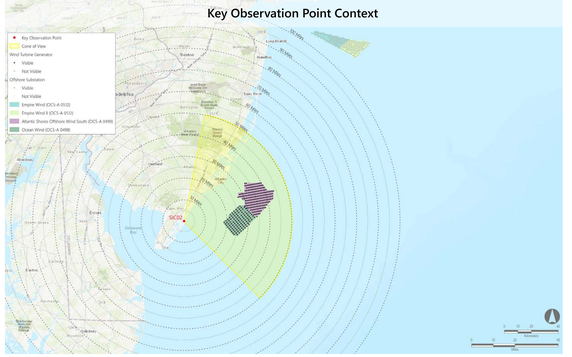
This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	200	205	27.4	43.6
Ocean Wind (OCS-A 0498)	2024-2025	906	111	111	18.5	32.6
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible

Key Observation Point Context



Key Observation Point Location

MATCH LINE SIC02 PANO #2

MATCH LINE SIC02 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

SIC02: Townsend's Inlet Bridge, Sea Isle City, Cape May County, New Jersey

Photosimulation (Panorama 1): Scenario 3: 2024-2030 Project construction added after the construction of Atlantic Shores South (Full Lease Build-out Including Atlantic Shores South)

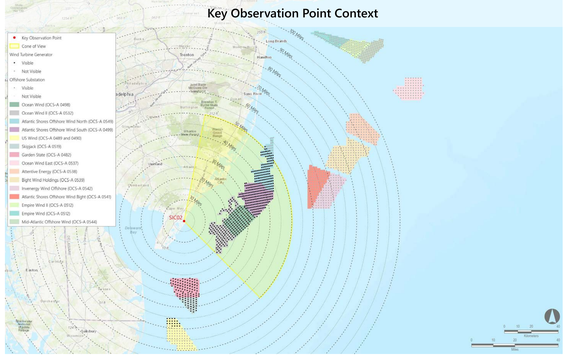
Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	200	205	27.4	43.6
Ocean Wind (OCS-A 0498)	2024-2025	906	111	111	18.5	32.6
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible
Skipjack (OCS-A 0519)	2024-2030	853	1	33	35.3	42.2
Garden State (OCS-A 0482)	2023-2030	853	62	80	26.6	35.7
US Wind (OCS-A 0489 and 0490)	2024	938	0	101	Not Visible	Not Visible
Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	134	164	37.6	51.1
Ocean Wind II (OCS-A 0532)	2026-2030	906	111	111	12.1	26.0
Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
Attentive Energy (OCS-A 0538)	by 2030	853	0	101	Not Visible	Not Visible
Bight Wind Holdings (OCS-A 0539)	by 2030	853	0	148	Not Visible	Not Visible
Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	0	95	Not Visible	Not Visible
Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	0	99	Not Visible	Not Visible



MATCH LINE SIC02 PANO #2

MATCH LINE SIC02 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

SIC02: Townsend's Inlet Bridge, Sea Isle City, Cape May County, New Jersey

Photosimulation (Panorama 1): Scenario 4: Full buildout of all lease areas without Atlantic Shores South

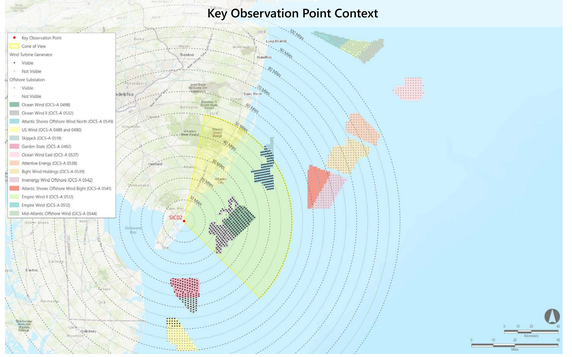
Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Ocean Wind (OCS-A 0498)	2024-2025	906	111	111	18.5	32.6
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible
Skipjack (OCS-A 0519)	2024-2030	853	1	33	35.3	42.2
Garden State (OCS-A 0482)	2023-2030	853	62	80	26.6	35.7
US Wind (OCS-A 0489 and 0490)	2024	938	0	101	Not Visible	Not Visible
Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	134	164	37.6	51.1
Ocean Wind II (OCS-A 0532)	2026-2030	906	111	111	12.1	26.0
Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
Attentive Energy (OCS-A 0538)	by 2030	853	0	101	Not Visible	Not Visible
Bight Wind Holdings (OCS-A 0539)	by 2030	853	0	148	Not Visible	Not Visible
Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	0	95	Not Visible	Not Visible
Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	0	99	Not Visible	Not Visible



MATCH LINE SIC02 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

SIC02: Townsend's Inlet Bridge, Sea Isle City, Cape May County, New Jersey

Photosimulation (Panorama 1): Scenario 5: Atlantic Shores South without the construction of other foreseeable planned activities

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

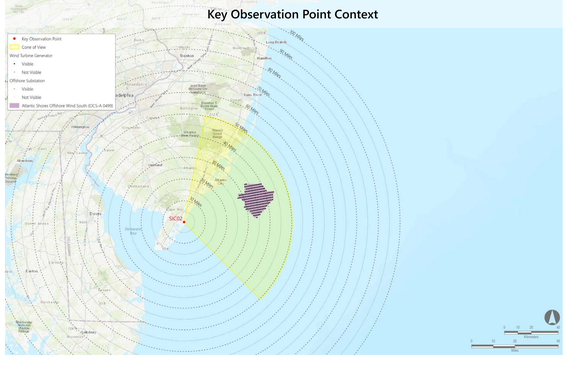
This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	200	205	27.4	43.6

Key Observation Point Context



Key Observation Point Location

SIC02: Townsend's Inlet Bridge, Sea Isle City, Cape May County, New Jersey

Environmental Data

Date Taken: 08/25/2022
Time: 4:58 PM
Temperature: 84°F
Humidity: 53%
Visibility*: 10+ miles
Wind Direction: South-southeast
Wind Speed: 10 mph
Conditions Observed: Fair

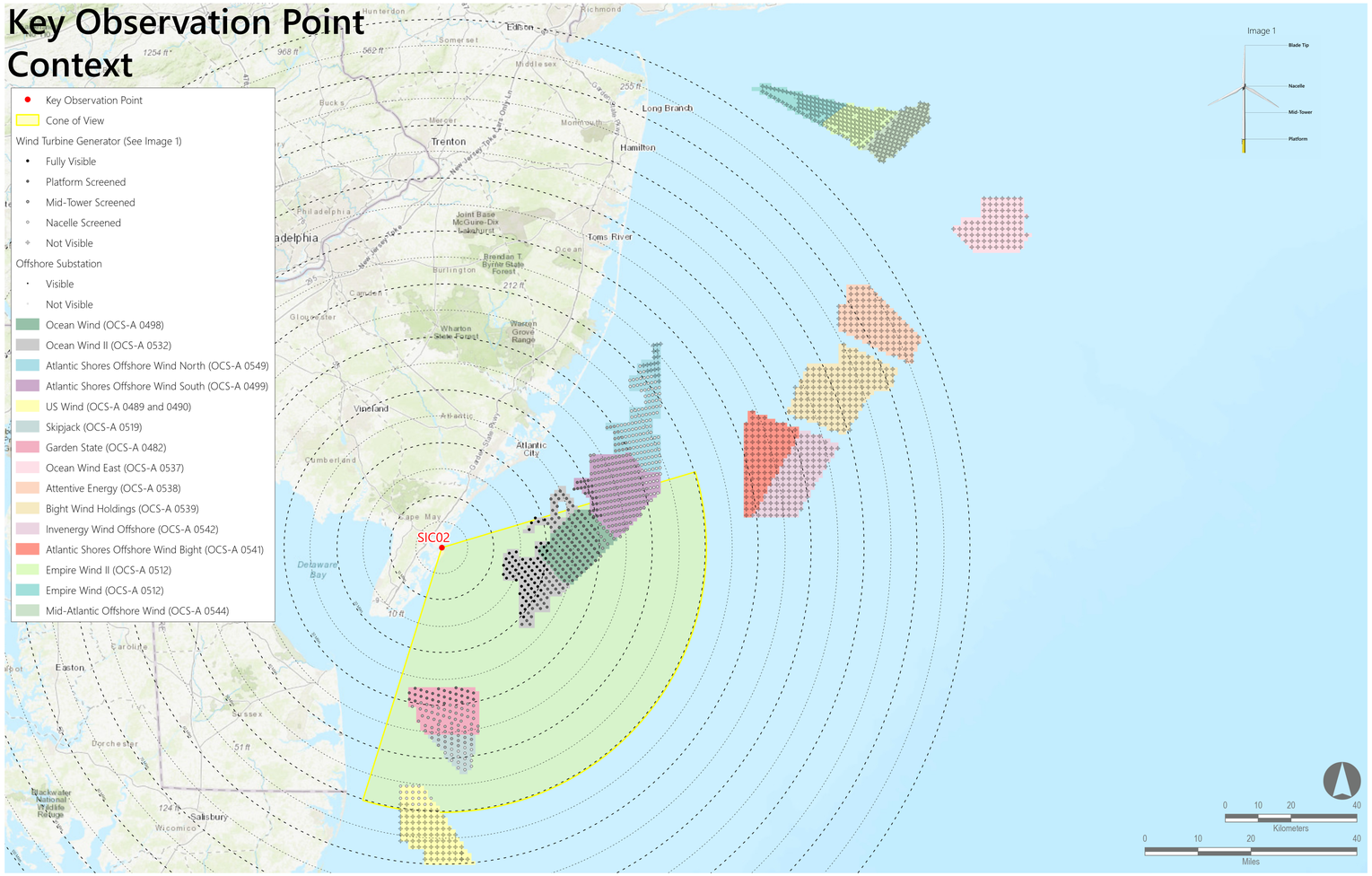
Camera Information
Camera: Canon EOS 5D Mark IV
Resolution: 30.4 Megapixels
Lens Focal Length: 50 mm
Camera Height: 40.18 feet AMSL

Key Observation Point Information

County: Cape May
Town: Ocean City
State: New Jersey
Location: Townsend's Inlet Bridge
Latitude, Longitude: 39.11919°N, 74.71576°W
Direction of View (Center): Southeast (135.6°)
Field of View: 124° x 55°

Visual Resources
Character Area: Open Water/Ocean, Undeveloped Bay, Seascape (SCA)
User Group: Residents/Tourists
Visually Sensitive Resource: Sea Isle City Beach Dune Upland, Townsend Inlet Bridge (SI&A #3100003)

Key Observation Point Context



Reasonably Foreseeable Projects Represented in Photosimulation

		Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP**	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Scenario 5	Scenario 2	Atlantic Shores Offshore Wind South (OCS-A 0499)	2025-2027	1,047	200	205	27.4	43.6
Scenario 4	Scenario 1	Ocean Wind (OCS-A 0498)	2023-2025	906	111	111	18.5	32.6
		Empire Wind (OCS-A 0512)	2024-2025	951	0	72	Not Visible	Not Visible
		Empire Wind II (OCS-A 0512)	2023-2027	951	0	104	Not Visible	Not Visible
	Scenario 3	Skipjack (OCS-A 0519)	2024-2030	853	1	33	35.3	42.2
		Garden State (OCS-A 0482)	2023-2030	853	62	80	26.6	35.7
		US Wind (OCS-A 0489 and 0490)	2024	938	0	101	Not Visible	Not Visible
		Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	134	164	37.6	51.1
		Ocean Wind II (OCS-A 0532)	2026-2030	906	111	111	12.1	26.0
		Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
		Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
		Attentive Energy (OCS-A 0538)	by 2030	853	0	101	Not Visible	Not Visible
		Bight Wind Holdings (OCS-A 0539)	by 2030	853	0	148	Not Visible	Not Visible
		Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	0	95	Not Visible	Not Visible
		Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	0	99	Not Visible	Not Visible

Notes:

- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- *Historical meteorological data predicts visibility within a limit of 10 statute miles. However, visibility may extend beyond this distance. The photosimulations assume visibility extends to the limit of physical visibility (including a standard refraction index).
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- **The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

ATLANTIC SHORES offshore wind

MATCH LINE SIC02 PANO #1

MATCH LINE SIC02 PANO #1

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

SIC02: Townsend's Inlet Bridge, Sea Isle City, Cape May County, New Jersey

Existing Conditions (Panorama 2)

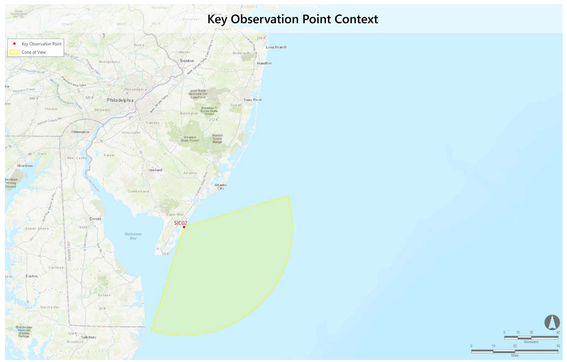
Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.

Key Observation Point Context



Key Observation Point Location

MATCH LINE SIC02 PANO #1

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

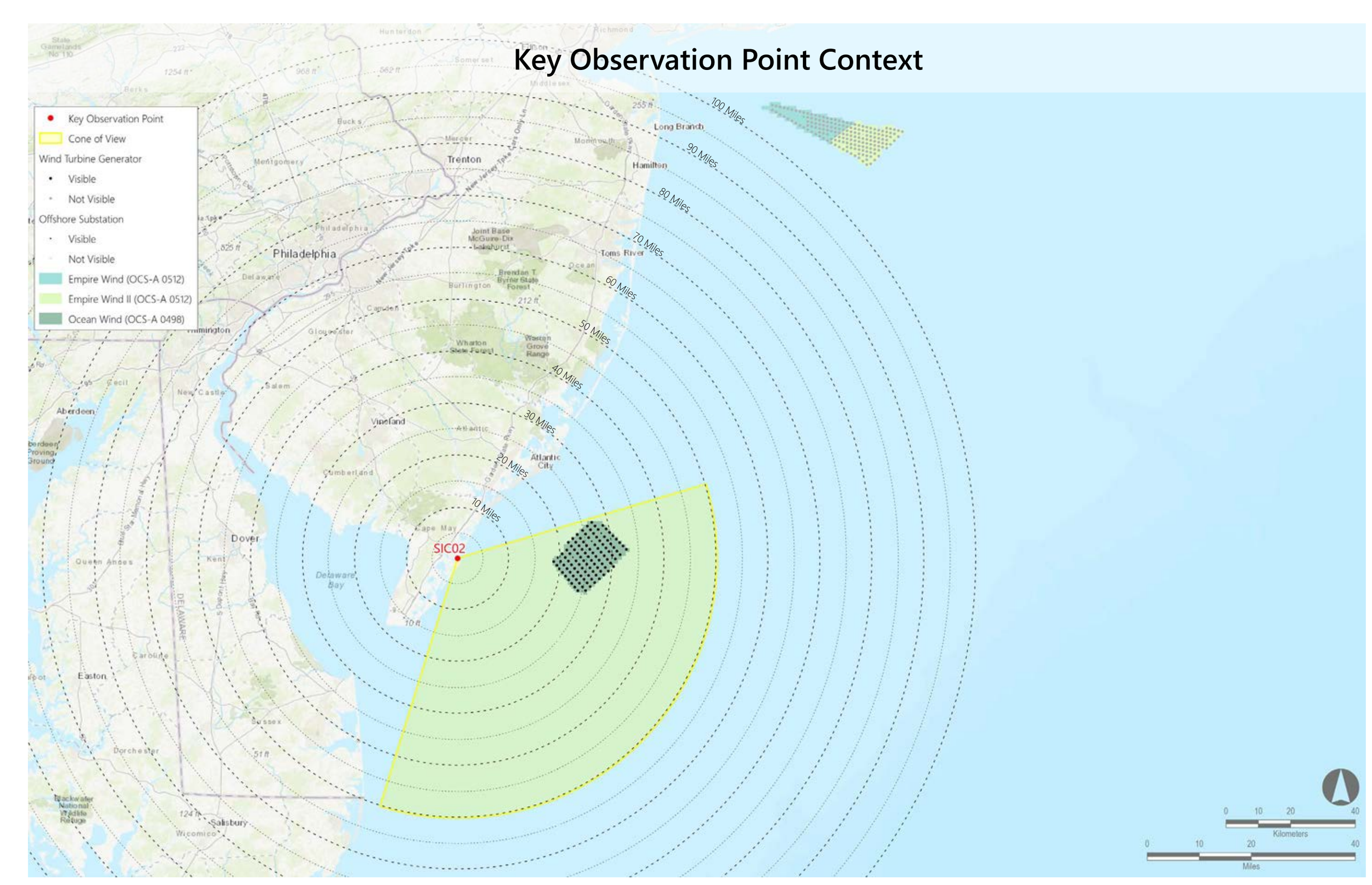
SIC02: Townsend's Inlet Bridge, Sea Isle City, Cape May County, New Jersey

Photosimulation (Panorama 2): Scenario 1: 2023-2025 Project Construction (Ocean Wind, Empire Wind, Empire Wind II)

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Ocean Wind (OCS-A 0498)	2024-2025	906	111	111	18.5	32.6
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible



Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This box should be exactly 1" long on the printed panorama

MATCH LINE SIC02 PANO #1

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

SIC02: Townsend's Inlet Bridge, Sea Isle City, Cape May County, New Jersey

Photosimulation (Panorama 2): Scenario 2: Atlantic Shores Construction (2025-2027) added to Scenario 1 (Ocean Wind, Empire Wind, Empire Wind II, Atlantic Shores South)

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

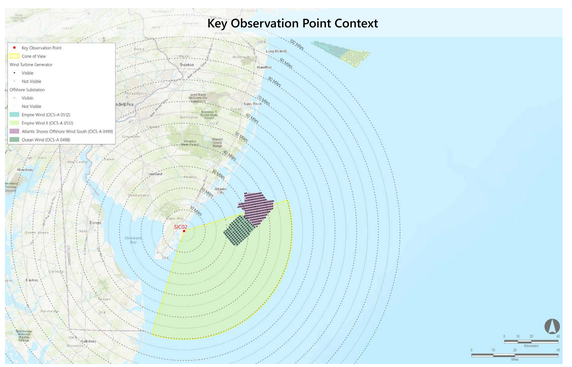
This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	200	205	27.4	43.6
Ocean Wind (OCS-A 0498)	2024-2025	906	111	111	18.5	32.6
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible

Key Observation Point Context



Key Observation Point Location

MATCH LINE SIC02 PANO #1

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

SIC02: Townsend's Inlet Bridge, Sea Isle City, Cape May County, New Jersey

Photosimulation (Panorama 2): Scenario 3: 2024-2030 Project construction added after the construction of Atlantic Shores South (Full Lease Build-out Including Atlantic Shores South)

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

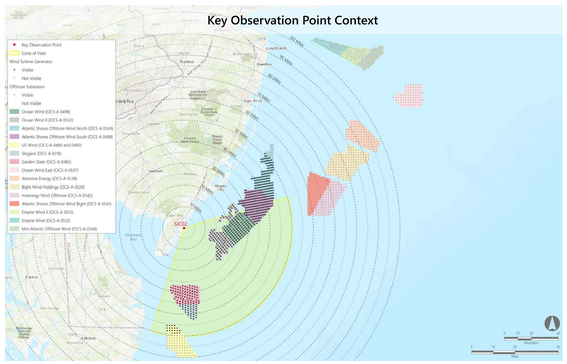
This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	200	205	27.4	43.6
Ocean Wind (OCS-A 0498)	2024-2025	906	111	111	18.5	32.6
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible
Skipjack (OCS-A 0519)	2024-2030	853	1	33	35.3	42.2
Garden State (OCS-A 0482)	2023-2030	853	62	80	26.6	35.7
US Wind (OCS-A 0489 and 0490)	2024	938	0	101	Not Visible	Not Visible
Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	134	164	37.6	51.1
Ocean Wind II (OCS-A 0532)	2026-2030	906	111	111	12.1	26.0
Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
Attentive Energy (OCS-A 0538)	by 2030	853	0	101	Not Visible	Not Visible
Bight Wind Holdings (OCS-A 0539)	by 2030	853	0	148	Not Visible	Not Visible
Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	0	95	Not Visible	Not Visible
Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	0	99	Not Visible	Not Visible

Key Observation Point Context



Key Observation Point Location

MATCH LINE SIC02 PANO #1

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

SIC02: Townsend's Inlet Bridge, Sea Isle City, Cape May County, New Jersey

Photosimulation (Panorama 2): Scenario 4: Full buildout of all lease areas without Atlantic Shores South

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

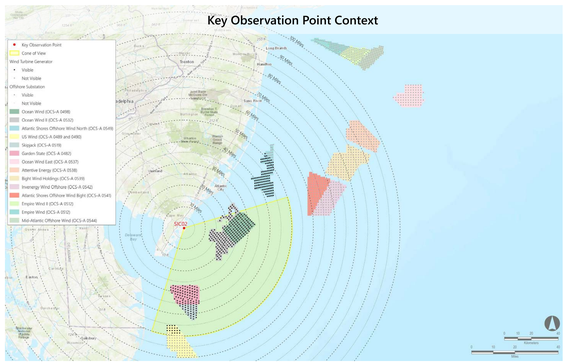
This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Ocean Wind (OCS-A 0498)	2024-2025	906	111	111	18.5	32.6
Empire Wind (OCS-A 0512)	2023-2027	951	0	72	Not Visible	Not Visible
Empire Wind II (OCS-A 0512)	2025-2027	951	0	104	Not Visible	Not Visible
Skipjack (OCS-A 0519)	2024-2030	853	1	33	35.3	42.2
Garden State (OCS-A 0482)	2023-2030	853	62	80	26.6	35.7
US Wind (OCS-A 0489 and 0490)	2024	938	0	101	Not Visible	Not Visible
Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	134	164	37.6	51.1
Ocean Wind II (OCS-A 0532)	2026-2030	906	111	111	12.1	26.0
Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
Attentive Energy (OCS-A 0538)	by 2030	853	0	101	Not Visible	Not Visible
Bight Wind Holdings (OCS-A 0539)	by 2030	853	0	148	Not Visible	Not Visible
Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	0	95	Not Visible	Not Visible
Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	0	99	Not Visible	Not Visible

Key Observation Point Context



Key Observation Point Location

MATCH LINE SIC02 PANO #1

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

SIC02: Townsend's Inlet Bridge, Sea Isle City, Cape May County, New Jersey

Photosimulation (Panorama 2): Scenario 5: Atlantic Shores South without the construction of other foreseeable planned activities

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

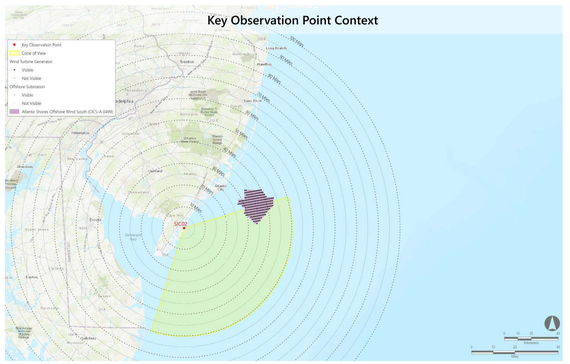
This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	200	205	27.4	43.6

Key Observation Point Context



Key Observation Point Location

SPB01: Seaside Park Beach, Seaside Park Borough, Ocean County, New Jersey

Environmental Data

Date Taken: 08/25/2022
Time: 7:05 AM
Temperature: 67°F
Humidity: 84%
Visibility*: 10+ miles
Wind Direction: West-northwest
Wind Speed: 3 mph
Conditions Observed: Fair

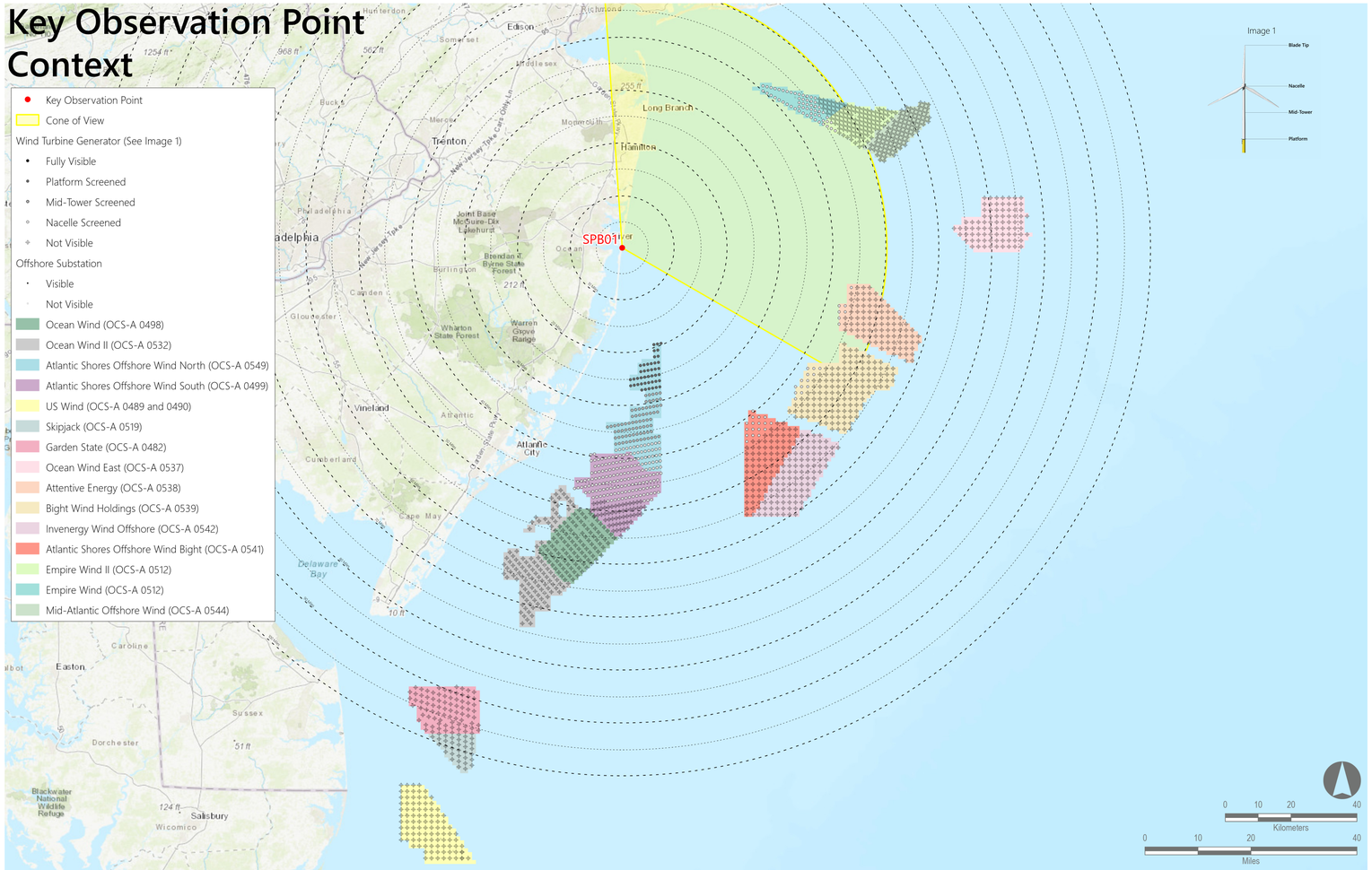
Camera Information
Camera: Canon EOS 5D Mark IV
Resolution: 30.4 Megapixels
Lens Focal Length: 50 mm
Camera Height: 16.23 feet AMSL

Key Observation Point Information

County: Ocean
Town: Seaside Park Borough
State: New Jersey
Location: Seaside Park Beach
Latitude, Longitude: 39.93530°N, 74.07163°W
Direction of View (Center): East-northeast (58.6°)
Field of View: 124° x 55°

Visual Resources
Character Area: Commercial Beachfront, Seascape (SCA)
User Group: Residents/Tourists, Fishermen
Visually Sensitive Resource: Seaside Park Beach and Boardwalk, U.S.
Life Saving Station No. 13

Key Observation Point Context



Reasonably Foreseeable Projects Represented in Photosimulation

		Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP**	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Scenario 5	Scenario 2	Atlantic Shores Offshore Wind South (OCS-A 0499)	2025-2027	1,047	118	205	39.0	48.0
Scenario 4	Scenario 1	Ocean Wind (OCS-A 0498)	2023-2025	906	0	111	Not Visible	Not Visible
		Empire Wind (OCS-A 0512)	2024-2025	951	52	72	39.8	46.1
		Empire Wind II (OCS-A 0512)	2023-2027	951	6	104	44.6	46.0
	Scenario 3	Skipjack (OCS-A 0519)	2024-2030	853	0	33	Not Visible	Not Visible
		Garden State (OCS-A 0482)	2023-2030	853	0	80	Not Visible	Not Visible
		US Wind (OCS-A 0489 and 0490)	2024	938	0	101	Not Visible	Not Visible
		Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	157	164	19.3	42.2
		Ocean Wind II (OCS-A 0532)	2026-2030	906	0	111	Not Visible	Not Visible
		Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
		Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
		Attentive Energy (OCS-A 0538)	by 2030	853	7	101	42.4	43.9
		Bight Wind Holdings (OCS-A 0539)	by 2030	853	13	148	41.8	43.8
		Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	17	95	39.5	43.9
		Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	0	99	Not Visible	Not Visible

Notes:

- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- *Historical meteorological data predicts visibility within a limit of 10 statute miles. However, visibility may extend beyond this distance. The photosimulations assume visibility extends to the limit of physical visibility (including a standard refraction index).
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- **The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

MATCH LINE SPB01 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

SPB01: Seaside Park Beach, Seaside Park Borough, Ocean County, New Jersey

Existing Conditions (Panorama 1)

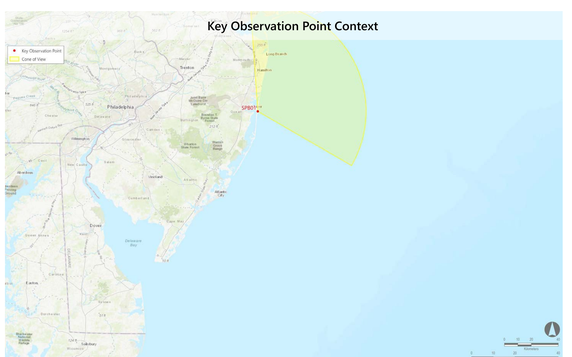
Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This box should be exactly 1" long on the printed panorama

Key Observation Point Context



Key Observation Point Location

MATCH LINE SPB01 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

SPB01: Seaside Park Beach, Seaside Park Borough, Ocean County, New Jersey

Photosimulation (Panorama 1): Scenario 1: 2023-2025 Project Construction (Ocean Wind, Empire Wind, Empire Wind II)

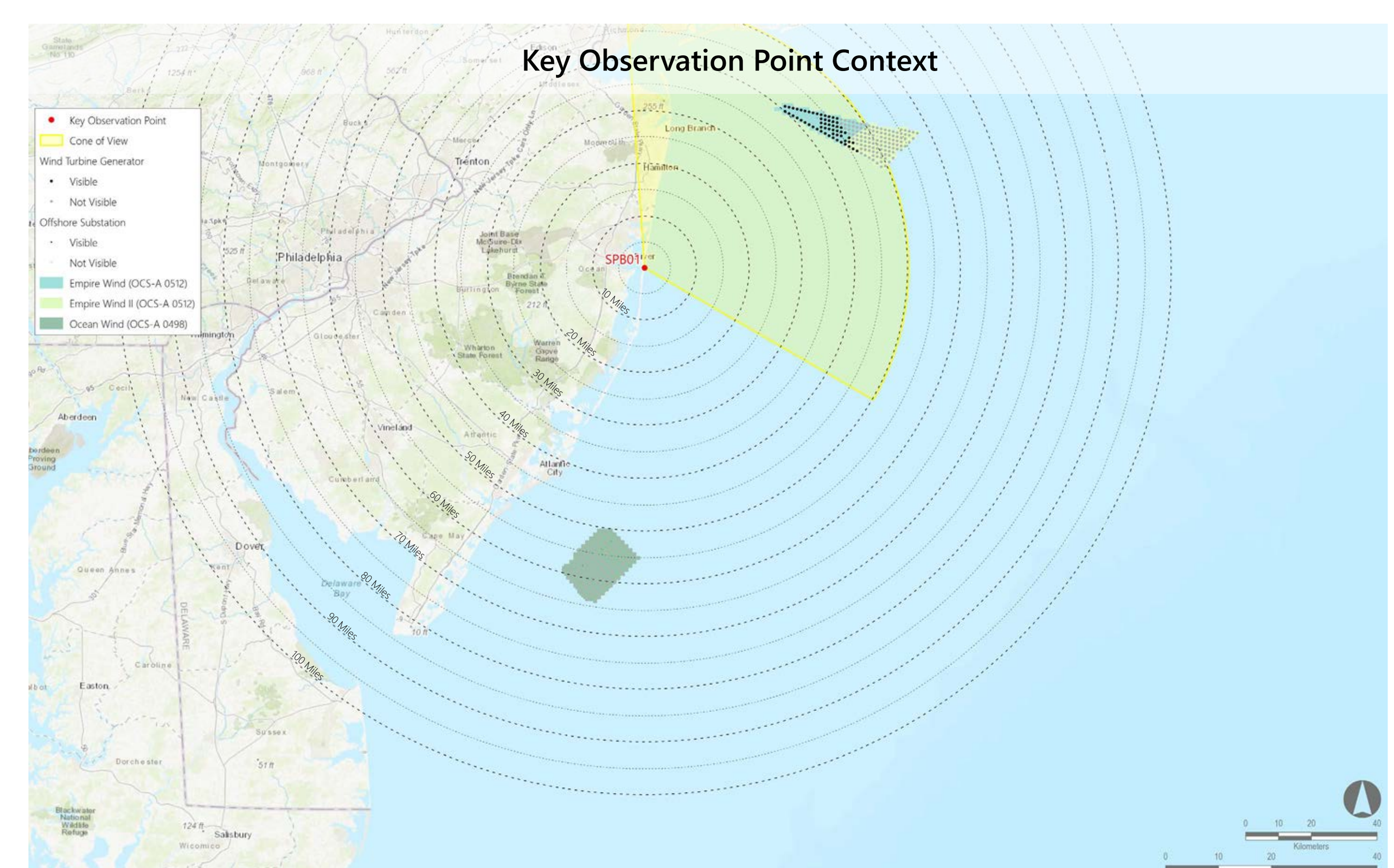
Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Ocean Wind (OCS-A 0498)	2024-2025	906	0	111	Not Visible	Not Visible
Empire Wind (OCS-A 0512)	2023-2027	951	52	72	39.8	46.1
Empire Wind II (OCS-A 0512)	2025-2027	951	6	104	44.6	46.0



MATCH LINE SPB01 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

SPB01: Seaside Park Beach, Seaside Park Borough, Ocean County, New Jersey

Photosimulation (Panorama 1): Scenario 2: Atlantic Shores Construction (2025-2027) added to Scenario 1 (Ocean Wind, Empire Wind, Empire Wind II, Atlantic Shores South)

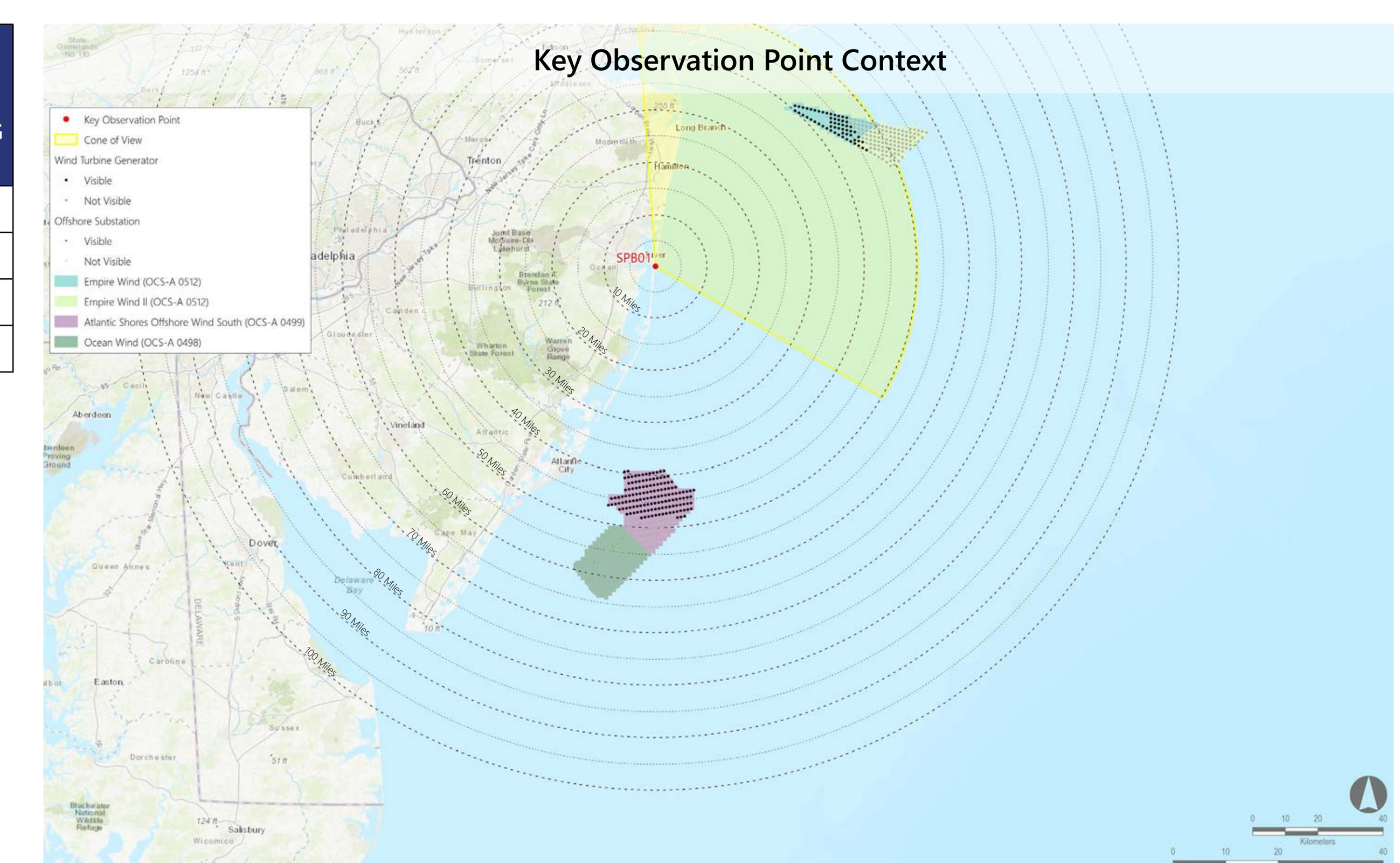
Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	118	205	39.0	48.0
Ocean Wind (OCS-A 0498)	2024-2025	906	0	111	Not Visible	Not Visible
Empire Wind (OCS-A 0512)	2023-2027	951	52	72	39.8	46.1
Empire Wind II (OCS-A 0512)	2025-2027	951	6	104	44.6	46.0



MATCH LINE SPB01 PANO #2

MATCH LINE SPB01 PANO #1

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

SPB01: Seaside Park Beach, Seaside Park Borough, Ocean County, New Jersey

Photosimulation (Panorama 1): Scenario 3: 2024-2030 Project construction added after the construction of Atlantic Shores South (Full Lease Build-out Including Atlantic Shores South)

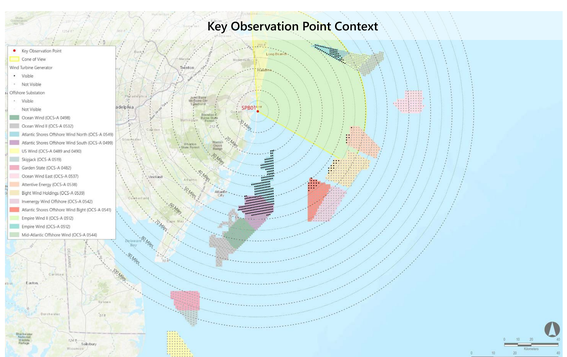
Simulation Size: 66° in width by 29.3° in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This box should be exactly 7" long on the printed panorama

Notes:

- Photosimulation Size: 66° in width by 29.3° in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	118	205	39.0	48.0
Ocean Wind (OCS-A 0498)	2024-2025	906	0	111	Not Visible	Not Visible
Empire Wind (OCS-A 0512)	2023-2027	951	52	72	39.8	46.1
Empire Wind II (OCS-A 0512)	2025-2027	951	6	104	44.6	46.0
Skipjack (OCS-A 0519)	2024-2030	853	0	33	Not Visible	Not Visible
Garden State (OCS-A 0482)	2023-2030	853	0	80	Not Visible	Not Visible
US Wind (OCS-A 0489 and 0490)	2024	938	0	101	Not Visible	Not Visible
Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	157	164	19.3	42.2
Ocean Wind II (OCS-A 0532)	2026-2030	906	0	111	Not Visible	Not Visible
Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
Attentive Energy (OCS-A 0538)	by 2030	853	7	101	42.4	43.9
Bight Wind Holdings (OCS-A 0539)	by 2030	853	13	148	41.8	43.8
Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	17	95	39.5	43.9
Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	0	99	Not Visible	Not Visible



MATCH LINE SPB01 PANO #2

MATCH LINE SPB01 PANO #1

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

SPB01: Seaside Park Beach, Seaside Park Borough, Ocean County, New Jersey

Photosimulation (Panorama 1): Scenario 4: Full buildout of all lease areas without Atlantic Shores South

Simulation Size: 66° in width by 29.3° in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

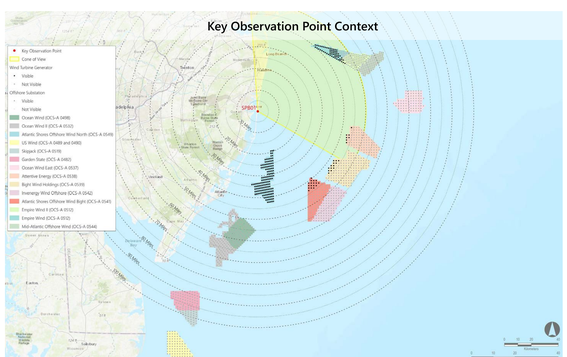
This box should be exactly 7" long on the printed panorama

Notes:

- Photosimulation Size: 66° in width by 29.3° in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Ocean Wind (OCS-A 0498)	2024-2025	906	0	111	Not Visible	Not Visible
Empire Wind (OCS-A 0512)	2023-2027	951	52	72	39.8	46.1
Empire Wind II (OCS-A 0512)	2025-2027	951	6	104	44.6	46.0
Skipjack (OCS-A 0519)	2024-2030	853	0	33	Not Visible	Not Visible
Garden State (OCS-A 0482)	2023-2030	853	0	80	Not Visible	Not Visible
US Wind (OCS-A 0489 and 0490)	2024	938	0	101	Not Visible	Not Visible
Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	157	164	19.3	42.2
Ocean Wind II (OCS-A 0532)	2026-2030	906	0	111	Not Visible	Not Visible
Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
Attentive Energy (OCS-A 0538)	by 2030	853	7	101	42.4	43.9
Bight Wind Holdings (OCS-A 0539)	by 2030	853	13	148	41.8	43.8
Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	17	95	39.5	43.9
Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	0	99	Not Visible	Not Visible

Key Observation Point Context



Key Observation Point Location

MATCH LINE SPB01 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

SPB01: Seaside Park Beach, Seaside Park Borough, Ocean County, New Jersey

Photosimulation (Panorama 1): Scenario 5: Atlantic Shores South without the construction of other foreseeable planned activities

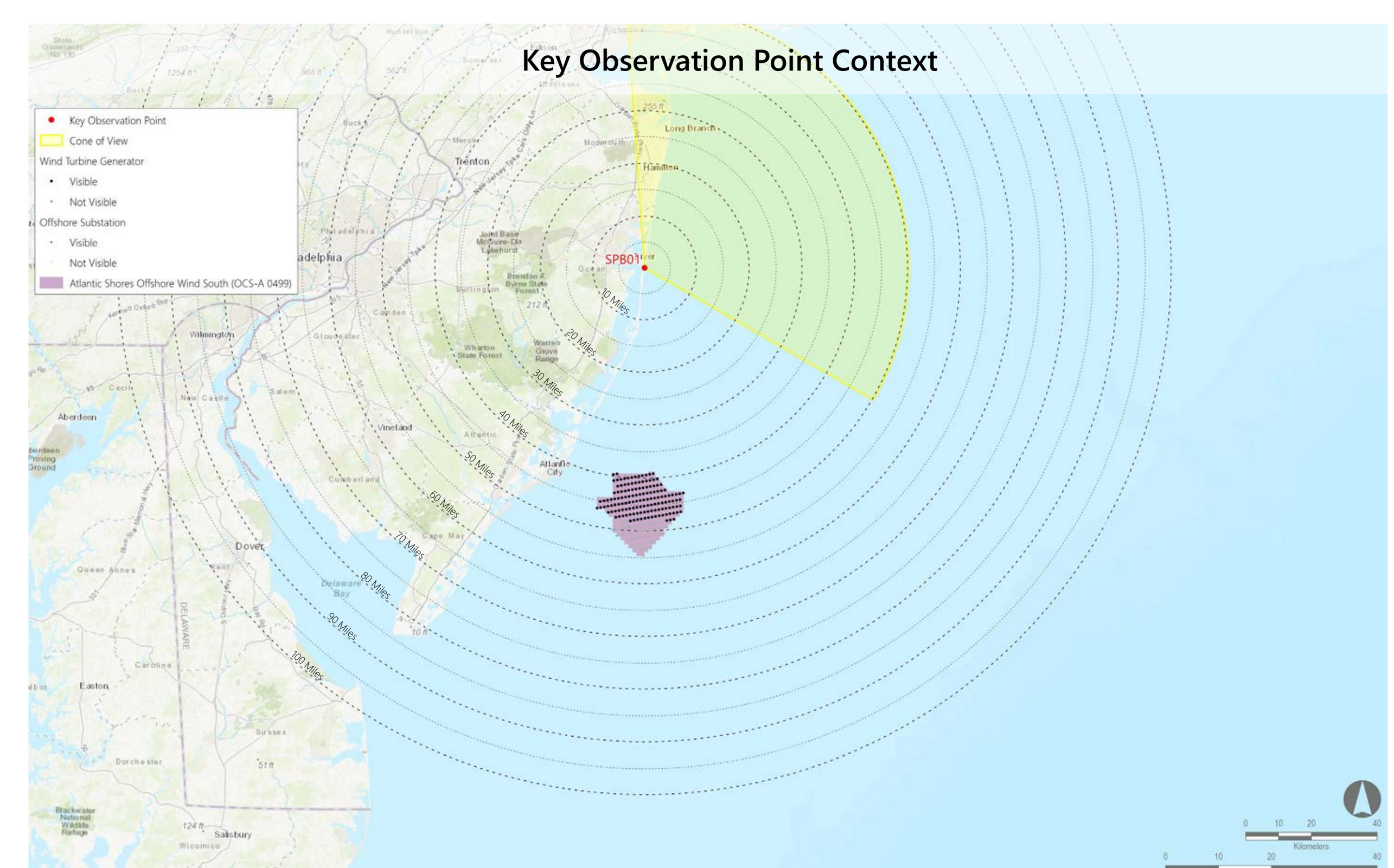
Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	118	205	39.0	48.0



SPB01: Seaside Park Beach, Seaside Park Borough, Ocean County, New Jersey

Environmental Data

Date Taken: 08/25/2022
Time: 7:05 AM
Temperature: 67°F
Humidity: 84%
Visibility*: 10+ miles
Wind Direction: West-northwest
Wind Speed: 3 mph
Conditions Observed: Fair

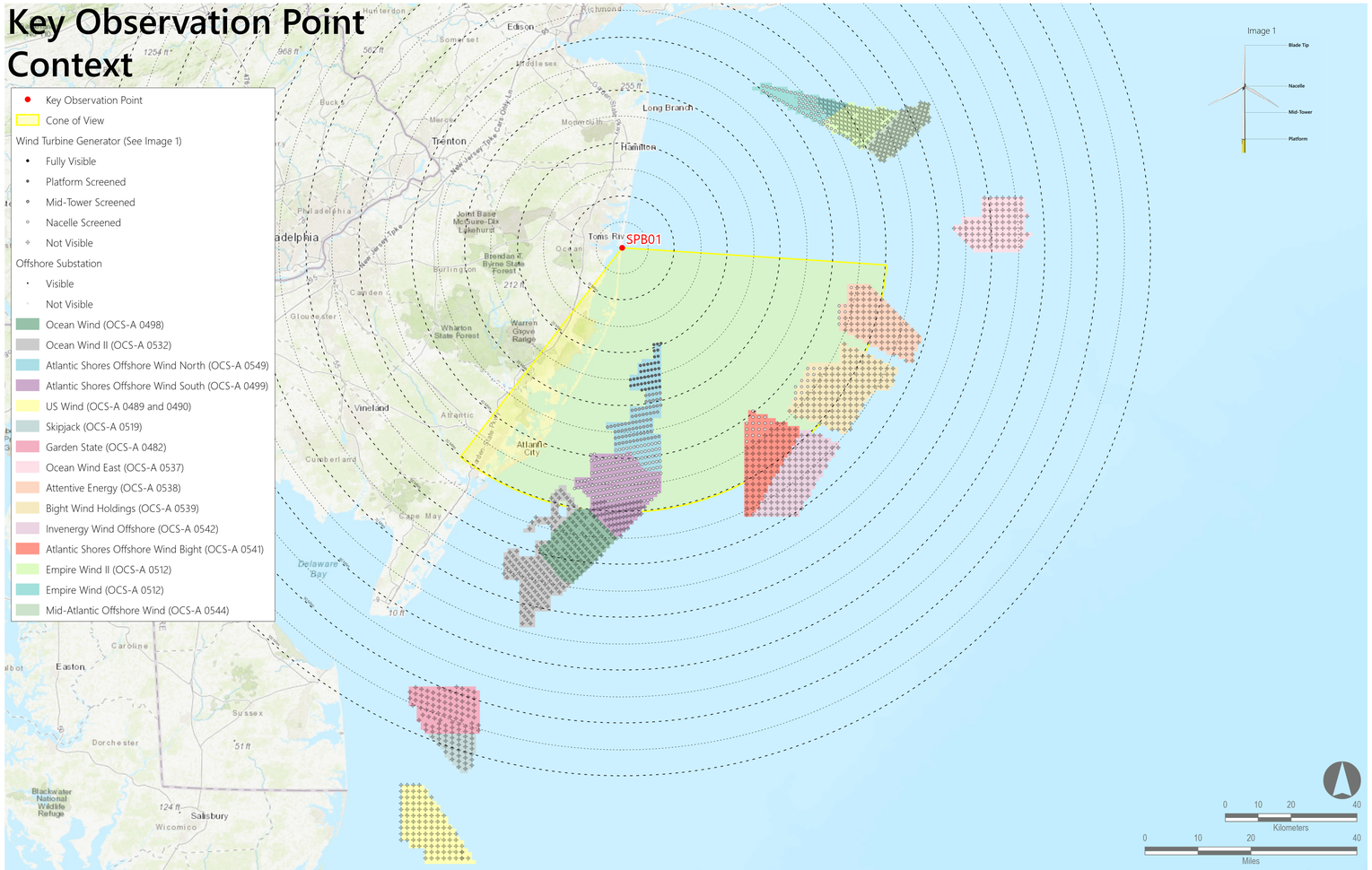
Camera Information
Camera: Canon EOS 5D Mark IV
Resolution: 30.4 Megapixels
Lens Focal Length: 50 mm
Camera Height: 16.23 feet AMSL

Key Observation Point Information

County: Ocean
Town: Seaside Park Borough
State: New Jersey
Location: Seaside Park Beach
Latitude, Longitude: 39.93530°N, 74.07163°W
Direction of View (Center): East-northeast (58.6°)
Field of View: 124° x 55°

Visual Resources
Character Area: Commercial Beachfront, Seascape (SCA)
User Group: Residents/Tourists, Fishermen
Visually Sensitive Resource: Seaside Park Beach and Boardwalk, U.S.
Life Saving Station No. 13

Key Observation Point Context



Reasonably Foreseeable Projects Represented in Photosimulation

		Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP**	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Scenario 5	Scenario 2	Atlantic Shores Offshore Wind South (OCS-A 0499)	2025-2027	1,047	118	205	39.0	48.0
Scenario 4	Scenario 1	Ocean Wind (OCS-A 0498)	2023-2025	906	0	111	Not Visible	Not Visible
		Empire Wind (OCS-A 0512)	2024-2025	951	52	72	39.8	46.1
		Empire Wind II (OCS-A 0512)	2023-2027	951	6	104	44.6	46.0
	Scenario 3	Skipjack (OCS-A 0519)	2024-2030	853	0	33	Not Visible	Not Visible
		Garden State (OCS-A 0482)	2023-2030	853	0	80	Not Visible	Not Visible
		US Wind (OCS-A 0489 and 0490)	2024	938	0	101	Not Visible	Not Visible
		Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	157	164	19.3	42.2
		Ocean Wind II (OCS-A 0532)	2026-2030	906	0	111	Not Visible	Not Visible
		Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
		Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
		Attentive Energy (OCS-A 0538)	by 2030	853	7	101	42.4	43.9
		Bight Wind Holdings (OCS-A 0539)	by 2030	853	13	148	41.8	43.8
		Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	17	95	39.5	43.9
		Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	0	99	Not Visible	Not Visible

Notes:

- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- *Historical meteorological data predicts visibility within a limit of 10 statute miles. However, visibility may extend beyond this distance. The photosimulations assume visibility extends to the limit of physical visibility (including a standard refraction index).
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- **The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

MATCH LINE SPB01 PANO #1

MATCH LINE SPB01 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

SPB01: Seaside Park Beach, Seaside Park Borough, Ocean County, New Jersey

Existing Conditions (Panorama 2)

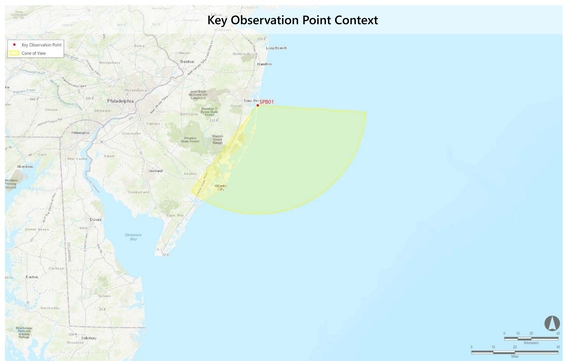
Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This box should be exactly 1" long on the printed panorama

Key Observation Point Context



Key Observation Point Location

MATCH LINE SPB01 PANO #1

MATCH LINE SPB01 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

SPB01: Seaside Park Beach, Seaside Park Borough, Ocean County, New Jersey

Photosimulation (Panorama 2): Scenario 1: 2023-2025 Project Construction (Ocean Wind, Empire Wind, Empire Wind II)

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

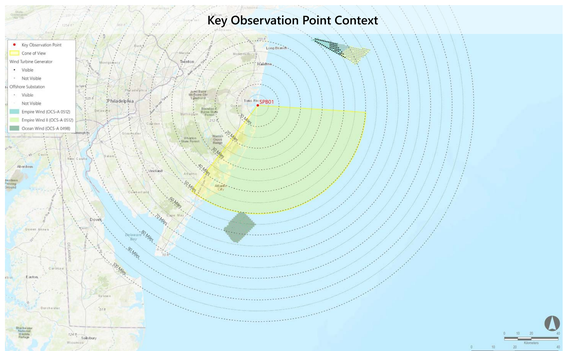
This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Ocean Wind (OCS-A 0498)	2024-2025	906	0	111	Not Visible	Not Visible
Empire Wind (OCS-A 0512)	2023-2027	951	52	72	39.8	46.1
Empire Wind II (OCS-A 0512)	2025-2027	951	6	104	44.6	46.0

Key Observation Point Context



Key Observation Point Location

MATCH LINE SPB01 PANO #1

MATCH LINE SPB01 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

SPB01: Seaside Park Beach, Seaside Park Borough, Ocean County, New Jersey

Photosimulation (Panorama 2): Scenario 2: Atlantic Shores Construction (2025-2027) added to Scenario 1 (Ocean Wind, Empire Wind, Empire Wind II, Atlantic Shores South)

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

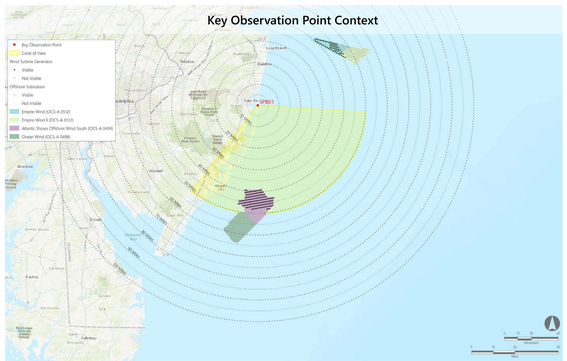
This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	118	205	39.0	48.0
Ocean Wind (OCS-A 0498)	2024-2025	906	0	111	Not Visible	Not Visible
Empire Wind (OCS-A 0512)	2023-2027	951	52	72	39.8	46.1
Empire Wind II (OCS-A 0512)	2025-2027	951	6	104	44.6	46.0

Key Observation Point Context



Key Observation Point Location

MATCH LINE SPB01 PANO #1

MATCH LINE SPB01 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

SPB01: Seaside Park Beach, Seaside Park Borough, Ocean County, New Jersey

Photosimulation (Panorama 2): Scenario 3: 2024-2030 Project construction added after the construction of Atlantic Shores South (Full Lease Build-out Including Atlantic Shores South)

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

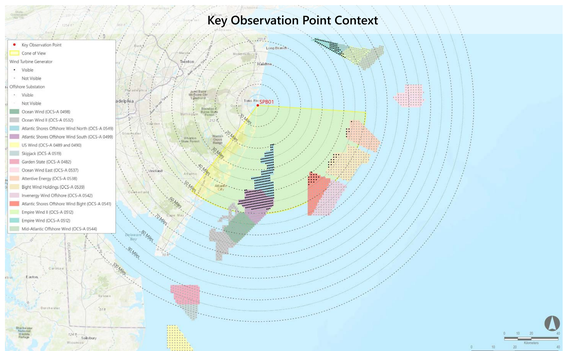
This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	118	205	39.0	48.0
Ocean Wind (OCS-A 0498)	2024-2025	906	0	111	Not Visible	Not Visible
Empire Wind (OCS-A 0512)	2023-2027	951	52	72	39.8	46.1
Empire Wind II (OCS-A 0512)	2025-2027	951	6	104	44.6	46.0
Skipjack (OCS-A 0519)	2024-2030	853	0	33	Not Visible	Not Visible
Garden State (OCS-A 0482)	2023-2030	853	0	80	Not Visible	Not Visible
US Wind (OCS-A 0489 and 0490)	2024	938	0	101	Not Visible	Not Visible
Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	157	164	19.3	42.2
Ocean Wind II (OCS-A 0532)	2026-2030	906	0	111	Not Visible	Not Visible
Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
Attentive Energy (OCS-A 0538)	by 2030	853	7	101	42.4	43.9
Bight Wind Holdings (OCS-A 0539)	by 2030	853	13	148	41.8	43.8
Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	17	95	39.5	43.9
Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	0	99	Not Visible	Not Visible

Key Observation Point Context



Key Observation Point Location

MATCH LINE SPB01 PANO #1

MATCH LINE SPB01 PANO #1

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

SPB01: Seaside Park Beach, Seaside Park Borough, Ocean County, New Jersey

Photosimulation (Panorama 2): Scenario 4: Full buildout of all lease areas without Atlantic Shores South

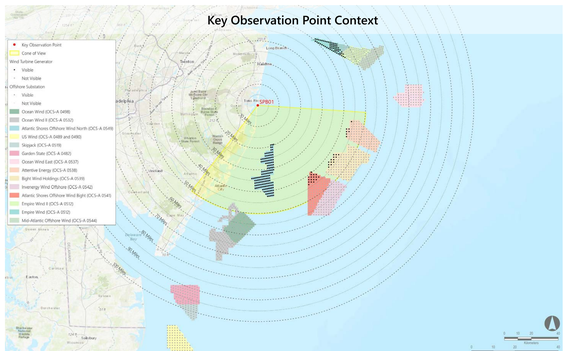
Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Ocean Wind (OCS-A 0498)	2024-2025	906	0	111	Not Visible	Not Visible
Empire Wind (OCS-A 0512)	2023-2027	951	52	72	39.8	46.1
Empire Wind II (OCS-A 0512)	2025-2027	951	6	104	44.6	46.0
Skipjack (OCS-A 0519)	2024-2030	853	0	33	Not Visible	Not Visible
Garden State (OCS-A 0482)	2023-2030	853	0	80	Not Visible	Not Visible
US Wind (OCS-A 0489 and 0490)	2024	938	0	101	Not Visible	Not Visible
Atlantic Shores Offshore Wind North (OCS-A 0549)	2025-2030	1,047	157	164	19.3	42.2
Ocean Wind II (OCS-A 0532)	2026-2030	906	0	111	Not Visible	Not Visible
Mid-Atlantic Offshore Wind (OCS-A 0544)	by 2030	853	0	104	Not Visible	Not Visible
Ocean Wind East (OCS-A 0537)	by 2030	853	0	82	Not Visible	Not Visible
Attentive Energy (OCS-A 0538)	by 2030	853	7	101	42.4	43.9
Bight Wind Holdings (OCS-A 0539)	by 2030	853	13	148	41.8	43.8
Atlantic Shores Offshore Wind Bight (OCS-A 0541)	by 2030	853	17	95	39.5	43.9
Invenergy Wind Offshore (OCS-A 0542)	by 2030	853	0	99	Not Visible	Not Visible



MATCH LINE SPB01 PANO #1

MATCH LINE SPB01 PANO #2

ATLANTIC SHORES offshore wind

Appendix A: Atlantic Shores Offshore Wind Cumulative Photosimulations

SPB01: Seaside Park Beach, Seaside Park Borough, Ocean County, New Jersey

Photosimulation (Panorama 2): Scenario 5: Atlantic Shores South without the construction of other foreseeable planned activities

Simulation Size: 66" in width by 29.3" in height. Images should be viewed from a distance of 18 inches in order to obtain the proper perspective.

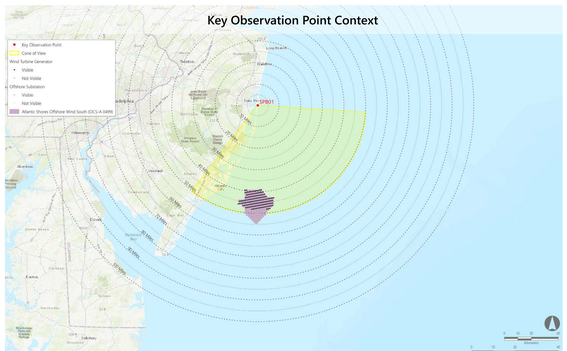
This box should be exactly 1" long on the printed panorama

Notes:

- Photosimulation Size: 66" in width by 29.3" in height. Images should be viewed from 18 inches in order to obtain the proper perspective. For on-screen viewing, user should zoom in until the 1-inch scale equals exactly one inch when measured on the screen.
- Offshore Substation location and dimensions are based on preliminary publicly available project data. Projects for which this data is not currently available, WTGs are used for all foundation positions. OSS positions and dimensions considered in this photosimulation are subject to potential modification.
- WTG positions in the photosimulations are based on a refraction value of 7/6 or an approximate 0.14 coefficient derived from observations of the constructed Block Island Wind Farm. This refraction coefficient may yield more conservative visibility results (i.e. greater turbine visibility) that the viewshed analysis results which use a refraction coefficient of 0.13.
- WTG tower, blades, and nacelle use the BOEM and FAA required color RAL 9010. The base and platform use RAL 1023 in accordance with USCG regulations.
- *The number of WTGs visible from the KOP was determined by human verified computer generated counts performed in the 3D camera views considering screening resulting from vegetation, structures, curvature of the earth and refraction. This count may vary from the actual number of WTGs visible in the respective views due to masking completed during post processing which may include people, waves, boats, or other minor obstructions that appear in the photograph. Additionally, the WTG counts assumed the WTG blades are in the upright position whereas the photosimulations assume a random rotation pattern. Considering the largest WTG in the cumulative array, this could account for up to 236 ft. (72 m) in lost maximum height depending on the rotation position.
- The cone of view indicated on the Key Observation Point Context map indicates the horizontal extent of view only and does not indicate the extent of WTG visibility.
- The resolution of the cumulative photosimulations balances the size and usability of the documents with the need for high resolution to see distant project components. Similarly to human vision, very distant turbines may appear blurry or difficult to decipher due to resolution limitations.
- The Key Observation Point Context map considers screening by curvature of the earth, viewer height, and turbine height. Landscape screening features are not considered. Therefore, in this view, the number of visible turbines depicted on the map may not match the table due to the presence of landscape screening features.

Project	Year of Development	Max Blade Tip Height (feet)	Potential Number of WTGs & OSSs Visible from KOP*	Total Number of WTGs & OSSs in Project	Theoretical Distance to Nearest Visible WTG (miles)	Theoretical Distance to Furthest Visible WTG (miles)
Atlantic Shores Offshore Wind South (OCS-A 0499)	2023-2025	1,047	118	205	39.0	48.0

Key Observation Point Context



Key Observation Point Location

APPENDIX D

Key Personnel Resumes

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Years of Experience

Professional start date: 05/2018
ICF start date: 11/2021

Education

MS, Historic Preservation, University of Vermont, 2018

MA, Humanities, University of Louisville, 2013

BA, Art History & Humanities, University of Louisville, 2011

Certifications/Registrations

Secretary of the Interior-qualified Architectural Historian

Professional Affiliations

Transportation Research Board, Committee on Historic and Archaeological Preservation in Transportation, 2019-present

Member, Vernacular Architecture Forum, 2020-present

Member, Preservation Delaware, 2020-present

Member, U.S. National Committee of the International Council on Monuments and Sites, 2017-2019.

Maureen R. McCoy, MSHP & MA

Historic Preservation Specialist, Architectural Historian

Maureen R. McCoy is an Architectural Historian with experience working with federal and state agencies on projects that comply with the National Environmental Policy Act (NEPA), Section 106 of the National Historic Preservation Act (NHPA), and Section 4(f) of the Department of Transportation Act of 1966. She has served as a subject matter expert and authored architectural history reports for projects in the New England and Mid-Atlantic regions, including cultural resource survey reports and evaluations of properties from the National Register of Historic Places (NRHP). She has experience in assessing and mitigating environmental and cultural impacts from infrastructure projects from the initial design stage through construction monitoring. Through a combination of experience and education, she meets the professional qualifications of the Secretary of the Interior for architectural history and history.

Project Experience Examples

Offshore Wind Energy

Atlantic Shores Offshore Wind Energy Project—Bureau of Ocean Energy Management (BOEM), New Jersey, 11/2021 – Present

Historic Preservation Specialist. Maureen assists with multiple aspects of the NEPA and Section 106 processes for this project to construct up to 200 wind turbine generators (WTGs) off the coast of New Jersey. She developed the Section 106 Consultation Plan, assists with consulting party coordination, provides sufficiency reviews of the Construction and Operations Plan (COP), co-authored the cultural resources chapter of the Environmental Impact Statement (EIS) and Section 106 Finding of Effect (FOE), wrote the Cumulative Historic Resources Visual Effects Analysis (CHVREA), and is assisting with the development of a Memorandum of Agreement (MOA).

Coastal Virginia Offshore Wind Commercial (CVOW-C) Project—BOEM, Virginia, 11/2021 – Present

Historic Preservation Specialist. Maureen assists with multiple aspects of the NEPA and Section 106 processes for this project, which involves the construction of up to 205 WTGs off the coast of Virginia. She co-authored the cultural resources chapter of the EIS and FOE, organizes consulting party meetings, wrote the CHRVEA, and is assisting with MOA development.

Kitty Hawk Offshore Wind Project—BOEM, Virginia, North Carolina, 12/2021 – Present

Historic Preservation Specialist. Maureen assists with multiple aspects of the NEPA and Section 106 processes for this project, which involves the construction of up to 69 WTGs off the coasts of North Carolina and Virginia. She is co-authoring the cultural resources chapter of the EIS and FOE and organizing consulting party meetings.

Mayflower Offshore Wind Project—BOEM, Massachusetts and Rhode Island, 03/2022 – Present

Historic Preservation Specialist. Maureen assists with multiple aspects of the NEPA and Section 106 processes for this project, which involves the construction of WTGs off the coasts of Rhode Island and Massachusetts. She co-authored the cultural resources chapter of the EIS and FOE, organizes consulting party meetings, wrote the CHRVEA, and is assisting with MOA development.

Federal Programs

Cultural Heritage Guidance—United States Agency for International Development (USAID), 01/2022 – Present

Historic Preservation Specialist. Maureen is developing a document to provide USAID mission and project managers with guidance and best practices for considering cultural heritage impacts within the USAID environmental review process. This includes an overview of cultural heritage considerations in a global setting, advice on sources of information on sites and their significance, and recommendations for how to work with local communities and understand and address project impacts on cultural heritage.

Educational Mitigation

Stairway of Power Documentary—Pacific Gas and Electric (PG&E), California, 05/2022 – Present

Historic Preservation Specialist. Maureen developed the narrative script for this documentary and conducted research to inform the script and contribute historic visual resources to the video. This documentary is being produced in accordance with a MOA between the United States Forest Service (USFS), California State Historic Preservation Officer, and PG&E as a mitigation measure to resolve the adverse effect on the Caribou-Big Bend 115kV transmission line from the decommissioning and removal of the line.

Transportation—Roads, Bridges, Highways

Georgetown Transportation Hub—Federal Transit Administration (FTA) and DelDOT, Georgetown, DE, 07/2021 – 10/2021

Environmental Specialist. While employed by DelDOT, Maureen provided an expedited Section 106 review process for a new transit facility in coordination with FTA and DE SHPO that resulted in a conditional FOE. She conducted an architectural survey and compiled a report with property evaluations and recommendations for eligibility of each property for the NRHP to fulfill the conditions of the finding within the expedited funding timeframe.

West Camden Bypass, East Camden Bypass, and US 13 Widening from Lochmeath Way to Walnut Shade to Loch—FHWA and DelDOT, Newark, DE, 05/2020 –10/2021

Environmental Specialist. While employed by DelDOT, Maureen facilitated all aspects of the Section 106 documentation and coordination for this project. She provided technical direction, task management, and quality control of deliverables during the production of a consultant-led architectural survey of the three adjacent project areas. She coordinated with consulting parties about the findings of this survey and prepared the FOEs for all three projects. The East Camden Bypass resulted in an Adverse Effect and Memorandum of Agreement, and Maureen prepared the ACHP notification documents for this project.

Employment History

ICF International. Historic Preservation Specialist. Elkton, Maryland. 11/2021 – Present.
Delaware Department of Transportation. Environmental Specialist III. Dover, Delaware. 01/2019 – 10/2021.
International Council on Monuments and Sites. US/ICOMOS International Exchange Program Intern. Charenton-le-pont, France. 05/2018-08/2018.
University of Vermont. Graduate Writing Consultant. Burlington, Vermont. 08/2017 – 12/2018.
University of Louisville. Program Coordinator. Louisville, Kentucky. 08/2015 – 08/2017.
Bellarmine University. Tutor Coordinator. Louisville, Kentucky. 06/2013 – 07/2015.

Years of Experience
Professional start date: 03/2014
ICF start date: 11/2021

Education
MA, Anthropology, Southern Illinois University Carbondale (SIUC), 2018

BA, Anthropology, University of Illinois at Chicago (UIC), 2012

Registrations
Registered Professional Archaeologist (RPA #17419)

Professional Affiliations
Member, Southeastern Archaeological Conference (SEAC), 2016 - Present

Alice Muntz, MA, RPA

Senior Archaeologist

Alice Muntz is an archaeologist with nine years' experience in cultural resource management and archaeological regulatory compliance. Alice's technical expertise is derived from involvement in a variety of cultural resource and historic property identification, evaluation, and mitigation efforts and effects assessments per NEPA, Section 106 of the NHPA, and due diligence. Projects include those in the energy generation and transmission (renewables and non-renewables), telecommunications, transportation, and general land development (commercial, industrial, and residential) industries primarily located in the mid-Atlantic, midwestern, and southeastern U.S. In addition to cultural resource fieldwork experience, Alice is proficient in the production of cultural resource technical reports; archaeological data analysis and interpretation; GIS analysis and visualization; and NHPA consultations with state and tribal historic preservation offices (SHPOs and THPOs) and other consulting parties. Alice meets the Secretary of Interior's Professional Standards for Archaeology and is an RPA.

Project Experience

Energy Generation and Transmission—Renewables

Section 106 Support Services BPA – U.S. Bureau of Ocean Energy Management (BOEM); U.S.; 01/2022 - Present

Senior Archaeologist. ICF is supporting BOEM on a range of Section 106 tasks that will guide proposed offshore wind energy projects throughout the country. Alice is specifically revising BOEM's guidelines for archaeological and historic property identification and crafting guidance for BOEM's sufficiency reviews of cultural resource studies.

Atlantic Shores South—BOEM; NJ; 11/2021 – Present

Section 106 Technical Lead and Senior Archaeologist. ICF is providing third-party support to BOEM in its NEPA and Section 106 reviews. As the Section 106 technical lead, Alice is providing archaeology and consultation technical oversight in BOEM's assessments of Atlantic Shores' Construction and Operations Plan (COP) and cultural resource identification efforts. Tasks include reviewing marine archaeological, terrestrial archaeological, and historic aboveground resources assessments; advising BOEM in its development of the area of potential effects (APE), findings of effect (FOE) on historic properties, and memorandum of agreement (MOA); facilitating consultation, including with SHPOs and THPOs/Tribes; and preparing Environmental Impact Statement (EIS) and Section 106 documents.

Beacon Wind Project—BOEM; CT, MA, NY, RI; 07/2022 – Present

Section 106 Technical Lead and Senior Archaeologist. ICF is providing third-party support to BOEM in its NEPA and Section 106 reviews. As the Section 106 technical lead, Alice is providing archaeology and consultation technical oversight in BOEM's assessments of Beacon Wind's COP and cultural resource identification efforts. Tasks include reviewing marine archaeological, terrestrial archaeological, and historic aboveground resources assessments; advising BOEM in its development of the APE and FOE on historic properties; facilitating consultation, including with SHPOs and THPOs/Tribes; and preparing EIS and Section 106 documents.

Coastal Virginia Offshore Wind Commercial Project—BOEM; NC, VA; 11/2021 – Present

Senior Archaeologist. ICF is providing third-party support to BOEM in its NEPA and Section 106 reviews. As lead archaeologist, Alice is providing BOEM with archaeology and consultation technical support for assessments of Dominion Energy's COP and cultural resource identification efforts. Tasks include reviewing marine and terrestrial archaeological resources assessments; advising BOEM in its development of the APE and findings of effect on historic properties; facilitating consultation, including with SHPOs and THPOs/Tribes; and preparing EIS and Section 106 documents.

Empire Wind Energy Project—BOEM; NJ, NY; 01/2022 – Present

Senior Archaeologist. ICF is providing third-party support to BOEM in its NEPA and Section 106 reviews. As lead archaeologist, Alice is providing BOEM with archaeology technical support for assessments of Empire Wind's COP and cultural resource identification efforts. Tasks include reviewing marine and terrestrial archaeological resources assessments; advising BOEM in its development of the APE and findings of effect on historic properties; and preparing EIS and Section 106 documents.

Kitty Hawk North Offshore Wind Project—BOEM; NC, VA; 11/2021 – Present

Senior Archaeologist. ICF is providing third-party support to BOEM in its NEPA and Section 106 reviews. As lead archaeologist, Alice is providing BOEM with archaeology and consultation technical support for assessments of Kitty Hawk's COP and cultural resource identification efforts. Tasks include reviewing marine and terrestrial archaeological resources assessments; advising BOEM in its development of the APE and findings of effect on historic properties; facilitating consultation, including with SHPOs and THPOs/Tribes; and preparing EIS and Section 106 documents.

Mayflower Wind Energy Project—BOEM; MA, RI; 03/2022 – Present

Senior Archaeologist. ICF is providing third-party support to BOEM in its NEPA and Section 106 reviews. As lead archaeologist, Alice is providing BOEM with archaeology and consultation technical support for assessments of Mayflower Wind's COP and cultural resource identification efforts. Tasks include reviewing marine and terrestrial archaeological resources assessments; advising BOEM in its development of the APE and findings of effect on historic properties; facilitating consultation, including with SHPOs and THPOs/Tribes; and preparing EIS and Section 106 documents.

New York Bight Programmatic Environmental Impact Statement (PEIS) —BOEM; NJ, NY; 08/2022 – Present

Senior Archaeologist. ICF is providing third-party support to BOEM in its NEPA and Section 106 reviews of planned offshore wind project development in six offshore lease areas in the New York Bight. As lead archaeologist, Alice is providing BOEM with archaeology and consultation technical support. Tasks include developing key observation points to facilitate analysis in the PEIS; completing preliminary cultural resource identification; advising BOEM in its development of the programmatic APE; facilitating consultation, including with SHPOs and THPOs/Tribes; and preparing PEIS and Section 106 documents.

Ocean Wind 1 Project—BOEM; NJ; 03/2022 – Present

Senior Archaeologist. ICF is providing third-party support to BOEM in its NEPA and Section 106 reviews. As a supporting archaeologist, Alice is providing BOEM with archaeology technical support for assessments of Ocean Wind's COP and cultural resource identification efforts. Tasks include reviewing marine and terrestrial archaeological resources assessments and contributing to EIS and Section 106 documents.

Unlisted Solar Power Development Project—BrightNight; ID; 02/2020 – 03/2020

Archaeologist. While employed by ERM, Alice completed due diligence desktop archaeological assessment, preliminary historic property identification, and cultural resource reporting.

Waymart II Onshore Wind Farm Project—NextEra Energy; PA; 01/2019

Cultural Resource Specialist. While employed by ERM, Alice created supporting figures and materials for use in the historic architecture survey report.

Energy Generation and Transmission—Non-Renewables

Line KA-VA Pipeline Project—TC Energy/Columbia Gas; VA, WV; 07/2021 – 10/2021

Archaeologist. While employed by ERM, Alice conducted Phase I archaeological surveys and associated technical reporting.

Ohio O&M Program—TC Energy/Columbia Gas; OH; 10/2019 – 10/2021

Archaeologist/Principal Investigator. While employed by ERM, Alice contributed to or oversaw a variety of cultural resource compliance tasks for ~40 new or existing pipeline infrastructure projects. Responsibilities included development of projects' APEs, preliminary historic property identification, GIS modeling of archaeological sensitivity, Phase I archaeological and architectural surveys, artifact analysis, landowner communications and artifact returns, technical reporting, and SHPO consultation.

Virginia Reliability Project—TC Energy/Columbia Gas; VA; 08/2021 – 09/2021

Archaeologist. While employed by ERM, Alice conducted Phase I archaeological surveys.

Alliance Pipeline—Enbridge Inc.; IL; 05/2021 – 06/2021

Archaeological Crew Chief. While employed by ERM, Alice oversaw and conducted Phase I archaeological and architectural surveys in Grundy and Will Counties. Responsibilities included cultural resource documentation, artifact analysis, and technical reporting.

Atlantic Coast Pipeline and Supply Header Project—Dominion Energy Inc.; NC, PA, VA, WV; 07/2015 – 08/2016; 05/2018 – 06/2021

Archaeological Field Director (most recent role). While employed by NRG (now ERM), Alice contributed to or oversaw numerous cultural resource compliance needs for the proposed 600-mile natural gas pipeline project. Responsibilities included Phase I archaeological and architectural surveys; Phase II archaeological evaluations; Phase III archaeological mitigations; architectural mitigation/rehabilitation; artifact analysis and curation; and technical reporting on all phases of investigation. Alice managed crews of up to 25 people.

Unlisted Energy Transmission Projects (Multiple)—American Electric Power; IN; 08/2020 – 05/2021

Archaeologist. While employed by ERM, Alice completed due diligence desktop archaeological assessment, preliminary historic property identification, and reports for several potential project locations.

Unlisted Horizontal Directional Drilling Projects (Multiple)—OneOK; MO; 12/2020 – 02/2021

Archaeologist/Principal Investigator. While employed by ERM, Alice oversaw and conducted several cultural resource compliance tasks for modifications to existing pipeline infrastructure at water crossings for U.S. Army Corps of Engineers (USACE) permitting per Section 404 of the Clean Water Act. Responsibilities included cultural resource background research, Phase I archaeological and architectural survey, artifact analysis, technical reporting, and other Section 106 deliverable production.

Line 5 Segment Relocation—Enbridge, Inc.; WI; 05/2020 – 08/2020

Archaeological Crew Chief. While employed by ERM, Alice oversaw a crew of three archaeologists and worked with a tribal monitor in completion of Phase I archaeological survey for a proposed 50-mile crude oil pipeline. Alice also worked with a team of cultural resource specialists on technical report preparation.

Marshall Steam Station Expansion —Duke Energy; NC; 07/2020 – 08/2020

Archaeologist. While employed by ERM, Alice oversaw and conducted several cemetery delineation and documentation efforts and contributed to technical reporting.

Delta Pipeline Project—Venture Global; LA; 06/2019 – 01/2020

Archaeological Crew Chief. While employed by ERM, Alice oversaw a crew of 5 archaeologists in completion of Phase I archaeological and architectural survey for a proposed 300-mile natural gas pipeline. Alice conducted cultural resource documentation, artifact analysis, and technical reporting.

Liberty Pipeline Project—Phillips 66; CO, KS, OK, WY; 08/2019 – 01/2020

Archaeological Crew Chief. While employed by ERM, Alice oversaw crews of 3 to 15 archaeologists in completion of Phase I archaeological and architectural survey for a proposed 720-mile crude oil pipeline. Alice conducted cultural resource documentation, artifact analysis, and technical reporting.

Bremo Borrow Area Project—Dominion Energy; VA; 06/2019

Archaeologist. While employed by ERM, Alice conducted Phase I archaeological survey.

Mountaineer Xpress Pipeline—Columbia Gas; WV; 06/2019

Archaeological Crew Chief. While employed by ERM, Alice oversaw and conducted Phase I archaeological survey for limited remaining unsurvey areas of a proposed 170-mile natural gas pipeline.

North Line 7 Extension Project—OneOK; KS, OK; 04/2019 – 05/2019

Archaeologist. While employed by ERM, Alice worked with a crew to complete Phase I archaeological survey for a proposed 100-mile pipeline extension.

Arbuckle II Pipeline—OneOK; OK, TX; 07/2018 – 01/2019

Archaeologist. While employed by ERM, Alice assisted with GIS data maintenance and technical report preparation for a proposed 100-mile pipeline extension.

Mariner East 2 (PA Pipeline Project)—Sunoco; OH, PA; 05/2015 – 07/2015

Archaeological Field Technician. While employed by Tetra Tech, Alice worked with a team of archaeologists to conduct Phase I archaeological surveys and Phase II evaluations for a proposed 350-mile pipeline.

Unlisted Pipeline—Texas Gas Transmission; KY; 01/2015

Archaeological Field Technician. While employed by AK Environmental (now NV5), Alice worked with a team of archaeologists to conduct Phase I archaeological survey for a proposed pipeline.

Line 66 Pipeline—Enbridge, Inc.; WI; 06/2014 – 08/2014

Archaeological Field Technician. While employed by Natural Resource Group (now ERM), Alice worked with a team of archaeologists to conduct Phase I archaeological survey for a proposed 456-mile petroleum pipeline expansion.

Unlisted Electric Transmission Project—Unlisted; OH, PA; 06/2014

Archaeological Field Technician. While employed by The Louis Berger Group, Alice worked with a team of archaeologists to conduct Phase I archaeological survey for a proposed transmission line.

Unlisted Electrical Substation Expansion—American Electric Power; IN; 03/2014 – 05/2014

Archaeological Field Technician. While employed by The Louis Berger Group, Alice worked with a team of archaeologists to conduct Phase II archaeological evaluation and Phase III mitigation/data recovery investigations and artifact analysis.

Transportation

Camp Hall Rail Line— Federal Railroad Association (FRA); SC; 02/2022 – 08/2022

Senior Archaeologist, Technical Lead. Alice completed supplemental due diligence review of records, GIS analysis, literature pertaining to historic aboveground resources; SHPO coordination; and cultural resources/Section 106 documents and components of the Finding of No Significant Impact (FONSI).

Manthey Road Bridge Replacement Project—Caltrans (District 10); CA; 12/2021 – 02/2022

Senior Archaeologist. Alice worked with a team of cultural resource specialists to prepare a Section 106 Programmatic Agreement and Cultural Resources Management Plan.

Telecommunications

Satellite Access Node Projects (Multiple)—Viasat; IL, IN, KY, MI, MS, MO, SC, VA, WV; 03/2020 – 10/2021

Archaeologist/Principal Investigator. While employed by ERM, Alice oversaw and completed NEPA and Section 106 compliance needs for approximately 100 proposed FCC-regulated projects. Responsibilities included project management; client coordination and communications, development of projects' APEs, desktop archaeological assessment, preliminary historic property identification, Phase I archaeological and architectural surveys, artifact analysis, preparation of technical reports and other Section 106 documents, SHPO and THPO consultation, environmental site assessments.

Cell Tower and Small Cell Node Projects (Multiple)—Verizon Wireless; AZ, TN, TX, VA, WY; 12/2019 – 05/2020

Archaeologist/Principal Investigator. While employed by ERM, Alice completed a large variety of NEPA and Section 106 cultural resource compliance needs for hundreds of proposed FCC-regulated

projects. Responsibilities included development of projects' APEs, background research, Phase I archaeological and architectural survey, technical reporting, and other Section 106 deliverable production.

Disaster Management

Housing and Urban Development (HUD)-Community Development Block Grant (CDBG) Program—Iowa Economic Development Authority (IEDA); IA; 07/2022 – Present

Archaeologist. Alice is reviewing CDBG grant-recipients' Section 106 compliance for IEDA per a Section 106 Programmatic Agreement.

HUD-Community Development Block Grant Disaster Recovery (CDBG-DR) Program and City Revitalization Program (CRP)—Puerto Rico Department of Housing (PRDOH); Puerto Rico; 06/2022 – Present

Archaeologist. As part of the CDBG-DR Program for the Puerto Rico 2017 Disaster Recovery efforts, Alice is reviewing several project development workplans proposed for locations throughout Puerto Rico and assessing the need for SHPO consultation per a Section 106 Programmatic Agreement.

General Land Development and Management, Other Due Diligence

Unlisted Commercial Land Development Projects (Multiple)—Amazon; IL, IN; 01/2021 – 05/2021

Archaeologist. While employed by ERM, Alice developed projects' APEs, and completed due diligence cultural background research, preliminary historic property identification, and report production for six potential locations.

Robinson Landing Condominiums—EYA; VA; 02/2018 – 03/2018

Archaeological Crew Chief. While employed by Thunderbird Archeology (Wetland Studies and Solutions, a Davey Tree Company), Alice worked with a large team of archaeologists in conducting Phase II archaeological evaluations and Phase III data recovery for proposed development in Alexandria.

Unlisted Facility Expansion Project—Unlisted Client; IL; 01/2017 – 02/2017

Archaeological Field Technician. While employed by the SIUC's Center for Archaeological Investigations, Alice worked with a team of archaeologists in conducting Phase II archaeological testing of a historic cemetery, including the excavation and care of human remains.

Commercial Timber Management—U.S. Forest Service; Shawnee National Forest, IL; 01/2015 – 02/2015

Archaeological Field Technician. While employed by the SIUC's Center for Archaeological Investigations, Alice worked with a team of archaeologists in conducting Phase I archaeological surveys.

Industrial Park Project—Unlisted; VA; 05/2014 – 06/2014

Archaeological Field Technician. While employed by The Louis Berger Group, Alice worked with a large team of archaeologists in conducting Phase I archaeological survey and Phase II evaluations.

Water

Sites Reservoir Project—Sites Project Authority; CA; 11/2021 – Present

Senior Archaeologist. Alice worked with a team of cultural resource specialists to prepare a Programmatic Historic Properties Management Plan.

Academic Research and Public Archaeology

Master of Arts in Anthropology Thesis Research Project—IL; 01/2017 – 05/2018

Archaeologist/Graduate Researcher. While an anthropology graduate student at the SIUC, Alice conducted independent archaeological research for completion of her master's thesis. Under the advisement of Assistant Professor Paul Welch, Alice designed and completed the research project, which included the technical and statistical analysis of over 20,000 ceramic objects from two archaeological contexts in southern IL.

Ft. Kaskaskia and Miller Grove Public Archaeology Field School—IL; 05/2017 – 12/2017

Archaeologist/Teaching Assistant. While employed by the SIUC's Center for Archaeological Investigations, Alice taught undergraduate students fundamental skills in archaeological fieldwork and artifact analysis while providing educational tours and explanation of activities to the visiting public. She

also coordinated with an archaeologist from the Shawnee National Forest to facilitate public outreach days for high school-aged children of the Shawnee Indian Tribe as well as K-12 teachers participating in SIUC's Department of Curriculum & Instruction Educating with Evidence instructional development program. Alice also wrote content and created figures and materials for the associated state report.

Archaeological Soil Geochemistry Research Project; 09/2013 – 03/2014

Research Assistant. As a volunteer at the Field Museum of Natural History, Alice conducted portable X-ray fluorescence analysis (pXRF) and GIS analysis on soils from an archaeological context in Peru.

Archaeology Collections Management; 05/2012 – 07/2012; 05/2013 – 09/2013

Collections Assistant. As a volunteer at the Field Museum of Natural History, Alice analyzed, curated, and assessed preservation of archaeological artifacts and other cultural materials maintained by the Anthropology Collections Department.

Relevant Employment History

Environmental Resources Management (ERM). Staff Archaeologist. 05/2018 – 10/2021.

SIUC, Center for Archaeological Investigations. Archaeologist (roles varied). 08/2016 – 05/2018.

Thunderbird Archeology, Wetland Studies and Solutions, Inc. (WSSI). Crew Chief. 02/2018 – 03/2018.

Natural Resource Group (now ERM). Archaeological Field Technician. 06/2014 – 08/2016.

Tetra Tech. Archaeological Field Technician. 06/2015 – 07/2015.

SIUC, Center for Archaeological Investigations. Archaeological Field Technician. 01/2015 – 02/2015.

AK Environmental, LLC (now NV5). Archaeological Field Technician. 01/2015.

Hunter College, Zooarchaeology Laboratory. Archaeological Laboratory Technician. 08/2014 – 12/2014.

The Louis Berger Group. Archaeological Field Technician. 03/2014 – 06/2014.

The Field Museum of Natural History. Volunteer Research/Collections Assistant. 05/2012 – 03/2014.

University of Illinois at Chicago, Anthropology Department. Research Assistant. 09/2010 – 05/2012.