

Appendix II-O

Offshore Historic Resources Visual Effects Assessment (HRVEA)

Note:

On March 26, 2021, Atlantic Shores Offshore Wind, LLC (Atlantic Shores) submitted a Construction and Operations Plan (COP) to BOEM for the southern portion of Lease OCS-A 0499. On June 30, 2021, the New Jersey Board of Public Utilities (NJ BPU) awarded Atlantic Shores an Offshore Renewable Energy Credit (OREC) allowance to deliver 1,509.6 megawatts (MW) of offshore renewable wind energy into the State of New Jersey. In response to this award, Atlantic Shores updated Volume 1 of the COP to divide the southern portion of Lease OCS-A 0499 into two separate and electrically distinct Projects. Project 1 will deliver renewable energy under this OREC allowance and Project 2 will be developed to support future New Jersey solicitations and power purchase agreements.

As a result of the June 30, 2021 NJ BPU OREC award, Atlantic Shores updated Volume I (Project Information) of the COP in August 2021 to reflect the two Projects. COP Volume II (Affected Environment) and applicable Appendices do not currently include this update and will be updated to reflect Projects 1 and 2 as part Atlantic Shores' December 2021 COP revision.

Technical Report

Historic Resources Visual Effects Assessment

Atlantic Shores Offshore Wind Project

Wind Turbine Area

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ATTACHMENT B	Visual Simulations

GLOSSARY/LIST OF ACRONYMS AND ABBREVIATIONS

ADLS	Aircraft Detection Lighting Systems		
AMSL	Above Mean Sea Level		
APE	The Area of Potential Effect (APE) is the area in which the Atlantic Shores Wind may have a potential visual effect on aboveground historic properties (determined by the responsible federal agency in consultation with relevant SHPOs and THPOs)		
Atlantic Shores Offshore Project Area	The offshore area where Atlantic Shores' facilities are physically located		
Atlantic Shores Offshore Wind, LLC	The Atlantic Shores Offshore Wind Project Proponent (Atlantic Shores).		
Atlantic Shores Offshore Wind Project	Atlantic Shores' proposal to develop the Bureau of Ocean Energy Management (BOEM) Lease Area OCS-A 0499 for the generation of renewable energy from offshore wind (The Project)		
BIWF	Block Island Wind Farm		
BOEM	Bureau of Ocean Energy Management		
CFR	Code of Federal Regulations		
СОР	Construction and Operations Plan		
Cross Section	A profile of the terrain that illustrates sources of visual screening along a line of sight between the proposed Project and a specific viewer/resource location		
DEM	Digital Elevation Model		
DSM	Digital Surface Model		

EDR	Environmental Design & Research, Landscape Architecture, Engineering & Environmental Services, D.P.C.			
FAA	Federal Aviation Administration			
GIS	Geographic Information System			
GPS	Global Positioning System			
HRSA	The Historic Resources Study Area, defined in Section 2.2 of this report, as an appropriately conservative study area for impacts to aboveground historic properties within 40 miles (64.4 km) of each of the proposed the turbines in the WTA			
HRVEA	Historic Resources Visual Effects Assessment			
КОР	Key Observation Point			
Lease Area	The entire Lease Area OCS-A 0499 that Atlantic Shores acquired from BOEM			
Lidar	Light Detection and Ranging			
LUCY	Look Up Cultural Resources Yourself, NJDEP's cultural resources web mapping service.			
m	Meter (1 meter = 3.38 feet)			
MCPS	Monmouth County Parks System			
MCHSI	I Monmouth County Historic Sites Inventory			
mile	Statute mile (1 mile = 1.61 kilometers = 0.87 nautical miles)			
MDS	Maximum Design Scenario			
MW	Megawatt = One million watts			
nm	Nautical Mile (1 nm = 1.15 statute mile)			

NEPA National Environmental Protection Act of 1970			
NHPA	National Historic Preservation Act of 1966		
NHL	National Historic Landmark		
NJDEP	New Jersey Department of Environmental Protection		
NJHPO	New Jersey Historic Preservation Office		
NJID	New Jersey Identification Number		
NLCD National Land Cover Dataset. Land cover types classified and u by U.S. Geological Survey			
NPS	National Park Service		
NRHP	National Register of Historic Places		
NRHP-Listed Aboveground Historic Property	Buildings, districts, objects, structures and/or sites that have been added to the National Register of Historic Places		
NRHP-Eligible Aboveground Historic Property	Buildings, districts, objects, structures and/or sites that have been determined by NJHPO as eligible for listing in the New Jersey and National Register of Historic Places, as indicated by inclusion in the publicly available data on the LUCY website and the NJHPO's quarterly updated listing of NRHP-listed and -eligible above ground historic properties		
NCDC	National Climatic Data Center		
OCS	Outer Continental Shelf		
Operations and maintenance facilities	All onshore buildings and infrastructure used to support operations and maintenance activities. (O&M facilities)		
OSS	Offshore Substation		

PAPE	The Preliminary Area of Potential Effect (PAPE) includes areas within the Historic Resources Study Area that may have potential visibility of the proposed offshore Project components as determined by GIS-based viewshed analysis (see Section 2.3.1)		
PDE	Project Design Envelope		
Potentially NRHP- Eligible Aboveground Historic Property	Buildings, districts, objects, structures and/or sites that are included in the publicly available data on the LUCY website or municipal historic property databases as having been surveyed, but for which there has not been a formal determination of NRHP eligibility		
RPM	Revolutions Per Minute		
SHPO	State Historic Preservation Offices		
SRHP-Listed Aboveground Historic Properties	Buildings, districts, objects, structures and/or sites that have been added to the New Jersey State Register of Historic Places		
sq km	Square Kilometer		
sq mi	Square Mile		
SRHP	State Register of Historic Places		
SIA	Structural Inventory and Appraisal		
ТСР	Traditional Cultural Property		
ТНРО	Tribal Historic Preservation Offices		
offshore cable	Atlantic Shores Offshore Wind Project cable located offshore located beneath the seafloor which connects the offshore substation to the landfall site		
USCG	U.S. Coast Guard		
USGS	U.S. Geological Survey		

VIA	Visual Impact Assessment
Viewshed	Area of potential Project visibility defined by maximum structure height and mapped topography, vegetation, and structures within the study area
VSA	The Visual Study Area, defined as the area within a 40-mile radius of buffer of the entire lease area of OCS-A
WTA	The Wind Turbine Area, the portion of Lease Area OCS-A 0499 that will be developed for Atlantic Shores as described in this Historic Resources Visual Effects Assessment
WTG	Wind Turbine Generator
ZVI	Zone of Visual Influence
3D	Three Dimensional

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1.0 INTRODUCTION

1.1 Purpose of the Investigation

On behalf of Atlantic Shores Offshore Wind, LLC (Atlantic Shores), a 50/50 joint venture between EDF-RE Offshore Development, LLC, a wholly owned subsidiary of EDF Renewables, Inc. (EDF Renewables) and Shell New Energies US, LLC (Shell), Environmental Design & Research, Landscape Architecture, Engineering, & Environmental Services, D.P.C. (EDR) prepared this historic resources visual effects assessment (HRVEA) in support of the Atlantic Shores Construction and Operations Plan (COP) for Bureau of Ocean Energy Management (BOEM) Lease Area OCS-A 0499 for renewable energy generation from offshore wind, comprised of up to 200 wind turbine generators (WTG) and up to 10 offshore substation (OSS) positions (Atlantic Shores Offshore Wind Project, or the Project).

The purpose of the HRVEA is to evaluate the Project's potential visual effects on the qualities that make aboveground historic properties eligible for listing in the National Register of Historic Places (NRHP). Per 36 CFR Part 585, aboveground historic properties are defined as districts, buildings, structures, objects, or sites that are listed or eligible for listing in the National Register of Historic Places (NRHP) or which have been designated as National Historic Landmarks (NHL). This assessment is limited to onshore aboveground historic properties including NHLs and properties that are listed in the NRHP, as well as aboveground properties designated as historic in New Jersey, and traditional cultural properties (described in Section 3.2.1).

1.2 Regulatory Context for Review of Effects on Historic Properties

This HRVEA is intended to assist BOEM, the New Jersey Historic Preservation Office (NJHPO), and other participating agencies and stakeholders with a review of the Project under Sections 106 and 110 of the National Historic Preservation Act (NHPA), and the National Environmental Protection Act (NEPA).

In 2020, the BOEM Office of Renewable Energy Programs issued updated *Guidelines for Providing Archaeological and Historic Property Information, Pursuant to 30 CFR 585*¹ (BOEM, 2020), which states the following with regard to identification of historic properties:

"BOEM requires detailed information regarding the nature and location of historic properties that may be affected by an applicant's proposed activities to conduct review of the plan under Section 106 of NHPA (54 U.S.C. § 306108). As defined in the regulations implementing Section 106 [36 CFR § 800.16 (1) (1)],

¹ Available online at <u>https://www.boem.gov/sites/default/files/renewable-energy-program/Guidelines-for-Providing-Archaeological-and-Historic-Property-Information-Pursuant-to-30CFR585.pdf</u> (Accessed June 17, 2020).

Historic property means any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. This term also includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria" (BOEM, 2020: 2).

The *Guidelines for Providing Archaeological and Historic Property Information* includes methods for identification of historic properties, as well as coordination with BOEM and any relevant State Historic Preservation Offices (SHPOs) and Tribal Historic Preservation Offices (THPOs).

In addition, the *Guidelines* provide guidance for the identification of archaeological sites on the outer continental shelf (OCS), including geophysical survey techniques and instrumentation, methods of geotechnical investigation, and contents of archaeological resources assessment reports. Marine archaeological surveys for the Project are described in a separate report and are not discussed in this HRVEA.

The discussion of visual effects on aboveground historic properties in this HRVEA is limited to potential visual effects of the above-surface offshore components of the operational Project (i.e., the wind turbine generators [WTG]) on the visual setting of aboveground historic properties (inclusive of traditional cultural properties as discussed in Section 3.2.1 below). Separate reports (EDR, 2021a-d) will be provided to address the potential effects on aboveground historic properties associated with the visible components of the Onshore Facilities, which will be located in Egg Harbor Township and Howell Township, New Jersey.

1.3 Project Location and Description

The Atlantic Shores Project will apply a Project Design Envelope (PDE) approach to describe Project facilities and activities. A PDE is defined as "a reasonable range of project designs" associated with various components of the project (e.g., foundation and WTG options) (BOEM 2018). A PDE provides a reasonable range of designs for proposed components and installation techniques to deliver the Project, which provides Atlantic Shores with the flexibility to optimize the Project and take advantage of anticipated improvements in the rapidly evolving offshore wind technology while providing BOEM with the information required to fulfill its expected role as the lead federal agency under the National Environmental Policy Act (NEPA). The PDE approach considers a geographic area that is larger than will ultimately be required for the development of the Project. This approach allows developers to account for locations within the PDE that are unsuitable for development due to constructability, cultural, or economic limitations. To evaluate the potential visual impacts associated with the visible components of the Project, additional, reasonable assumptions were made in order to narrow down the potential wind turbine generator (WTG) locations within the PDE. This area is illustrated in Figure 1.3-1. Since this subset of the PDE generally includes the contiguous areas closest to the mainland shoreline, it represents the greatest level of potential visual impact associated with the Project.

The Project will consist of up to 200 WTGs and associated foundations, inter-array cables connecting the WTGs, and offshore platforms. The offshore platforms utilized for the Project will include up to 10 offshore substations (OSS). Energy from the WTGs will be delivered to shore via 230-kV to 525-kV high voltage alternating current (HVAC) or high voltage direct current (HVDC) export cables. Up to four export cables will be installed within each of two possible Export Cable Corridors (ECCs), for a total of up to eight export cables. The export cables will traverse federal and state waters to deliver energy from the OSSs to landfall sites located in Monmouth County (the "Monmouth Landfall Site") and/or Atlantic County (the "Atlantic Landfall Site"), New Jersey. The offshore-to-onshore transition at the landfall sites will occur via horizontal directional drilling (HDD) to avoid nearshore and shoreline impacts. From the Monmouth and Atlantic Landfall Sites, new 230-kV to 525-kV HVAC or HVDC onshore interconnection cables will travel underground along existing roadways, utility rights-of-way (ROWs), and/or along bike paths to up to two new onshore substation sites (one for each onshore point of interconnection [POI]), where transmission will be stepped up or stepped down in preparation for interconnection with the electrical grid. Onshore interconnection cables will continue from each of the new onshore substations to proposed POIs into the electrical grid at the existing Larrabee Substation in Howell, New Jersey (for the Monmouth Landfall Site) or the existing Cardiff Substation in Egg Harbor Township, New Jersey (for the Atlantic Landfall Site). Once operational, the Project will be supported by a new O&M facility that will be located in Atlantic City, New Jersey. The O&M facility will be the primary location for O&M operations including material storage, dayto-day management of inspection and maintenance activities, vehicle parking, marine coordination, vessel docking, and dispatching of technicians. Atlantic Shores intends to purchase and develop a shoreside parcel in Atlantic City, New Jersey that was formerly used for vessel docking or other port activities. The potential impacts from construction of the O&M facility will be evaluated as part of a COP Supplement anticipated to be submitted in late 2021.

Consistent with BOEM's *Draft Guidance Regarding the Use of a Project Design Envelope in a Construction and Operations Plan* (2018), the HRVEA and visual impact assessment (VIA) consider a maximum design scenario layout. The layout represents the largest geographic footprint occupied by visible structures and, therefore, the largest percentage of the visible horizon from shoreline locations that may be affected by the Project. Considering this layout, the WTGs will be aligned in a uniform grid with rows in an east-northeast to west-southwest direction spaced 1.0 nautical mile (nm) (1.15 mi; 1.9 km) apart and rows in an approximately north to south direction spaced 0.6 nm (0.69 mi; 1.1 km) apart (see Figure 1.3-1). The OSS positions will also be located along the same east-northeast rows as the proposed WTGs, preserving 1.0 nm-wide (1.9 km-wide) corridors between structures. Three options for WTG and OSS foundations are included in the PDE: piled, suction bucket, or gravity foundations.

This HRVEA focuses on visible offshore components of the operational Project, including the WTGs (and associated foundations), and the OSSs). A separate visual study is being prepared for the visible components of the onshore facilities (Appendices II-N1 to II-N4 to the COP).



Figure 1.3-1. Regional Project Location Map.

This HRVEA considers the largest WTG dimensions currently under consideration which provides a conservative assessment of theoretical WTG visibility from onshore locations. The maximum sized WTG under consideration is represented by a 20-megawatt (MW) turbine. For the development of the viewshed analysis all 200 foundation locations located within the Atlantic Shores Offshore Project Area were analyzed at the maximum height of the WTGs in order to capture the greatest area of potential visibility. By evaluating the largest turbine currently under consideration, the theoretical turbine visibility increases for distant viewpoints, thereby providing a conservative assessment of visibility of the Project.

Each WTG will consist of four major components: the foundation, the tower, the nacelle, and the rotor (Figure 1.3-2). The height of the tower, or "hub height" (height from the water's surface to the center of

the rotor) will be approximately 574 feet (175 m) AMSL. The nacelle sits atop the tower, and the rotor hub is mounted to the nacelle. Assuming a maximum rotor diameter of 919 feet (280 m), the total WTG height (i.e., height AMSL at the highest blade tip position) will be approximately 1047 feet (319 m).

Descriptions of each of the proposed WTG components included in the HRVEA are provided below:

Foundation: For the purpose of this HRVEA, it was assumed that each of the WTGs will be anchored to the sea floor using a monopile foundation secured with a single steel pile driven into the sea floor. However, the WTGs may utilize suction bucket or concrete gravity base structure (GBS) foundations. The monopile foundation is an 8-foot (2.4 m) diameter tubular steel structure, upon which the tower transition will be mounted. A suction bucket foundation option consists of a hollow tube embedded in the ocean floor which holds the structure in place through vacuum pressure. The GBS consists of steel-reinforced concrete which is sunk to the ocean floor and held in place by gravity. The foundation will extend above the water surface, and the exposed portion of the foundation will be yellow in color. A boat landing will be affixed to the foundation with a stairway connecting the landing to a railed deck at the base of the tower.

Tower: The towers used for this Project are tapered hollow steel structures manufactured in three sections. The assembled towers have a diameter of approximately 33 feet (10 m) at the base and 28 feet (8.5 m) at the top. Two amber U.S. Coast Guard (USCG) warning lights will be mounted on the deck at the base of each tower. In accordance with the BOEM and Federal Aviation Administration (FAA) obstruction marking standards, the turbine will be painted a light grey (RAL 7035) to pure white (RAL 9010). Additionally, the tower will be equipped with a minimum of three low intensity red flashing lights (L-810) at the approximate mid-section of the tower which will operate during nighttime hours only.

Nacelle: The main mechanical components of the WTG are housed in the nacelle. These components include the drive train, generator, and transformer. For the purpose of this study, the nacelle is assumed to have maximum dimensions of approximately 82 feet (25 m) long, 52 feet (16 m) wide, and 39 feet (12 m) in height. Two aviation warning lights are proposed to be located on top of the nacelle, in accordance with BOEM and FAA guidelines. These will be medium intensity, flashing red lights (L-864) that are operated only at night, and will be synchronized with the L-810 lights described above. It is assumed that the nacelle will be the same color as the tower and will not include any obvious lettering, logos, or other exterior markings (FAA, 2018). Where applicable, the lighting parameters presented in the VIA follow the current BOEM guidance for the lighting and marking of WTGs in order to illustrate the potential nighttime visual impacts associated with the Project. However, lighting requirements may change based on final BOEM/FAA recommendations.

Rotor: A rotor assembly is mounted on the nacelle to operate upwind of the tower. The rotor consists of three composite blades, each approximately 453 feet (138 m) in length. The three-bladed rotor assembly will be light grey to white in color (consistent with the tower) and will have

a maximum diameter of 919 feet (280 m). The rotor blades are rotated along their axis, or "pitched", to enable them to operate efficiently at varying wind speeds. The rotor can spin at varying speeds, but typically rotates at a rate around 10 revolutions per minute (RPM).

The OSSs will be an enclosed structure measuring up to 295 feet long by 164 feet (90 m x 50 m) wide, with a maximum elevation of up to 131 feet (40 m) AMSL. For the purpose of this HRVEA, it is assumed that OSSs will be mounted on piled jacket foundations. However, the OSSs may utilize suction bucket or concrete gravity base structure (GBS) foundations. Diagram illustrating the appearance and dimensions of the WTG and OSS evaluated in this study are presented in Figure 1.3-2.



Figure 1.3-2. Computer Model of Offshore Platform and WTG Maximum Dimensions.

2.0 POTENTIAL EFFECT ON ABOVEGROUND HISTORIC PROPERTIES

2.1 Project's Potential Effect on Aboveground Historic Properties

Potential effects on cultural resources resulting from an offshore wind project include direct physical effects – which include alteration, disturbance, or destruction of a historic property caused by construction activities – as well as other changes such as visual or auditory effects that diminish the historically significant characteristics of an aboveground historic property. No direct physical impacts to aboveground historic properties will occur as a result of Project activities on the OCS or within state waters, nor will any buildings or other potential onshore aboveground historic properties be physically altered by construction of the Project. Instead, the Project's potential effects on onshore aboveground historic properties would be a change (resulting from the introduction of wind turbines and other offshore components, as well as any onshore components) to a given property's visual setting.

The Federal Regulations entitled "Protection of Historic Resources" (36 CFR 800) include in Section 800.5(2) a discussion of potential adverse effects on historic properties. The criteria for determining whether a project may or may not have an adverse effect on historic properties are defined as follows:

"An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Consideration shall be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the National Register. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative" (CFR, 2019).

The following types of effects are relevant to the assessment of wind energy project impacts to aboveground historic properties located outside the areas of anticipated construction:

"Adverse effects on historic properties include, but are not limited to: [items i-iii do not apply]; (iv) Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance; (v) Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features." [items vi-vii do not apply] (CFR, 2019).

Additional considerations may be required when a federal undertaking affects a National Historic Landmark. Section 110 (f) of the NHPA states:

"(f) Prior to the approval of any Federal undertaking which may directly and adversely affect any National Historic Landmark, the head of the responsible Federal agency shall, to the maximum extent possible, undertake such planning and actions as may be necessary to minimize harm to such

landmarks, and shall afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on the undertaking" (CFR, 2019).

The HRVEA considers the Project's potential effects on a given aboveground historic property – i.e., potential changes resulting from the introduction of wind turbines or other Project components in the property's historic setting. As it pertains to historic properties, *setting* is defined as "the physical environment of a historic property" and is one of seven aspects of a property's *integrity*, which refers to the "ability of a property to convey its significance" (NPS, 1990:44-45). The other aspects of integrity include location, design, materials, workmanship, feeling, and association (NPS, 1990). The potential effect resulting from the introduction of WTGs into the visual setting for an aboveground historic property is dependent on a number of factors, including those characteristics of the historic property that qualify it for listing in the NRHP, distance separating the aboveground historic property from the new visual elements, visual dominance, orientation of views, viewer context and activity, and the types and density of modern features in the existing view.

2.2 Historic Resources Study Area and Preliminary Area of Potential Effect

Under Section 106 of the NHPA, the geographic scope of review of a given project (or undertaking) is determined based on the project's Area of Potential Effect (APE), defined as follows:

Area of potential effects means the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking (CFR, 2019).

The APE for a project is determined by the responsible federal agency in consultation with relevant SHPOs and THPOs. BOEM will confirm the Project APE based on consultation with the relevant SHPOs and THPOs once BOEM has formally initiated NHPA Section 106 consultation for the Project.²

A standard visual study area for offshore wind farms has not been expressly defined in regulatory guidance documents. However, *Information Guidelines for a Renewable Energy Construction and Operations Plan (COP)* (BOEM, 2020) indicates that visual effects should be evaluated using photo simulations from locations within *"the onshore viewshed from which renewable energy structures, whether located offshore or onshore, would be visible."* Potential views of the proposed offshore facilities will be affected by the specific spacing and layout of the facilities. In order to accommodate the design envelope for the Project, the HRVEA considered the geographic areas for the Project; a minimally constrained Historic Resources Study Area (HRSA) that delineates areas with theoretical views of the Project and a refined Preliminary Are of Potential Effect (PAPE) based on viewshed analyses and existing conditions. Use of the HRSA allowed initial identification efforts to document a wide range of aboveground historic

² Per 36 CFR § 800.3(c), federal agencies must consult with THPOs when determining the APE if historic properties within tribal lands (reservation or federal trust properties) may be affected by an undertaking.

properties that may be subject to visual effects caused by the Project and reduced the need for additional survey to accommodate a range of design assumptions. Assessment of the scope and character of visual effects was undertaken within the PAPE, within which views of the offshore facility are expected to be confined.

The first step in defining the maximum extent of WTG visibility in an offshore setting is to determine the likely physical threshold based on the screening effect of the curvature of the earth. A previous analysis completed by EDR on the operational Block Island Wind Farm (BIWF), which consists of turbines with heights of 659 feet (200.8 m) AMSL located approximately 3 miles (4.8 km) off the coast of Block Island, New Shoreham, Rhode Island, suggests that WTGs will generally become completely screened at a distance between 35 and 40 miles (56.3 and 64.4 km), depending on the elevation of the viewer and height of the WTG. This inference is supported by a study titled "Offshore Wind Turbine Visibility and Visual Impact Threshold Distances," which studied eleven existing offshore with maximum turbine heights of 413 feet (126 m) at distances from 4.2 miles (6.8 km) to 27.2 miles (43.9 km) from shore, concluded that offshore wind facilities were judged to be a major focus of visual attention at distances up to 10 mi (16 km); were noticeable to casual observers at distances of almost 18 mi (29 km); and were visible with extended or concentrated viewing at distances beyond 25 mi (40 km) (Sullivan, et al., 2013). A more recent study undertaken by the New York State Energy Research and Development Authority (NYSERDA) used hypothetical turbine models of a maximum height of 614 feet (187.1 m) at varying distances from the shore of Long Island, New York would have minimal visual effects at a distance of 20 miles (32.2 km) and negligible effect beyond 25 miles (40.2 km) (EDR, 2017). Observations of the constructed BIWF and verified line of sight models suggest that daytime visibility will diminish completely at approximately 28.2 miles (45.4 km) at beach level and 36 miles (57.9 km) from an elevated vantage point (see Figure 2.2-1).

Based on the results of these studies, and to provide a conservative assessment of potential Project visibility from aboveground historic properties, the HRSA for the Project was defined as the area within a 40-mile (64.4 km) radius of each of the proposed turbines in the WTA.³ The HRSA includes approximately 5,519.2 sq. miles (14,294.6 sq. km) of open ocean, 1,757.4 sq. miles (4,551.7 sq. km) of land (including inland water bodies), and approximately 118.0 linear miles (224.4 linear km) of shoreline in New Jersey. However, within the HRSA only a relatively small portion of onshore areas will have open views of the Project.

³ This includes a small area that is greater than 40 miles from the Project Envelope, which was incorporated for evaluation of potential visual impact to Cape May, NJ.



Atlantic Shores Offshore Wind Project Outer Continental Shelf

Figure 2.2-1: Historic Resources Study Area and Preliminary Area of Potential Effect

Notes: 1. Basemap: ESRI ArcGIS Online "World Topographic Map" map service. 2. This map was generated in ArcMap by EDR on January 21, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

- Wind Turbine
- Preliminary Area of Potential Effect (PAPE)
- Historic Resources Study Area



2.3 Summary of Visual Impact Assessment

A VIA (EDR, 2021e) has been prepared for the Project, which includes analyses of potential Project visibility as well as an assessment of the potential visual effect of the Atlantic Shores Offshore Wind Project on visually sensitive resources within a 40-mile (64.4 km) study area of the Project. The VIA is included as COP Appendix II-M1 and is summarized in Section 5.0 of the COP. The VIA visibility analyses were undertaken to identify those locations within the Visual Study Area (VSA) where it may be possible to view the proposed offshore Project components from ground-level vantage points. The VSA has been defined in the VIA to include a 40-mile (64.4-km) buffer of the entire Lease Area due to the potential for future development of the lease area and the desire to address potential cumulative visual impacts. As such, the VSA will be substantially larger than the area analyzed for the VIA which is defined by the viewshed analysis. The Historic Resources Study Area, the area within 40 miles (64.4 km) of the proposed turbines in the WTA, is distinct from the Visual Study Area (VSA). The viewshed analysis includes the area within 40 miles (64.4 km) of the WTA, and each of the proposed WTGs, which represents the maximum extent of potential visual impacts based on the currently proposed PDE. These analyses included identifying potential views of the offshore facilities on viewshed maps and verifying line-of-sight conditions in the field. The methodology employed for each of these assessment techniques is described below.

2.3.1 Viewshed Analysis

In the context of the VIA, this area of potential visibility within the VSA is considered the Zone of Visual Influence (ZVI). The viewshed analysis developed for this VIA was based upon a highly detailed digital surface model (DSM) of the VSA generated from lidar data,⁴ which includes the elevations of land features, buildings, trees, and other objects large enough to be resolved by lidar technology (Figure 2.3-1). A bareearth 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 three meters to allow direct comparison of ground elevation with the elevation of surface features (such as buildings and vegetation).

Transmission lines and road-side utility lines that are reflected in the lidar data are mis-represented in the initial DSM as solid walls/screening features. In order to correct this inaccuracy, DSM elevation values within transmission line corridors and within 50 feet (15.2 m) of road centerlines were replaced with DEM bare earth elevation values. To account for some small lidar data gaps, USGS 10-meter resolution DEM and NLCD data were used to complete the DSM lidar model. The DSM was then used as a base layer for the viewshed analysis, which was conducted using ESRI ArcGIS® software with the Spatial Analyst extension and earth curvature corrections.

⁴ Lidar data availability varies throughout the VSA, requiring the use of more than one data source. The following four lidar datasets were incorporated into the DSM: NOAA 2014, USGS 2015, Cumberland County 2008, and American Recovery and Reinvestment Act (ARRA) 2010.

The analysis of potential Project visibility within the VSA was based on 200 points representing the WTG locations currently under consideration (using latitude and longitude coordinates provided by Atlantic Shores), an assumed maximum blade tip height of 1,047 feet (319 m), and an assumed viewer height of 6 feet (1.83 m). Additional, viewshed analyses were completed to assess:

- 1) the visibility of the aviation obstruction lights at a height of 607 feet (185 m),
- 2) the visibility of the mid-tower aviation obstruction lights, at an elevation of 287 feet (87.5 m), and
- 3) the visibility of USCG navigation lights on the WTG deck at an elevation of 57 feet (17.3 m).





Once the viewshed analysis was complete, a conditional statement was used within ArcGIS® to set Project visibility to zero in locations where the DSM elevation exceeded the bare earth (DEM) elevation by 6 feet (1.83 m) or more, indicating the presence of vegetation or structures that exceed viewer height.

This was done because:

1) without this adjustment in locations where trees or structures are present in the DSM the viewshed would reflect visibility from the treetops or building roofs, which is not the intent of this analysis; and

2) ground-level vantage points within buildings or areas of vegetation exceeding 6 feet (1.83 m) in height will generally be screened from views of the Project.

The resulting viewshed analysis provides an exceptionally accurate prediction of visibility from onshore resources. However, changes to vegetation (such as growth or clearing) earthwork, and the addition or removal of structures since the lidar data were collected may result in minor visibility discrepancies.

Because it accounts for the screening provided by buildings/structures and trees, this lidar-based viewshed analysis results in a more accurate and precise representation of probable Project visibility than the standard industry practice. However, because it is possible that very small landscape features may go undetected in the DSM, and/or may have changed since the lidar data were collected, the viewshed is a robust, but not definitive, model of the areas from which the Project may be visible. In addition, certain characteristics of the wind turbines that may influence visibility (color, low profile, distance from viewer, etc.) are not into taken consideration in the analyses. Therefore, being located within the DSM viewshed does not necessarily equate to actual Project visibility.

Potential Project visibility, as indicated by the viewshed analyses, is illustrated in Figure 2.2-1 and summarized in Table 2.3-1. Within the HRSA, the lidar-based viewshed analysis indicates that approximately 16 percent of the land area could have potential views of some portion of the Project based on the availability of an unobstructed line of sight. Visibility will be eliminated in large portions of the HRSA where buildings/structures and vegetation screens views toward the Project. Forest land is the dominant land use within the mainland portions of study area (covering approximately 55 percent of the land within a 40-mile (64.4 km) radius of the Project) and will significantly reduce potential Project visibility throughout the area. In areas of concentrated human settlement, buildings/structures will also significantly screen outward views. Considering the screening provided by buildings/structures, vegetation, and topography, potential on-shore Project visibility is largely restricted to the ocean shoreline, salt marshes and bays backing the barrier islands, inland along wetlands and waterways connecting to Great Bay and Great Egg Harbor Bay, and areas of clearing for agricultural purposes or large residential lots. Generally, areas of visibility extend up to approximately 500 to 2,000 feet (152.4 to 609.6 m) inland from the shoreline, before breaking up into smaller pockets of visibility and then dissipating completely.

Table 2.3-1. Viewshed Results Summary

Distance from the Wind Turbine Area ¹	40-Mile Radius HRSA (Units in Square Miles)		
	Total Land Area	Land Area with Potential Visibility (PAPE)	Percent of Landward Study Area (%)
0 to 10 Miles	4.6 (11.8 sq. km)	3.8 (9.8 sq. km)	83.1
10 to 20 Miles	266.9 (691.4 sq. km)	155.2 (401.9 sq. km)	58.1
20 to 30 Miles	589.3 (1,526.3 sq. km)	85.7 (222.0 sq. km)	14.5
30 to 40 Miles ¹	896.6 (2,322.2 sq. km)	38.9 (100.7 sq. km)	4.3
Total 40 Mile Landward Study Area	1,757.4 (4,551.7 sq. km)	283.6 (734.4 sq. km)	16.1

¹ This includes a small area that is greater than 40 miles from the WTA, which was incorporated for evaluation of potential visual impact to Cape May.

As further described in Section 4.1 of this report, a comprehensive visibility assessment that lists the aboveground historic properties that have potential visibility of the Project, as determined by the viewshed analysis is presented in Attachment A for aboveground historic properties located within the PAPE.

2.3.2 Field Review of Potential Visibility

The VIA describes field review and photography conducted for the Atlantic Shores Offshore Wind Project between June and September 2020. The purpose of this exercise was to verify the existence of direct lines of sight to proposed turbine locations from candidate Key Observation Points (KOPs) and other sites with potential Project visibility, as indicated by viewshed analysis. Field review was also used to obtain photographs from selected KOPs for subsequent use in the development of visual simulations (see Figure 2.3-1).

Field review largely confirmed the results of the lidar viewshed analysis. Consistent with the results of this analysis, the majority of the inland portions of the visual study area was found to be screened from view of the Project by vegetation and buildings/structures. Open views toward the Atlantic Shores Offshore Wind, as indicated by visibility of the ocean, were concentrated within a mile of the ocean shoreline and were largely restricted to beaches, bluffs, open fields, salt ponds, road corridors, and cleared residential yards, where lack of foreground trees allowed for unscreened views. Based on these results, potential visibility of the Project from aboveground historic properties is restricted to those historic properties that have open views of the ocean and/or feature views of the open ocean in their visual setting.

The aboveground historic properties with the highest potential for visibility of the Project are those that were situated to take advantage of panoramic ocean views. Such aboveground historic properties include the Atlantic City Convention Hall in Atlantic City and Hereford Lighthouse in North Wildwood, New Jersey. These, among others, are examples of NRHP-listed or -eligible sites that receive high public use/visitation in the region and would have visibility of the Project.

2.3.3 Visual Simulations

Realistic photographic simulations of the Project were completed for 13 KOPs (Attachment B) for the purposes of this HRVEA. The photographic simulations were developed by constructing a 3D computer model of the proposed turbines, turbine layout, and offshore substation based on design specifications and coordinates provided by Project. Because the exact turbine model was not yet determined at the time the VIA was being conducted, a hypothetical model using the largest dimensions under consideration was prepared. A diagram of the computer models of the proposed turbine and offshore substation used in the VIA is shown in Figure 1.3-2.

Simulations were created by aligning each photographic viewpoint through a virtual 3D camera, using digitized location data for elements visible in the photograph. This step involves utilizing aerial photographs and 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, etc.) were

added. These data were superimposed over photographs as seen through the virtual camera from each of the viewpoints, and minor camera changes (height, roll, bearing) were made as necessary to align all known reference points within the view. This process ensures that the 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 photo. The resulting simulation size included in Attachment B is 15 inches (38.1 cm) wide by 10 inches (25.4 cm) high. At this size and focal length, the simulation should be viewed from a distance of 21 inches (53.3 cm). A full description of the visual simulation methodology is included in the VIA for the Project (EDR, 2021e).

The simulations cover a horizonal field of view of approximately 38.7 degrees. In several simulations, this field of view is insufficient for illustrating the full extent of the Project. When this occurs, several views are simulated in order to capture the Project. These panorama panels always progress from left to right and typically include between two and four images representing both existing and simulated conditions. In addition, the simulations depict the atmospheric conditions present during field photography, which were applied to the simulated offshore facilities in view. An *Initial Visibility Modeling Study* completed by the Rutgers University Center for Ocean Observing Leadership (RUCOOL) analyzed how atmospheric and weather conditions could affect visibility of the Project (RUCOOL, 2021). The study indicates that humidity and temperature could have the potential to reduce visibility of the Project from some areas of the shoreline. This study is described in greater detail in and will be included as an attachment to the VIA (Appendix II-M1 of the COP).

The visual simulations from 13 KOPs are included as Attachment B to this report. The simulations provide representative views of the Project from different visual settings and distances within the HRSA, and illustrate the anticipated appearance and visual effect of the constructed Project (see Figure 2.3-1 and Table 2.3-2).

Table 2.3-2. KOPs	Selected for	Visual	Simulations
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КОР	KOP Name	Location	Distance to The Project (Miles/km)	
BC02	North Brigantine Natural Area	Brigantine City, Atlantic County, New Jersey	9.0 (14.5)	
AC04	Ocean Casino Resort – Sky Deck	Atlantic City, Atlantic County, New Jersey	10.5 (16.9)	
AC02	Jim Whelan Boardwalk Hall/Atlantic City Convention Hall NHL	Atlantic City, Atlantic County, New Jersey	11.4 (18.3)	
LEHT02	Great Bay Boulevard WMA/Rutgers Field Station	Little Egg Harbor Township, Ocean County, New Jersey	11.9 (19.2)	
BHB01	Beach Haven Historic District	Beach Haven Borough, Ocean County, New Jersey	13.5 (21.7)	
MC02	Lucy the Margate Elephant NHL	Margate City, Atlantic County, New Jersey	14.4 (23.2)	
OC04	Gillian's Wonderland Amusement	Ocean City, Cape May County, New Jersey	17.2 (27.7)	
BRT01	Bass River State Forest	Bass River Township, Burlington County, New Jersey	18.5 (29.8)	
LBT03	Beach at Long Beach Island Arts Foundation	Long Beach Township, Ocean County, New Jersey	24.9 (40.1)	
SIC02	Townsend Inlet Bridge	Sea Isle City, Cape May County, New Jersey	27.4 (44.1)	
LAT01	Edwin B. Forsythe NWR at the Woodmansee Estate	Lacey Township, Ocean County, New Jersey	32.2 (51.8)	
SPB01	Beachcomber Bar	Seaside Park Borough, Ocean County, New Jersey	39.0 (62.8)	
LT02	Cape May Point State Park	Lower Township, Cape May County, New Jersey	45.0 (72.4)	



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Figure 2.3-2: Key Observation Points for Visual Simulations

Notes: 1. Basemap: ESRI ArcGIS Online "World Topographic Map" map service. 2. This map was generated in ArcMap by EDR on March 2, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

- Candidate Key Observation Point (KOP)
- KOP Selected for Simulation
- Project Design Envelope
- Historic Resources Study Area



2.3.4 Preliminary Area of Potential Effects on Aboveground Historic Properties

The PAPE for the Project is defined as those areas with potential visibility of the Project as determined by lidar-based viewshed analysis within the HRSA (as described above) for the Project. The viewshed model considered vegetation, structures, and the curvature of the earth, to delineate those areas that may have potential views of the proposed wind turbines (based on the maximum potential height of the turbines (i.e., blade tips in the upright position). As depicted in Figure 1.3-1 and described in Table 2.3-1, the viewshed analysis results indicated that potential visibility of the proposed wind turbines (from ground-level vantage points) is limited to 283.6 square miles (734.4 sq. km), or 16.1 percent of the land area, within the HRSA.

For the purpose of this report, the PAPE was used to define those areas in which further analysis is warranted to determine the degree of Project visibility and to assess potential visual effects on aboveground historic properties, as described in Section 2.2. The PAPE include portions of the coastline of New Jersey (see Figure 1.3-1).

3.0 ABOVEGROUND HISTORIC PROPERTIES WITHIN THE PRELIMINARY AREA OF POTENTIAL EFFECTS

3.1 Methodology to Identify Aboveground Historic Properties⁵

EDR's evaluation of potential visual effects to aboveground historic properties was conducted in coordination with the VIA and draws upon much of the same analyses. Aboveground historic properties are one example of "visually sensitive sites" evaluated as part of the VIA (EDR, 2021e). Visually sensitive sites are locations identified by national, state, or local governments, organizations, and/or Native American tribes that warrant consideration or protection in terms of changes to the visual environment. The VIA prepared for the Atlantic Shores Offshore Wind Project (EDR, 2021e) includes an inventory of visually sensitive sites, including aboveground historic properties, for the entire 40-mile (64.4 km) radius Visual Study Area for the Project.⁶ The VIA includes an evaluation of the potential visibility and visual effect generated by the Project on visually sensitive sites. Aboveground historic properties may be particularly sensitive to changes in the visual environment due to the potential for such changes to diminish their historic integrity. The HRVEA report is focused exclusively on potential visibility and visual effects of the Project on aboveground historic properties and utilizes a more refined 40-mile (64.4 km) HRSA.

As noted in Section 1.1, an aboveground historic property is defined per 36 CFR 585 as any property located within the HRSA that has been designated a National Historic Landmark (NHL), been listed in, or been determined eligible for listing in the NRHP. In order to provide a comprehensive analysis for all relevant consulting agencies, all inventoried properties in the NJHPO historic property database, county databases, or other municipal-level sources located within the Historic Resources Study Area are also are considered *potentially* eligible for listing in the NRHP (see Glossary). The HRVEA does not include the identification of new or previously unidentified aboveground historic properties that are potentially eligible for listing in the NRHP.

To identify aboveground historic properties, EDR conducted a desktop review of the records of state and federal agencies, GIS databases, previous cultural resources surveys, and historical collections to develop an inventory of previously identified aboveground historic properties within the Historic Resources Study Area for the Project.

Resources reviewed as part of this process included:

• The New Jersey Department of Environmental Protection (NJDEP) Look Up Cultural Resources Yourself (LUCY) website (NJDEP, 2020);

⁵ As discussed in Section 1.2, this report addresses aboveground historic properties, including traditional cultural properties. ⁶ As described in Section 2.2, the Historic Resources Study Area, the area within 40 miles of the proposed turbines in the WTA, is distinct from the Visual Study Area, defined in Section 1.2.1 of the VIA as the area within 40 miles of the entire OCS-A Lease Area.

- The Atlantic County Division of Parks and Recreation *Historical Sites* webpage (Atlantic County, 2020);
- The Monmouth County Parks System (MCPS) Monmouth County Historic Sites Inventory (MCHSI) website (MCPS, 2020);
- Multiple Property Documentation Forms for relevant aboveground historic properties located within the HRSA; and
- Aboveground historic properties identified as part of studies conducted by BOEM in 2012 in order to prepare a GIS database of known aboveground cultural resources/historic properties that could be affected by the introduction of offshore energy facilities along the east coast of the United States;⁷

A viewshed analysis (described in Section 2.3.1) was then completed to determine which specific aboveground historic properties were located within the PAPE (i.e., within areas where there is a theoretical potential for visibility of the Project). This analysis was conducted by first using the Spatial Join extension in the ESRI ArcGIS® software to determine which aboveground historic properties within the Historic Resources Study Area were found to fall within the preliminary viewshed. Next, redundant points were eliminated, along with contributing properties (e.g., those not individually significant) which were located within historic districts.

Based on the results of the desktop review of previously identified aboveground historic properties, EDR classified the types of setting of aboveground historic properties within the Historic Resources Study Area into seven internally defined thematic aboveground historic property types that could be used to determine the potential for visual effects and develop an appropriate methodology to assess visual effects. Similarities among the identified aboveground historic properties in terms of historic setting, significance, and spatial relationship to the Atlantic Ocean and surrounding landscape provided a framework by which to define these thematic property types, an approach rooted in the criteria for eligibility and significance set forth by the NPS in the National Parks Service bulletin, *Guidelines for Completing National Register of Historic Places Forms* (NPS, 1977).

A total of six aboveground historic property types are included within the Historic Resources Study Area and PAPE:

- Native American Sites, Historic Districts, and Traditional Cultural Properties (TCPs)
- Historic Homes and Structures

⁷ Klein, J.I., M.D. Harris, W.M. Tankersley, R. Meyer, G.C. Smith, and W.J. Chadwick. 2012. *Evaluation of visual impact on cultural resources/historic properties: North Atlantic, Mid-Atlantic, South Atlantic, and Florida Straits. Volume I: Technical report of findings.* U.S. Dept. of the Interior, Bureau of Ocean Energy Management, Gulf of Mexico OCS Region, New Orleans, LA. OCS Study BOEM 2012-006. 24 pp., and Klein, J.I., M.D. Harris, W.M. Tankersley, R. Meyer, G.C. Smith, and W.J. Chadwick. 2012. *Evaluation of visual impact on cultural resources/historic properties: North Atlantic, Mid-Atlantic, Mid-Atlantic, South Atlantic, and Florida Straits. Volume II: Technical report of sual impact on cultural resources/historic properties: North Atlantic, Mid-Atlantic, South Atlantic, and Florida Straits. Volume II: Appendices. U.S. Dept. of the Interior, Bureau of Ocean Energy Management, Gulf of Mexico OCS Region, New Orleans, LA. OCS Study BOEM 2012-007. 10 appendices.*

- Lighthouses and Navigational Aids
- Recreational Properties
- Maritime Safety and Defense Facilities
- Transportation Sites and Corridors

In addition, a review of the sources identified above did not include any previously identified archaeological sites located within the Historic Resources Study Area. Analyses of potential Project effects to archaeological resources are described in separate reports.

A description of each of the internally defined aboveground historic property type and the characteristics that may qualify each property for listing in the NRHP is included in Section 3.2. Due to the proximity of, and in some cases, intentional siting of these properties near the water, identification of common attributes for each property type that contribute to the maritime significance (or lack thereof) are also described, if applicable.

The aboveground historic properties discussed in Section 3.1.1 may be considered to have "potential visibility." In other words, the Spatial Join function used by ESRI ArcGIS® determined that some portion of each aboveground historic property was found to intersect with the viewshed. To provide a more accurately defined list of aboveground historic properties that may have potential views of the Project, a further level of assessment of the aboveground historic properties within the PAPE was completed, which was intended to focus the assessment of potential visual effects on aboveground historic properties to those that would have more precise assessment of potential visibility.

Single "pixels", or "cells", of visibility produced in the 3-meter viewshed assessment for the Project (described in Section 2.3.1) represent 0.00222-acre, or approximately 96 square feet (9 sq. m) of space and may be considered erroneous or otherwise not representative of actual visibility. Therefore, aboveground historic properties with only one "cell" of visibility were not considered to have actual views of the Project.

Due to their elevated views and heightened significance as prominent aboveground historic properties along the Atlantic coast of the United States, all Lighthouses and Navigation Aids (described in Section 3.2.3) within the PAPE were included in the final assessment of visual effects.

3.1.1 Aboveground Historic Properties

Historic Resources Study Area

Within the Historic Resources Study Area for the Project, EDR identified a total of 4,625 aboveground historic properties, including a total of three NHLs (inclusive of individual landmarks and NHL districts), and 122 historic districts and individual properties listed in the NRHP. Additionally, the Historic Resources Study Area includes the following previously identified aboveground historic properties: 17 SRHP-listed properties, 136 NRHP-eligible properties, and 4,347 NJHPO-identified properties.

PAPE

Within the Project PAPE, EDR identified two National Historic Landmarks and 13 historic districts and individual properties listed in the NRHP. Additionally, the PAPE includes the following previously identified properties: three SRHP-listed properties, 39 NRHP-eligible properties, and 265 potentially NRHP-eligible properties. Historic sites within the PAPE which have designations apart from the districts in which they are located were counted as individual properties. The total number of properties within the PAPE represents approximately 7 percent of all aboveground historic properties within the Historic Resources Study Area.

The viewshed analysis indicates that a total of 321 aboveground historic properties are located within the PAPE for the Project, illustrated in Figure 3.1-1 The properties are summarized and enumerated in Table 3.1-1 below. The potential effect on each individual property located within the PAPE is included as Attachment A.

Property Designation	Occurrences of Aboveground Historic Properties Within The PAPE	
National Historic Landmark (NHL) properties and districts	2	
Aboveground Historic Properties and Historic Districts Listed in the National Register of Historic Places	13	
Aboveground Historic Properties and Historic Districts Listed in the New Jersey State Register of Historic Places	3	
Aboveground Historic Properties Eligible for Listing in the National or State Register of Historic Places ^a	38	
Aboveground Historic Properties Potentially Eligible for Listing in the National or State Register of Historic Places ^b	265	
Total	321	

Table 3.1-1.	. Aboveground	Historic	Properties	within the	PAPE

a One aboveground historic property determined NRHP-eligible by NJHPO (Wildwoods Shore Resort Historic District) was also listed on the New Jersey State Register of Historic Places.

b As described above, properties considered potentially NRHP-eligible include properties identified by NJHPO, county-level, or other municipal sources.



Atlantic Shores Offshore Wind Project

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Figure 3.1-1: Previously Identified Aboveground Historic Properties within the Preliminary Area of Potential Effect





Notes: 1. Basemap: ESRI ArcGIS Online "World Topographic Map" map service. 2. This map was generated in ArcMap by EDR on March 23, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

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Outer Continental Shelf

Figure 3.1-1: Previously Identified Aboveground Historic Properties within the Preliminary Area of Potential Effect







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Figure 3.1-1: Previously Identified Aboveground Historic Properties within the Preliminary Area of Potential Effect

Preliminary Area of Potential Effect (PAPE)	
Historic Resources Study Area	
Previously Identified Aboveground Historic Properties	
National Historic Landmark	
NRHP-Listed Property	
NRHP-Eligible Property (NJHPO Determined)	
Potentially NRHP-Eligible Property	
SRHP-Listed Property	





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Figure 3.1-1: Previously Identified Aboveground Historic Properties within the Preliminary Area of Potential Effect

Preliminary Area of Potential Effect (PAPE)	
Historic Resources Study Area	
Previously Identified Aboveground Historic Properties	
National Historic Landmark	
NRHP-Listed Property	
NRHP-Eligible Property (NJHPO Determined)	
Potentially NRHP-Eligible Property	
SRHP-Listed Property	









Outer Continental Shelf

Figure 3.1-1: Previously Identified Aboveground Historic Properties within the Preliminary Area of Potential Effect

	Preliminary Area of Potential Effect (PAPE)
C2	Historic Resources Study Area
Previously Identified Aboveground Historic Properties	
	National Historic Landmark
	NRHP-Listed Property
	NRHP-Eligible Property (NJHPO Determined)
	Potentially NRHP-Eligible Property
	SRHP-Listed Property









Outer Continental Shelf

Figure 3.1-1: Previously Identified Aboveground Historic Properties within the Preliminary Area of Potential Effect

Preliminary Area of Potential Effect (PAPE)
Historic Resources Study Area
Previously Identified Aboveground Historic Properties
National Historic Landmark
NRHP-Listed Property
NRHP-Eligible Property (NJHPO Determined)
Potentially NRHP-Eligible Property
SRHP-Listed Property









Outer Continental Shelf

Figure 3.1-1: Previously Identified Aboveground Historic Properties within the Preliminary Area of Potential Effect

	Preliminary Area of Potential Effect (PAPE)
<u> </u>	Historic Resources Study Area
Previously Identified Aboveground Historic Properties	
	National Historic Landmark
	NRHP-Listed Property
	NRHP-Eligible Property (NJHPO Determined)
	Potentially NRHP-Eligible Property
	SRHP-Listed Property





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Figure 3.1-1: Previously Identified Aboveground Historic Properties within the Preliminary Area of Potential Effect











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Figure 3.1-1: Previously Identified Aboveground Historic Properties within the Preliminary Area of Potential Effect

Preliminary Area of Potential Effect (PAPE)
Historic Resources Study
Previously Identified Aboveground Historic Properties
National Historic Landmark
NRHP-Listed Property
NRHP-Eligible Property (NJHPO Determined)
Potentially NRHP-Eligible Property
SRHP-Listed Property









Outer Continental Shelf

Figure 3.1-1: Previously Identified Aboveground Historic Properties within the Preliminary Area of Potential Effect

Preliminary Area of Potential Effect (PAPE)
Historic Resources Study Area
Previously Identified Aboveground Historic Properties
National Historic Landmark
NRHP-Listed Property
NRHP-Eligible Property (NJHPO Determined)
Potentially NRHP-Eligible Property
SRHP-Listed Property









Outer Continental Shelf

Figure 3.1-1: Previously Identified Aboveground Historic Properties within the Preliminary Area of Potential Effect

Preliminary Area of Potential Effect (PAPE)
Historic Resources Study Area
Previously Identified Aboveground Historic Properties
National Historic Landmark
NRHP-Listed Property
NRHP-Eligible Property (NJHPO Determined)
Potentially NRHP-Eligible Property
SRHP-Listed Property





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Figure 3.1-1: Previously Identified Aboveground Historic Properties within the Preliminary Area of Potential Effect

Preliminary Area of Potential Effect (PAPE)	
Historic Resources Study Area	
Previously Identified Aboveground Historic Properties	
National Historic Landmark	
NRHP-Listed Property	
NRHP-Eligible Property (NJHPO Determined)	
Potentially NRHP-Eligible Property	
SRHP-Listed Property	









Outer Continental Shelf

Figure 3.1-1: Previously Identified Aboveground Historic Properties within the Preliminary Area of Potential Effect

Preliminary Area of Potential Effect (PAPE)	
Historic Resources Study	
Previously Identified Aboveground Historic Properties	
National Historic Landmark	
NRHP-Listed Property	
NRHP-Eligible Property (NJHPO Determined)	
Potentially NRHP-Eligible Property	
SRHP-Listed Property	





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Figure 3.1-1: Previously Identified Aboveground Historic Properties within the Preliminary Area of Potential Effect







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Outer Continental Shelf

Figure 3.1-1: Previously Identified Aboveground Historic Properties within the Preliminary Area of Potential Effect

Preliminary Area of Potentia Effect (PAPE)	
Historic Resources Study Area	
Previously Identified Aboveground Historic Properties	
National Historic Landmark	
NRHP-Listed Property	
NRHP-Eligible Property (NJHPO Determined)	
Potentially NRHP-Eligible Property	
SRHP-I isted Property	









247 251 255 258 257 257	153 154 156 157 246 248 248 248
-262 -263	254 252-235
7 266	

Outer Continental Shelf

Figure 3.1-1: Previously Identified Aboveground Historic Properties within the Preliminary Area of Potential Effect







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Outer Continental Shelf

Figure 3.1-1: Previously Identified Aboveground Historic Properties within the Preliminary Area of Potential Effect







Notes: 1. Basemap: ESRI ArcGIS Online "World Topographic Map" map service. 2. This map was generated in ArcMap by EDR on March 23, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

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Outer Continental Shelf

Figure 3.1-1: Previously Identified Aboveground Historic Properties within the Preliminary Area of Potential Effect

	Preliminary Area of Potential Effect (PAPE)
<u>C</u> 2	Historic Resources Study Area
Previously Identified Aboveground Historic Properties	
	National Historic Landmark
	NRHP-Listed Property
	NRHP-Eligible Property (NJHPO Determined)
	Potentially NRHP-Eligible Property
	SRHP-Listed Property





Notes: 1. Basemap: ESRI ArcGIS Online "World Topographic Map" map service.
2. This map was generated in ArcMap by EDR on March 23, 2021.
3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

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offshore wind

3.2 Aboveground Historic Property Types

3.2.1 Native American Sites, Buildings, Structures, Districts, and TCPs

The setting type "Native American Traditional Cultural Properties (TCP)" is defined by the historic associations with the aboriginal populations that originally inhabited the 40-mile (64.4 km) HRSA. These properties share enduring relationships to local Native American Tribes. No formally listed TCPs have been identified within the HRSA, but additional consultations with Tribes and NJHPO are anticipated to ensure appropriate consideration of such properties. Due to the vulnerability of archaeological sites and the artifacts and cultural materials contained therein to looting, vandalism, and other damage, previously identified sites within the PAPE will not be enumerated, and their locations are not depicted on any of the maps included with this report.

There are no currently known TCPs located within the PAPE, although the relative rarity of historic properties documented as TCPs may reflect the infrequent formal evaluation of resources under existing NPS TCP guidance rather than a lack of places significant to Tribes or other communities for their association with cultural practices, traditions, and beliefs. Although rarely assessed as such in formal documentation, other historic properties included in the state inventories and historic registers may also be significant as TCPs for their associations with the traditional beliefs and practices of Native American tribes. Atlantic Shores will continue to engage in consultation with the relevant state preservation offices, THPOs and tribal authorities to evaluate the proposed Project's potential effect on TCPs.

According to the NPS:

"A Traditional Cultural Property (TCP) is a property that is eligible for inclusion in the National Register of Historic Places (NRHP) based on its associations with the cultural practices, traditions, beliefs, lifeways, arts, crafts, or social institutions of a living community. TCPs are rooted in a traditional community's history and are important in maintaining the continuing cultural identity of the community" (NPS, 2012).

The boundaries of TCPs are often difficult to determine and may embrace large areas of sea and land significant for their complex associations with beliefs and practices of one or more communities. In addition, the locations of TCPs, their boundaries, and other information typically sought to evaluate the NRHP eligibility of properties may be highly sensitive to the communities for whom such places are important. Sharing some forms of traditional knowledge with non-community members may be inappropriate, even when that information may assist in the identification and protection of places with an important role in sustaining cultural identity and a traditional community's well-being (e.g. Parker and King, 1990).

The nature of some of these properties may complicate efforts to identify and consider potential visual or other effects caused by a federal undertaking:

"Traditional cultural properties are often hard to recognize. A traditional ceremonial location may look like merely a mountaintop, a lake, or a stretch of river; a culturally important neighborhood may look like any other aggregation of houses, and an area where culturally important economic or artistic activities have been carried out may look like any other building, field of grass, or piece of forest in the area. As a result, such places may not necessarily come to light through the conduct of archeological, historical, or architectural surveys. The existence and significance of such locations often can be ascertained only through interviews with knowledgeable users of the area, or through other forms of ethnographic research. The subtlety with which the significance of such locations may be expressed makes it easy to ignore them; on the other hand, it makes it difficult to distinguish between properties having real significance and those whose putative significance is spurious" (Parker and King, 1990: 2).

Common Attributes of This Property Type

As stated above, it is difficult to describe the characteristics common to all TCPs due to variation in what constitutes a TCP, variable amounts of available documentation, and cultural constraints on the dissemination of information regarding some TCPs. Although no TCPs are known to exist within the PAPE, it is worth noting some general common attributes with respect to their visual setting:

- Significance to tribes located within the PAPE;
- Location within tribal lands;
- Ceremonial importance and/or other role in traditional beliefs and practices;
- Associations with events or persons significant in tribal histories, including those associated with cultural heroes;
- Location along or near the water;
- Clear views of the ocean;
- View of the rising sun;
- Direct access to the water; or
- Potential views across open seas to other land masses or landforms.

3.2.2 Historic Homes and Structures

The property type "Historic Homes and Structures" is the largest grouping of aboveground historic properties within the Atlantic Shores Offshore Wind Project PAPE. Historic Homes and Structures within the PAPE consist mostly of vernacular residences, or groupings of residences, although this property type also includes parks, monuments, and even infrastructure. The overall character of these individual properties and districts is residential or intended for public enjoyment, and are typically listed due to each aboveground historic property's unique significance or the combined significance of the aboveground historic properties forming an historic district, and usually qualify under National Register Criteria A and C. These factors are shared among the aboveground historic property to a degree which justifies their

grouping as an aboveground historic property type. There are 262 extant Historic Homes and Structures located within the PAPE.

A representative example of the aboveground historic property type is the John Stafford Historic District (88000723), an approximately 8-acre (3.2 ha) district encompassing three residential blocks in the City of Ventnor, New Jersey, approximately 12.5 miles (20.1 km) from the Project. Bounded by Atlantic, Austin, and Vassar Avenues and the Boardwalk, the district is comprised of 30 contributing structures and one non-contributing structure. The residences within the district were built between 1914 and 1924 by the developer John Stafford and were designed by Philadelphia architects such as Frank Seeburger and J. Fletcher Street (Thomas, 1986). The district was listed in the NRHP in 1988.

Common Attributes of This Property Type

The Historic Homes and Structures within the PAPE have historically served as the homes, businesses, civic and cultural buildings, monuments and landscapes of the residents in the coastal areas of New Jersey. These property types often are adjacent to and offer clear views of the ocean or are significant due to their development as residential communities. For many aboveground historic properties of this type, a relationship with the Atlantic Ocean is essential to their historic integrity. In addition, a number of historical monuments are included with this aboveground historic property type.

Historic Homes and Structures are important elements of cultural heritage within the PAPE, within the majority of examples found along or near the shoreline of New Jersey. While no official documentation relative to the maritime significance of this specific property type is known, several common features are mentioned across the breadth of the individual nomination forms that may be considered as the common attributes with respect to their visual setting:

- Historic maritime (fishing and shipping) economy;
- Location along or near the water;
- Views and vistas of the Atlantic Ocean;
- Vernacular design and locally sourced materials;
- Landscape design derived from the natural environment; and
- Local historic associations.

3.2.3 Recreational Properties

The property type "Recreational Properties" is defined by the role these properties served in their original functions as places for the resort tourism economy of the late-nineteenth century to flourish. These properties feature beaches, restaurants, and other buildings and structures built to entertain seasonal vacationers. They are typically located near the shoreline or immediately adjacent to the sea, and in some cases, are the beaches themselves. The enjoyment of, and interaction with, the sea are integral features of the significance of these properties. In many cases, the beachfront, shoreline, and adjacent ocean waters are prominent features of the historic setting due to their close association with historic

recreational activities. There are 28 extant Recreational Properties located within the PAPE for the Atlantic Shores Offshore Wind Project.

An example of this type of aboveground historic property is the Shelburne Hotel (78001733), a 12-story Georgian Revival-style brick and limestone hotel located at Michigan Avenue and the Boardwalk in Atlantic City, New Jersey, approximately 11.3 miles (18.2 km) from the nearest turbine. Built between 1922 and 1926, the Sherburne Hotel features a tower and cupola, full entablature, and a parapet wall. The hotel served some notable guests during the twentieth century and hosted the 1964 Democratic Convention (Fricker, 1977). It was listed in the NRHP in 1978.

Common Attributes of This Property Type

The Recreational Properties within the PAPE have historically provided enjoyment for visitors and summer residents in the coastal areas in New Jersey. From private, elite sports facilities to simple but elegant accommodations, these properties served the entertainment needs of the seaside resort economy. These property types often are adjacent to the ocean and offer unobscured views of the ocean or direct interaction with the beach. For many properties of this type, views of the Atlantic Ocean are essential to their historic integrity.

Recreational Properties are important elements of cultural heritage in the PAPE. While no official documentation relative to the maritime significance of this specific property type is known, several common features are mentioned throughout the individual nomination forms that may be considered as common attributes with respect to their visual setting:

- Functionality designed for human interaction;
- Location along or near the water;
- Views and vistas of the Atlantic Ocean;
- Landscaped lawns and gardens; and
- Ancillary buildings, such as garages, caretaker cottages, or sheds.

3.2.4 Transportation Sites and Corridors

Transportation Sites and Corridors within the PAPE consist of properties associated with the rapid and mass conveyance of people and materials that contributed to the growth and development of communities within the PAPE. There are 17 Transportation Sites and Corridors located within the PAPE.

One example of this aboveground historic property type is the West Jersey and Atlantic Railroad Historic District (New Jersey Identification [NJID] 2938), an historic district consisting of an approximately 34.2mile-long (55 km) former railway constructed in 1880 between Atlantic City and May's Landing, New Jersey (Gladulich, 1986). At its closest point, the district is located approximately 36.8 miles (52.2 km) from the nearest turbine. The West Jersey and Atlantic Railroad Historic District was instrumental in the formation of towns along the railroad ROW, including Minetola, Buena, Richland, Mizpah, Reega, McKee City, and Cardiff. The linking of Mays Landing with areas of Atlantic County inland from the coast was also important to the development of the area. In addition, the *Blue Comet*, a famous passenger train that ran from 1929 to 1941 between (primarily) New York City and Atlantic City. It was determined eligible for listing NRHP by NJHPO in 1996 (Guzzo, 1996).

Common Attributes of This Property Type

The Transportation Sites and Corridors within the PAPE have contributed to the development of New Jersey and the formation of the United States. These types of properties can include a variety of geospatial layouts, from single sites, such as airport terminals, to linear ROWs that span multiple counties and pass through rural, suburban, and urban contexts as they pass through multiple townships and cities. They may include all land and features historically associated with a given property within its period of significance, in addition to all transportation-related features such as roadways, railway beds, vegetation and screening areas, toll plazas, culverts, bridges, abandoned trestles and abutments, runways, sidings, railway stations, control towers, aircraft hangars and other infrastructure. These aboveground historic properties can also derive significance by association with other intransitive resources, i.e., the *Blue Comet*'s route along the West Jersey and Atlantic Railroad Historic District.

Transportation Sites and Corridors are important elements of cultural heritage in New Jersey. The National Parks Service published National Register Bulletin #18, *How to Evaluate and Nominate Designed Historic Landscapes* in 1987 (NPS, 1987). This document includes "parkways, drives and trails" among the types of properties that are considered eligible for listing in the NRHP as designated historic landscapes, and provides a methodological guide for the definition of battlefield boundaries, identifying pertinent resources, and research design. Transportation Sites and Corridors can be determined significant under all four of the National Register eligibility criteria, due to their associations with social movements and trends, design by master engineers or designers, or by being examples of an historic design style.

In addition, in 1998 the NPS has published National Register Bulletin #43, *Guidelines for Evaluating and Documenting Historic Aviation Properties* (NPS, 1998). This document provides the justification for a wide range of properties to be considered eligible by virtue of their association with the history of flight in the United States. These include airports, hangars, airstrips, and aircraft themselves, but can also include test facilities, aeronautics manufacturing sites and rocket launch pads. The influence of aviation on American architecture, transportation, and culture is as deep and far-reaching as that of the railroad and the automobile. Therefore, aboveground historic properties related to aviation provide a logical supplement to the Transportation Sites and Corridors property type and are included in this category.

Therefore, Transportation Sites and Corridors may be said to have the following common attributes with respect to their visual setting:

- Modified or engineered landscapes;
- Traverse multiple municipalities and developmental contexts;
- Transportation-related buildings and resources; and
- Corridors of movement still in use or abandoned.

3.2.5 Lighthouses and Navigational Aids

The property type "Lighthouses and Navigational Aids" is defined by the historic associations with waterrelated transportation and defense, prominent views of the sea and dominance of the surrounding landscape, and common architectural forms. These structures present themselves as prominent and iconic features on the coastal landscape, possess elevated views of the ocean horizon, and are sited specifically for those elevated views. There are nine extant Lighthouses and Navigational Aids located within the PAPE for the Atlantic Shores Offshore Wind Project.

Lighthouses hold a special place of prominence in the history of the United States. With nearly 13,000 miles (20921.4 km) of coastline, the U.S. system of light station navigational aids is the largest and most complex in the world. Over the years, there have been several guidance documents published by the NPS and various SHPOs related to lighthouses and their historic significance. These documents have provided a framework with which to holistically consider lighthouses as an aboveground historic property type. According to the 2002 NPS Multiple Property Documentation Form (MPDF) *Light Stations in the United States*, "the United States has more lighthouses and diverse architectural and engineering types than any other country in the world" (NPS, 2002).

This comment is illustrated by the wide variation of construction methods, shapes, building materials, and foundation types among America's lighthouses. The *Light Stations* MPDF goes on to acknowledge the common features of a lighthouse by stating that it uses the 1915 U.S. Lighthouse Service definition of lighthouses as "lights where resident keepers were employed" (NPS, 2002). It also states that "[t]he tower is vital to defining the station."

According to the *Light Stations MPDF*, the key element that makes up a lighthouse complex, or light station, is the light tower, defined by the document as a "support for the lantern that housed the light" (NPS, 2002). The *Light Stations* MPDF also separates lighthouse architecture and construction into regional classes.

The National Parks Service published an *Inventory of Historic Light Stations* in 1994 (NPS, 1994). This work, carried out by the NPS's National Maritime Initiative, was responsible for the survey and evaluation of the nation's historic maritime resources, including 631 existing historic lighthouse towers. According to the *Inventory of Historic Light Stations*, a light station (lighthouse) would "at the very least... have a tower supporting an optic and housing for the keeper; in many instances, one structure would serve both functions" (NPS, 1994).

New Jersey is home to a variety of different lighthouse designs, including masonry, poured concrete, and steel exoskeletons. The *Light Stations MPDF* notes that the light stations of the Delaware River and Bay area is "one of the most extensive" anywhere on Earth (NPS, 2002).

As a result of the definitions and the accepted grouping of this property type by the official government literature, lighthouses may be appropriately considered an aboveground historic property type. They may be broadly defined as water-related navigation aids to transportation and defense consisting of a light

tower, featuring prominent views of the sea, and dominance of the surrounding landscape generally shared among all the individual properties. In addition to the overall design similarities, the integrity of setting, feeling, and association shared among these properties justifies this grouping.

A representative example of this property type is the Absecon Lighthouse (71000492). The property is located at Vermont and Pacific Avenues, Atlantic City, New Jersey, approximately 10.6 miles (17 km) from the nearest turbine.

Absecon Lighthouse was originally constructed in 1856 and was designed by George Mead, the future commander of Union forces at the Battle of Gettysburg. The iron and brick lighthouse tower stands at a height of 171 feet (52.1 m) above sea level. The lighthouse served the inlet to Absecon Bay from 1857 until 1933, when the station was decommissioned. The lighthouse's historic setting on the northern tip of Absecon Island has been altered as dense development of the surrounding area has occurred in the nearly 90 years since it was decommissioned. The lighthouse was listed in the NRHP in 1970 (Wilson, 1970).

Common Attributes of This Property Type

The *Light Stations in the United States* MPDF contains language that describes a "hierarchy of characterdefining features" for lighthouses (NPS, 2002). This section details the features by which the integrity of a historic light station may be assessed. Regarding setting, the *Light Stations* MPDF states the following:

"Setting is the physical environment of a historic property that illustrates the character of the place. Integrity of setting remains when the surroundings of a light station have not been subjected to radical change. Integrity of setting of an isolated lighthouse would be compromised, for example, if it were now completely surrounded by modern development. The historic Eaton's Neck lighthouse (1799), New York, is immediately surrounded by five modern two-story dwellings built to provide housing for Coast Guard personnel at the station. The setting for this otherwise historic structure has been compromised" (NPS, 2002).

Therefore, Lighthouses and Navigational Aids may be said to have the following common attributes with respect to their visual setting:

- Direct physical location and/or historic functional relationship with the sea;
- Elevated and prominent views of the sea;
- Visual prominence of the surrounding landscape;
- Isolation or at least spatial dominance of the surrounding landscape; and
- Proximal relationship to shipping lanes.

3.2.6 Maritime Safety and Defense Facilities

The property type "Maritime Safety and Defense Facilities" within the PAPE consists entirely of facilities erected by bureaus of the U.S. Department of Defense or their predecessors and share historic

associations with coastal defense. These structures vary in their design and construction materials but are unified by their historic functions of rescuing and protecting maritime transportation in the area, or for coastal defense. There are five extant Maritime Safety and Defense Facilities located within the PAPE for the Atlantic Shores Offshore Wind Project.

A representative example of this property type is the United States Coast Guard (USCG) Station Atlantic City (NJID 4745), a USCG complex located at 900 Beach Thorofare in Atlantic City, approximately 11.5 miles (18.5 km) from the nearest turbine. The two-story Colonial Revival-style structure set on the Absecon Inlet was built in 1939 and renovated in 1988 (USCG, 2017). It was determined eligible by NJHPO in 2007 (NJHPO, 2020).

Common Attributes of This Property Type

The Maritime Safety and Defense Facilities within the Atlantic Shores Offshore Wind Project PAPE have served to protect and act as rescue stations for the coastal waters of New Jersey. These properties were constructed as government buildings that needed open views and access to the ocean to fulfill their functional roles and are therefore located immediately adjacent to the coastline to facilitate direct interaction with the water. For all properties of this type, a physical relationship to the Atlantic Ocean is essential to historic integrity.

Maritime Safety and Defense Facilities are important elements of cultural heritage within the PAPE. The United States Coast Guard and NPS established a MPDF and associated historic contexts for U.S. Lifesaving Stations and U.S. Coast Guard Lifeboat Stations in 2013. The 1848 to 1950 period of significance addressed in these historic contexts captures multiple aboveground historic properties within the PAPE, though the prominent examples in the local setting were listed in the National Register prior to the adoption of the MPDF. The national context for historic light stations was developed in a separate MPDF (NPS, 2002), as described below. Several common features, mentioned across the breadth of the individual nomination forms and MPDFs, which may be considered as common attributes with respect to their visual setting:

- Construction commissioned by the federal government for use by a bureau of the Department of Defense;
- Built for interaction between the structure and ocean-going vessels;
- Location along or near the water;
- Clear views of the ocean, and/or direct access to the water; and
- Design includes living quarters and functional space.

4.0 VISUAL EFFECTS ASSESSMENT

Construction of the Project will not require the demolition or physical alteration of any historic buildings or other aboveground historic properties. As described in Section 2.1 of this report, the potential effect of the Project on a given aboveground historic property would be a change (resulting from the introduction of wind turbines) in a property's visual setting. As it pertains to historic properties, the NRHP criterion for *setting* is defined as "the physical environment of a historic property" and is one of seven aspects of a property's *integrity*, which refers to the "ability of a property to convey its significance" (NPS, 1990:44-45). The other aspects of integrity include location, design, materials, workmanship, feeling, and association (NPS, 1990).

Section 106 of the NHPA requires Federal agencies to consider the effects of their actions on historic properties that are listed or meet the eligibility criteria for listing in the NRHP. Per NHPA Section 106, 36 CFR § 800.5 (a)(1), the assessment of adverse effects on an historic property requires the following steps:

"(a) Apply criteria of adverse effect. In consultation with the SHPO/THPO and any Indian tribe or Native Hawaiian organization that attaches religious and cultural significance to identified historic properties, the agency official shall apply the criteria of adverse effect to historic properties within the area of potential effects. The agency official shall consider any views concerning such effects which have been provided by consulting parties and the public.

(1) Criteria of adverse effect. An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Consideration shall be given to all qualifying characteristics of a historic property's eligibility for the National Register. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative" (CFR, 2019).

Per NHPA Section 106, 36 CFR § 800.5 (a)(2)(i-vii), adverse effects on historic properties include, but are not limited to:

"(i) Physical destruction of or damage to all or part of the property;

(ii) Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the Secretary's standards for the treatment of historic properties (36 CFR Part 68) and applicable guidelines;

(iii) Removal of the property from its historic location;

(iv) Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance;

(v) Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features;

(vi) Neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization; and

(vii) Transfer, lease, or sale of property out of Federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance" (CFR, 2019).

The primary adverse effect on aboveground historic properties resulting from the Project would be consistent with 36 CFR § 800.5(a)(2)(v), "Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features." The potential effect resulting from the introduction of wind turbines into the visual setting for any historic or architecturally significant property is dependent on a number of factors, including distance, visual dominance, orientation of views, viewer context and activity, and the types and density of modern features in the existing view (such as buildings/residences, overhead electrical transmission lines, cellular towers, billboards, highways, and silos).

As previously described in Section 2.3, the potential visibility and visual effect of the Project is evaluated in the VIA (Appendix II-M1; EDR, 2021e) and Section 5.0 of the COP. Potential visibility of the Project from aboveground historic properties within the PAPE is listed in Attachment A and is depicted in Figure 3.1-2. The total number of each aboveground historic property type included in the assessment of all aboveground historic properties included within the PAPE and a description of a representative example of each type of aboveground historic property in each state is included in Section 4.1 below.

4.1 Visual Effect on Aboveground Historic Properties

A HRVEA table, included as Attachment A assesses the potential effect of each individual aboveground historic property located within the Project PAPE, respectively. Potential visual effects were assessed by considering a number of factors for each aboveground historic property, including:

- Maritime setting;
- Contribution of views of the sea to the aboveground historic property's significance; and
- The location and orientation of the aboveground historic property relative to the shoreline/sea.

EDR reviewed the characteristics contributing to historic significance for each of the identified aboveground historic properties that have been determined as part of previous cultural resources surveys, NRHP resource documentation, or state-level documentation (where such documentation was available) to determine whether the aboveground historic property had a significant maritime setting. The criteria

for significant maritime setting used in this HRVEA are consistent with the criteria defined in the *Evaluation of visual impact on cultural resources/historic properties: North Atlantic, Mid-Atlantic, South Atlantic, and Florida Straits* (BOEM, 2012):

"Resources within this category derived their importance, in whole or in part, from their proximity to the sea. They included TCPs, coastal fortifications, parks and seashores, residential estates, lighthouses, life-saving stations, breakwaters, marinas, fishing and resort communities, and shore lodgings of all kinds, including hotels, motels, inns, seasonal cottages, and permanent residences" (BOEM, 2012).

Significant views to the sea were assessed by desktop review of online mapping systems as well as field observation to determine whether the aboveground historic property has clear, unobstructed views of the sea and whether or not this view contributes to the historic significance of a given aboveground property. Where applicable, visual simulations included in Attachment B that illustrate representative views from historic property types are referenced in the discussion that follows.

The overall sensitivity of an aboveground historic property to visual impacts was determined and assigned a rating of *high*, *medium*, or *low*. This rating classifies each aboveground historic property's susceptibility to visual effects based on several factors defined below and is one part of the overall assessment of potential visual effects. These sensitivity ratings are defined as follows:

- *High*: Aboveground historic properties with a *high* sensitivity for visual effects include those for which the importance of visual setting, scenic quality, and/or association with open, unobstructed views of the sea are explicitly identified as contributing to the significance of the aboveground historic property or are clearly expressed through historic architectural or landscape elements of the aboveground historic property. Public use and visitation of aboveground historic properties in maritime settings may also increase their sensitivity to alterations of historic setting, particularly when such public uses enhance the appreciation of an aboveground historic property's maritime association.
- *Medium*: Aboveground historic properties with a *medium* rating include those where the historic setting of the aboveground historic property is at least partially attributable to its relationship to, and views of, the sea (but other factors such as architectural character contribute to the significance of the aboveground historic property). Aboveground historic properties for which open ocean views are of secondary or tertiary importance to their historical significance may or may not be sensitive to changes to the seascape or maritime setting.
- *Low*: Aboveground historic properties with a *low* rating include those where the historic significance of this aboveground historic properties not derived from its relationship to of views of the ocean, and therefore has a low sensitivity to changes to the seascape or maritime setting.

Eight distinct and empirical points of measurement were also considered in the assessment of the Project's potential adverse visual effect on aboveground historic properties within the PAPE. These points

of measurement were determined using the viewshed assessment generated through ArcGIS as described in Section 2.3 of this report, and are further defined in the VIA (EDR, 2021e). They include:

- Distance from the nearest visible turbine;
- Blade tip elevation;
- Turbine aviation light elevation (;
- Mid-tower aviation light elevation ;
- U.S. Coast Guard (USCG) light elevation ;
- Total acreage of aboveground historic property;
- Total acreage of visibility within the aboveground historic property; and
- The portion of the aboveground historic property (percent of acreage) from which the Project would be potentially visible.

The viewshed analyses used in these points of measurement indicate the portion of WTGs visible above the ocean horizon (AMSL). For example, an aboveground historic property with visibility of just blade tip elevation would only potentially be able to discern the blade tips turning over the horizon, while a property with all four levels of visibility would theoretically have visibility of the entire WTG. EDR's assessment of potential adverse visual effects to aboveground historic properties is intentionally conservative and intended to identify possible impacts that may warrant further consideration through future consultation with agencies and other stakeholders during the Section 106 consultation process. While all the aboveground historic properties within the PAPE have potential views of the wind turbines, due to the effect of distance as well as the Earth's curvature on visibility not all of the aboveground historic properties would have views of full turbines (i.e., in which the entire turbine structure was visible). In order to provide the most conservative level of assessment of potential Project visibility, the number of turbines for which turbine blade tips were visible was used in determining the number of turbines visible from a given aboveground historic property.

In addition, a total of 59 aboveground historic properties within the PAPE have large boundaries (i.e., over 10 acres [4.1 ha]), so that even a small percentage of the viewshed within such an aboveground historic property's acreage could be relatively large. For example, the Garden State Parkway Historic District (NJID 3874), located within the PAPE, occupies 4,344 acres (2,162.6 ha) across multiple counties in New Jersey. The viewshed analysis indicated that 3.1 percent of this aboveground historic property had potential views of the Project. In this case, 3.1 percent of the aboveground historic property is approximately 165 acres (66.8 ha), which is still a relatively large area of visibility.

Therefore, this quantitative assessment was intended to provide a baseline level of effects which was then supplemented with a qualitative assessment of the contribution of an aboveground historic property's maritime setting to its historic significance, the level of Project visibility, relationship of specific views towards the Project to the location, design, and historic use of an aboveground historic properties, and the overall sensitivity of each aboveground historic properties to visual effects. For example, according to the viewshed analysis the Townsend Inlet Bridge (Structural inventory and Appraisal [SIA] #3100003) was

shown to have theoretical visibility of up to 200 WTGs. However, its historic significance as a Transportation Sites and Corridors property type, distance from the Project of approximately 27.5 miles (42.3 km), and overall low sensitivity to visual effects due to the intransitive nature of viewing the sea from a vehicle traveling across the bridge, and the directional orientation of the bridge which faces away from direct line-of-sight view of the Project, were all taken into consideration. Therefore, there would be no potential adverse visual effect to the Townsend Inlet Bridge (SIA # 3100003).

Finally, applying the Criteria of Adverse Effect per NHPA Section 106, 36 CFR § 800.5 (as summarized above), an assessment of the potential for adverse effect to aboveground historic properties within each of the aboveground historic property types, as well as a discussion of individual aboveground historic properties that may be adversely affected, is provided in the subsections below, and included in Attachment A.

4.1.1 Native American Sites, Buildings, Structures, Districts, and TCPs

As noted in Section 3.2.6, there are currently no known Native American TCPs within the PAPE. Atlantic Shores will continue to engage in consultation with the appropriate state and tribal authorities regarding this issue.

4.1.2 Historic Homes and Structures

There are 273 Historic Homes and Structures within the Project PAPE. The aboveground historic property of this type closest to the Project is the Leeds House (NJID 10168), a two-story vernacular residence located approximately 9.8 miles (15.8 km) from the nearest turbine. The simulation that represents the view from, and visual setting of, this aboveground historic property type, taken from Lucy, the Margate Elephant (71000493), located at the corner of South Decatur and Atlantic Avenues in Margate City, approximately 14.4 miles (23.2 km) from the nearest turbine (see Attachment B: Viewpoint MC02).

The existing view 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 is an eclectic mix of 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.

With the Project in place, the turbines are visible with nacelles and rotors in full view above the horizon, occupying nearly the full field of view. The WTGs are concealed behind the apartment building on the left side of the view. The towers are not evenly spaced in this view, and in some instances are concentrated together and as a result, appearing as larger shapes rather than a single turbine. Under the conditions

illustrated in the selected photo, the visibility to the proposed turbines furthest from shore is somewhat softened by the atmospheric haze. However, the full turbines may be even more observable under clearer sky conditions, and will remain a dominant component of this view along with the residential development in the foreground.

Applying the Criteria of Adverse Effect per NHPA Section 106, 36 CFR § 800.5 (as summarized above), the Project has the potential to cause an adverse visual effect to a total of 40 Historic Homes and Structures within the PAPE. For the aboveground historic properties of this type located near or along the shoreline, views of the Project would be unobstructed. However, from the centers of many of the larger cultural landscapes and residential districts where aboveground historic properties of this type are located, Project visibility would be minimal. In addition, not all of the aboveground historic properties of this type derive their significance from their relationship to the ocean. However, the potential visual effect on Historic Homes and Structures within the PAPE is elevated due to the size and scale of the Project. The Project is not anticipated to result in potential adverse effects to 222 aboveground historic properties of this type within the PAPE due to mitigating factors such as limited areas of visibility, distance from the Project, and inland orientation of a given aboveground historic property (see Attachment A).

4.1.3 Recreational Properties

There are 28 Recreational Properties located within the Atlantic Shores Offshore Wind Project PAPE. The aboveground historic property of this type closest to the Project is the Brigantine Hotel, located approximately 9.9 miles (15.9 km) from the nearest turbine. The simulation that represents the view from, and visual setting of, this aboveground historic property type, taken from the NHL Atlantic City Convention Hall (87000814), located on the Boardwalk between Pacific, Mississippi, and Florida Avenues in Atlantic City, New Jersey, approximately 11.4 miles (18.3 km) from the nearest proposed turbine. (see Attachment B, Viewpoint AC02).

This view is from the beach near the Atlantic City Convention Hall. The selected viewpoint is located on an area of open sand directly in front of the Hall. The existing view to the east-southeast from this location features an expanse of level, maintained beach in the foreground, bordered by a row of high-rise buildings on the left and interrupted by a low, modern structure that projects onto the beach from the adjacent urban area. Breaking waves at the shoreline angle across the foreground and middle ground of the view and are interrupted in several places by the remnants of former piers or breakwaters. Beyond the surf, the silver blue ocean extends to the horizon line where it meets a hazy white sky. The beach includes some people but appears relatively unoccupied. Despite the broad expanse of open sand and water, tire tracks in the sand and the eclectic mix of nearby built structures give the view a highly modified developed character.

Viewshed analysis suggests that Project visibility 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 Project will be completely blocked by the first inland row of built structures as one moves into the City. With the Project in place, a mass of turbines is visible above the horizon line within the two views. The number and mass of the turbines 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 turbine. The WTGs are less clustered and more widely spaced at the edges of the view. The slightly hazy conditions soften the edges of the turbines somewhat, but the proposed turbines will dominate the viewer's attention from this view.

Applying the Criteria of Adverse Effect per NHPA Section 106, 36 CFR § 800.5 (as summarized above), the Project is anticipated to result in potential adverse visual effects to 13 Recreational Properties within the PAPE. This rating was given special consideration due to many of the aboveground historic properties' location on the seafront with an unobstructed view toward the Project, the historic relationship of each with views of the ocean, and the high level of sensitivity to visual effects. This high sensitivity to visual effects was typically attributed to the nature of these aboveground historic properties as publicly accessible, and specifically designed for enjoyment of the ocean horizon. The Project is not anticipated to result in any potential adverse visual effects to 15 aboveground historic properties of this type within the PAPE.

4.1.4 Transportation Sites and Corridors

There are 17 Transportation Sites and Corridors within the Atlantic Shores Offshore Wind Project PAPE. The aboveground historic property of this type closest to the Project is the Camden and Atlantic Railroad Historic District (NJID 3862), located approximately 12.2 miles (19.6 km) from the nearest turbine at its nearest point. The simulation that represents the view from, and visual setting of, this aboveground historic property type, taken from the Townsend Inlet Bridge (NJID 4893) in Sea Isle City, New Jersey, approximately 27.3 miles (43.9 km) from the nearest turbine (see Attachment B, Viewpoint SIC02).

The existing view to the northeast from the elevated surface of the bridge is a broad vista that includes a wide expanse of sandy beach and open water. Grassy dunes and shoreline residential development can be seen to the left of the view, and a point of land with structures on it is visible on the opposite side of the water to the right side of the view. The beach includes two people and some shore birds, but otherwise appears deserted. The exposed sand wraps around a point of land and disappears out of sight to the left. This early morning view is looking into the sun. Wet sand and small waves at the shoreline give way to dark open water that extends to the horizon, where it meets the bright morning sky. The sky transitions from a light orange at the horizon to white and light blue overhead. Except for the nearby residential structures (outside the selected field of view), the beach appears natural and undisturbed.

With the Project in place, the turbines can be seen spread across the horizon, appearing as rows of overlapping WTGs aligned to the viewer's perspective at the center-right of the view. To the north, the rows of WTGs appear increasingly spread out with each successive row. The southern edge of the Project is seen at the right of the view where the WTGs end. Under the conditions illustrated in this photo, the turbines are visible and in contrast with the surrounding natural landscape. The Project is backlit by the dawn sky, and the turbines appear dark gray against a pinkish sky. Hazy clouds near the horizon

somewhat diminish the contrast between the turbines and the sky, but the turbines may be more visible under clearer conditions or earlier in the evening when the sun is higher in the sky. In addition, the rotating of the blades of the WTGs could compound the disruption to the visual setting, especially where the WTGs are clustered or aligned with the viewer's perspective.

Applying the Criteria of Adverse Effect per NHPA Section 106, 36 CFR § 800.5 (as summarized above), the Project is anticipated to result in potential adverse visual effects to three Transportation Sites and Corridors located within the PAPE. This aboveground historic property is an automobile-only bridge that connects Sea Isle City and Avalon. Views from this type of resource are likely to be intermittent and could be mitigated by the intransitive nature of movement within and across transportation corridors. Aboveground historic properties of this type are typically spread over long, linear stretches of land, with only small sections of potential visibility of the Project. In addition, the characteristics that contribute to the significance of this aboveground historic property type often consist of or include the presence of modern infrastructure. Therefore, the potential adverse effect by the introduction of man-made vertical elements, such as wind turbines along the horizon, may be somewhat mitigated by the nature of these aboveground historic properties which caused them to be determined eligible for listing in the NRHP. The Project is not anticipated to result in any potential adverse visual effects to 14 aboveground historic properties of this type Membrine adverse visual effects to 14 aboveground historic properties of this type Membrine adverse visual effects to 14 aboveground historic properties of this type Membrine adverse visual effects to 14 aboveground historic properties of this type Membrine adverse visual effects to 14 aboveground historic properties of this type.

4.1.5 Lighthouses and Navigational Aids

There are nine Transportation Sites and Corridors within the Atlantic Shores Offshore Wind Project PAPE. The closest aboveground historic property of this type to the Project is the Absecon Lighthouse (71000492), which is located approximately 10.6 miles (17.1 km) from the nearest turbine. The simulation that represents the view from, and visual setting of, this aboveground historic property type, taken from the eleventh floor of the Ocean Casino Resort – Sky Garden in Atlantic City, approximately 760 feet (231.6 m) from the Absecon Lighthouse (Attachment B, Viewpoint AC04).

The selected view to the east-southeast from this location provides an elevated perspective of the adjacent shoreline and ocean. The boardwalk and parking lots in the immediate foreground below give way to crescents of sandy beach separated by stone jetties. White surf and foam at the shoreline transition to a broad expanse of silver-grey ocean that darkens added as it extends to the distant horizon. Several buoys are the only interruptions on the ocean's surface. The horizon is defined by an abrupt change in color where the dark ocean water meets the light orange sky at sunrise. Slightly above the horizon the sky transitions to heavy grey cloud cover. The relative lack of people on the beach, dull early morning light, and overhead cloud cover give the view a peaceful but somewhat ominous character.

With the Project in place, the turbines are visible across the horizon of the view and occupies a wide swath of the background seascape. The WTGs appear unevenly spaced, with groupings of them forming shapes which may appear larger and have more of a visual impact in the aggregate than a single turbine. The WTGs to the north and south edges of the Project are more widely spaced and stand out as single turbines. Even during the somewhat darker atmospheric light conditions of dawn, the turbines would be

clearly visible to even a casual observer, especially when viewed from an elevated vantage point such as the eleventh floor of a building or the observation deck of a lighthouse.

Applying the Criteria of Adverse Effect per NHPA Section 106, 36 CFR § 800.5 (as summarized above), the Project is anticipated to result in potential visual adverse effects to three Lighthouse and Navigational Aids within the PAPE. Existing features, including the light towers, the vast expanse of ocean, and the abundant human activity, remain the dominant, character-defining elements of the landscape. Historic preservation briefs and other sources of documentation (e.g., cultural resources surveys and multiple property documentation forms) issued by the National Park Service offer definitions of lighthouses and the character-defining features that give them significance, including the visual character of the lighthouse itself as a dominant vertical element of the landscape and accompanying seascape. Lighthouses typically feature open views of the ocean and can be elements of a picturesque coastal/ocean landscape. The introduction of modern, man-made vertical elements such as turbines could become new focal points in the visual setting for these sites and have an adverse effect on the elements of setting that directly contribute to the significance of this aboveground historic property type.

The Project is not anticipated to result in any potential visual adverse effects to six aboveground historic properties of this type within the PAPE (see Attachment A). Manual review of these Lighthouses and Navigational Aids determined that location and distance from the Project would reduce, if not eliminate, the potential visual effect from the Project.

4.1.6 Maritime Safety and Defense Facilities

There are five Maritime Safety and Defense Facilities within the Atlantic Shores Offshore Wind Project PAPE. The closest aboveground historic property of this type to the Project is USCG Station Atlantic City (NJID 4745) located approximately 11.5 miles (18.5 km) from the nearest turbine. The simulation that represents the view from, and visual setting of, this aboveground historic property type, taken from the Rutgers University Marine Field Station (RUMFS) at the Great Bay Boulevard Wildlife Management Area (WMA) in Tuckerton, New Jersey and is adjacent to the Little Egg Harbor US Life Saving Station #23 (NJID 5326) on Mystic Island in Little Egg Harbor, New Jersey, approximately 11.9 miles (19.2 km) from the nearest turbine (see Attachment B, LEHT02).

The view to the southeast from this location looks off across a large bay that is fringed by stands of marsh grass at the shoreline. Low vegetated dunes and narrow bands of sand on the opposite side of the bay define the horizon line. The high-rise buildings of Atlantic City are also visible across the bay in the distance, but outside the selected field of view. The water of the bay is relatively calm and dark blue gray in color. The sky is light gray and uninterrupted by overhead obstructions. Other than the distant buildings of Atlantic City, the only visible man-made features are some small buoys in the bay. The broad expanse of open water and sky lack developed or man-made features.

Viewshed analysis suggests that Project visibility could be widely available from the bay and adjacent open marsh. However, nearby areas with even modest woody vegetation will generally be well screened. With the Project in place, the WTGs are spread across the horizon between each side of the bay, and even

extending above the dunes that form the north side of the bay. The WTGs are spread unevenly along the horizon, clustering together in some areas and creating visual elements that are larger than a single WTG. The modern components of the Project create a drastic relief against the lack of man-made development in this view.

Applying the Criteria of Adverse Effect per NHPA Section 106, 36 CFR § 800.5 (as summarized above), the Project is anticipated to result in potential adverse effects to two Maritime Safety and Defense Facilities located within the PAPE. Buildings and structures of this aboveground historic property type typically derive significance from present or former use as a governmental facility or from architectural character. These aboveground historic properties were historically dependent on direct visual and physical access to the ocean in order to successfully provide coastal defense and transportation safety. The characteristics that contribute to the significance of this aboveground historic property type often include the presence of modern military machinery and infrastructure. Therefore, the potential adverse effect by the introduction of man-made vertical elements, such as wind turbines along the horizon, may be somewhat mitigated by the nature of these aboveground historic properties which caused them to be determined eligible for listing in the NRHP. The Project is not anticipated to result in any potential adverse visual effects to three aboveground historic properties of this type within the PAPE.

5.0 SUMMARY AND CONCLUSIONS

5.1 Summary of Project's Potential Effect on Aboveground Historic Properties

Construction of the Project will not require the demolition or physical alteration of any historic buildings or other potential aboveground historic properties. The Project's effect on a given aboveground historic property would be a change (resulting from the introduction of WTGs and OSSs) in the aboveground historic property's visual setting.

The Project will result in the greatest potential effects on the visual setting of aboveground historic properties located along the shoreline. The Project's overall impact on the visual settings associated with aboveground historic properties will persist for the period of operation.

The potential visibility of the Project from the individual identified aboveground historic properties within the PAPE is summarized in Attachment A and depicted in Figure 3.1-2. The majority of aboveground historic properties that fall within the Project viewshed will have somewhat obstructed views of the Project due to screening provided by intervening topography, vegetation, and/or buildings and structures. The proposed turbines are located between 9.9 miles (16 km) to 45 miles (72.4 km) away from the aboveground historic properties located within the PAPE (and listed in Attachment A). Visual simulations prepared for the Project show that in some cases views of the ocean will be disrupted by the sheer size and scale of the WTGs. The introduction of vertical elements along the horizon line has the potential to create a pattern of visual disturbance within the natural seascape. Distance may be a mitigating factor in some cases. However, even at distances of 20 miles (32.2 km) away, wind turbines spread across the horizon will likely become focal points of viewers from the shore, and the effect of "stacking" can cause multiple individual wind turbines to appear as a larger, more substantial form.

Applying the Criteria of Adverse Effect per NHPA Section 106, 36 CFR § 800.5 (as summarized in Section 4.1), of the 321 aboveground historic properties located within the PAPE assessed for potential visual effects, the Atlantic Shores Offshore Wind Project will have a potential adverse effect on a total of 61 aboveground historic properties (approximately 19 percent). These aboveground historic properties are listed in the table included as Attachment A.

Applying the Criteria of Adverse Effect per NHPA Section 106, 36 CFR § 800.5, the Atlantic Shores Offshore Wind Project is not anticipated to have a potential adverse effect on the remaining 260 aboveground historic properties within the PAPE. These aboveground historic properties are listed in the table included as Attachment A.

5.2 Conclusions

The Project would introduce new man-made features to the seascape horizon, which has remained relatively unchanged for the 30-year project lifecycle. The introduction of the WTGs would likely constitute a change in the physical environment of some aboveground historic properties within the PAPE This is
particularly true for those aboveground historic properties for which open views of the ocean are integral, such as lighthouses and recreation areas. In some cases, the potential visual effects on aboveground historic properties may be mitigated by the presence of modern infrastructure which diminishes the existing integrity of setting, the presence of commercial shipping vessels on the ocean, and the effect of distance on visibility.

Atlantic Shores will implement the following measures to mitigate potential visual impacts on aboveground historic properties. These measures are based on protocols and procedures successfully implemented for similar offshore projects:

- Atlantic Shores will engage with relevant stakeholders to determine additional avoidance, minimization, or mitigation measures regarding potential effects on aboveground historic properties as required by 30 CFR 585.626(b)(15);
- WTGs will have uniform design, height, and rotor diameter;
- The WTGs will be painted no lighter than Pure White (RAL 9010) and no darker than Light Grey (RAL 7035) as required by BOEM and the FAA. Turbines of this color white generally blend well with the sky at the horizon and eliminate the need for daytime warning lights or red paint marking of the blade tips;
- The WTGs and OSSs will be lit and marked in accordance with BOEM and USCG requirements for aviation and navigation obstruction lighting, respectively; and
- Atlantic Shores will use Aircraft Detection Lighting System (ADLS) or related means (e.g., dimming or shielding) to limit visual impact, pursuant to approval by the FAA and BOEM, commercial and technical feasibility at the time of FDR/FIR approval, and dialogue with stakeholders. If successfully implemented, ADLS would limit the activation of the AOLs to approximately 11 hours per year (Capitol Airspace, 2021), thus substantially limiting the nighttime visibility and visual impact of the Project.

The visibility results presented in the viewshed analysis assume the maximum potential visibility, independent of visual acuity and less-than-ideal viewing conditions. Similarly, the majority of the simulations illustrate the maximum potential visibility resulting from near-perfect viewing conditions. Actual Project visibility will be limited by factors such as weather conditions, waves on the ocean surface, humidity, and air pollution (for further discussion see Brodie and Frei, 2020).

Based on field review, viewshed analysis, and visual simulations prepared as part of the HRVEA for the Project, the Project is anticipated to have a variable long-term visual effect based on distance, number of turbines visible, and type of aboveground historic property. The 321 aboveground historic properties within the PAPE were rated with respect to the potential for visual effects (see Attachment A) and were assessed according to the visibility of the Project and its potential effect on their individual characteristics,

as described in Section 4.1. Applying the Criteria of Adverse Effect per NHPA Section 106, 36 CFR § 800.5, a total of 61 aboveground historic properties may be adversely affected by the Project.

Atlantic Shores anticipates continued consultation with the appropriate federal agencies, SHPOs, THPOs, and relevant stakeholders in connection with the Project to identify and evaluate visual effects to aboveground historic properties and to determine avoidance, minimization, or mitigation measures regarding potential effects on aboveground historic properties as required by 30 CFR §585.626(b)(15).

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ATTACHMENT A. HISTORIC RESOURCES VISUAL EFFECTS ASSESSMENT



			Ref	erence Informatio	on					,	View	shed Analysis	Results*	,			Sensitivit	y and Impac	t Assessment	t
Figure 3.1-1 Sheet Reference Number	Figure 3.1-1 Map Resource Number	Formal Resource Identificatio n Number	Name and/or Description (if applicable)	Municipality	County	Property Designation	Distance to Nearest Turbine (Miles)	Nearby Key Observation Point (KOP)	Blade Tip Elevation (Visible Units AMSL)	Turbine Aviation Light Elevation (Visible Units AMSL)	Mid-Tower Aviation Light Elevation (Visible Units AMSL)	Coast Guard Light Elevation (Visible Units AMSL)	Property Acreage within Study Area	Property Acreage within PAPE	Percentage of Property with Potential Visibility	Significant Martitime Setting	Significant View to Sea	Sensitivity to Visual Effects (Low, Medium, High)	Potential Adverse Effect	Discussion
Historic Home	rs and Structur	N/A	Leeds House	Brigantine City	Atlantic	Potentially NRHP- Eligible Property	9.8		20	2	0	0	0.1	0.0	20.4	Yes	No	Medium	No	Inland location, primary view oriented away from the project
11	73	N/A	222 3rd Street South	Brigantine City	Atlantic	Potentially NRHP- Eligible Property	9.8		17	2	0	0	0.1	0.0	19.7	Yes	No	Medium	No	Inland location, primary view oriented away from the project
11	75	N/A	St. Thomas Catholic Church	Brigantine City	Atlantic	Potentially NRHP- Eligible Property	9.8		36	18	1	0	0.4	0.0	0.6	Yes	No	Medium	No	Inland location, primary view oriented away from the project
11	71	N/A	401 West Beach Avenue	Brigantine City	Atlantic	Potentially NRHP- Eligible Property	9.8		8	3	0	0	0.1	0.0	43.1	Yes	No	Medium	No	Inland location, primary view oriented away from the project
11	70	N/A	140 4th Street South	Brigantine City	Atlantic	Potentially NRHP- Eligible Property	9.9		8	3	0	0	0.1	0.0	25.2	Yes	No	Medium	No	Inland location, primary view oriented away from the project
11	76	N/A	1519 Bayshore Avenue	Brigantine City	Atlantic	Potentially NRHP- Eligible Property	10.2		3	2	0	0	0.4	0.0	6.8	Yes	No	Medium	No	Inland location, primary view oriented away from the project
11	81	N/A	200 18th Street South	Brigantine City	Atlantic	Potentially NRHP- Eligible Property	10.2		3	1	0	0	0.1	0.0	13.8	Yes	No	Low	No	Inland location, primary view oriented away from the project
11	78	N/A	1619 Bayshore Avenue	Brigantine City	Atlantic	Potentially NRHP- Eligible Property	10.2		3	0	0	0	0.2	0.1	28.2	Yes	No	Medium	No	Inland location, primary view oriented away from the project
11	80	N/A	1800 Revere Boulevard	Brigantine City	Atlantic	Potentially NRHP- Eligible Property	10.3		2	1	0	0	0.2	0.0	9.3	Yes	No	Medium	No	Inland location, primary view oriented away from the project
11	77	N/A	31 17th Street South	Brigantine City	Atlantic	Potentially NRHP- Eligible Property	10.3		2	0	0	0	0.1	0.0	24.7	Yes	No	Medium	No	Inland location, primary view oriented away from the project



			Refe	erence Informatio	on						View	shed Analysis	Results*				Sensitivit	y and Impact	t Assessment	t
Figure 3.1-1 Sheet Reference Number	Figure 3.1-1 Map Resource Number	Formal Resource Identificatio n Number	Name and/or Description (if applicable)	Municipality	County	Property Designation	Distance to Nearest Turbine (Miles)	Nearby Key Observation Point (KOP)	Blade Tip Elevation (Visible Units AMSL)	Turbine Aviation Light Elevation (Visible Units AMSL)	Mid-Tower Aviation Light Elevation (Visible Units AMSL)	Coast Guard Light Elevation (Visible Units AMSL)	Property Acreage within Study Area	Property Acreage within PAPE	Percentage of Property with Potential Visibility	Significant Martitime Setting	Significant View to Sea	Sensitivity to Visual Effects (Low, Medium, High)	Potential Adverse Effect	Discussion
Historic Home	94	N/A	2807 Ocean Avenue	Brigantine City	Atlantic	Potentially NRHP- Eligible Property	10.3		2	2	1	0	0.1	0.0	1.4	Yes	No	Medium	No	Inland location, primary view oriented away from the project
11	87	N/A	313 27th Street South	Brigantine City	Atlantic	Potentially NRHP- Eligible Property	10.4		13	4	0	0	0.2	0.1	57.9	Yes	No	Medium	No	Inland location, primary view oriented away from the project
11	89	N/A	308 27th Street	Brigantine City	Atlantic	Potentially NRHP- Eligible Property	10.4		25	6	0	0	0.1	0.0	12.4	Yes	No	Medium	No	Inland location, primary view oriented away from the project
11	86	N/A	305 27th Street	Brigantine City	Atlantic	Potentially NRHP- Eligible Property	10.4		11	2	0	0	0.2	0.1	55.9	Yes	No	Medium	No	Inland location, primary view oriented away from the project
11	97	N/A	333 32nd Street South	Brigantine City	Atlantic	Potentially NRHP- Eligible Property	10.4		29	16	3	0	0.2	0.1	53.8	Yes	No	Medium	No	Inland location, primary view oriented away from the project
11	85	N/A	2707 Brigantine Avenue	Brigantine City	Atlantic	Potentially NRHP- Eligible Property	10.5		8	4	1	0	0.4	0.1	17.0	Yes	No	Medium	No	Inland location, primary view oriented away from the project
14	202	N/A	242 South Vermont Avenue	Atlantic City	Atlantic	Potentially NRHP- Eligible Property	10.5		4	0	0	0	0.0	0.0	7.9	Yes	No	Medium	No	Inland location, primary view oriented away from the project
14	196	N/A	240 South Vermont Avenue	Atlantic City	Atlantic	Potentially NRHP- Eligible Property	10.5		4	0	0	0	0.0	0.0	10.0	Yes	No	Medium	No	Inland location, primary view oriented away from the project
14	194	N/A	212 South New Hampshire Avenue	Atlantic City	Atlantic	Potentially NRHP- Eligible Property	10.5		60	30	8	2	0.1	0.0	13.7	Yes	No	Medium	No	Inland location, primary view oriented away from the project
11	79	N/A	2201 Bayshore Avenue	Brigantine City	Atlantic	Potentially NRHP- Eligible Property	10.5		1	0	0	0	0.4	0.0	2.0	Yes	No	Medium	No	Inland location, primary view oriented away from the project



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Historic Home	es and Structur	res		1	1		1	1	1	1	1	1	1	1	1	1	r		r	1
14	197	N/A	205 South Vermont Avenue	Atlantic City	Atlantic	Potentially NRHP- Eligible Property	10.5		85	71	28	2	0.1	0.0	8.1	Yes	No	Medium	No	Inland location, primary view oriented away from the project
14	192	N/A	223 Oriental Avenue	Atlantic City	Atlantic	Potentially NRHP- Eligible Property	10.6		2	0	0	0	0.0	0.0	4.2	Yes	No	Medium	No	Inland location, primary view oriented away from the project
14	200	N/A	222 South Rhode Island Avenue	Atlantic City	Atlantic	Potentially NRHP- Eligible Property	10.6		86	52	18	1	0.1	0.0	19.8	Yes	Yes	Medium	Yes	Unobstructed view toward project
14	195	N/A	200 South Vermont Avenue	Atlantic City	Atlantic	Potentially NRHP- Eligible Property	10.6		11	1	0	0	0.1	0.0	22.5	Yes	No	Medium	No	Inland location, primary view oriented away from the project
14	201	N/A	227 South Metropolitan Avenue	Atlantic City	Atlantic	Potentially NRHP- Eligible Property	10.6		74	30	7	0	0.0	0.0	19.8	Yes	No	Medium	No	Inland location, primary view oriented away from the project
14	199	N/A	217 South Metropolitan Avenue	Atlantic City	Atlantic	Potentially NRHP- Eligible Property	10.6		77	32	1	0	0.0	0.0	6.4	Yes	No	Medium	No	Inland location, primary view oriented away from the project
14	193	N/A	311 Oriental Avenue	Atlantic City	Atlantic	Potentially NRHP- Eligible Property	10.6		48	9	0	0	0.1	0.0	17.2	Yes	No	Medium	Yes	Unobstructed view toward project
14	198	N/A	204 South Rhode Island Avenue	Atlantic City	Atlantic	Potentially NRHP- Eligible Property	10.6		95	30	0	0	0.0	0.0	42.4	Yes	Yes	Medium	Yes	Unobstructed view toward project
11	92	N/A	Citta del Mar Restaurant	Brigantine City	Atlantic	Potentially NRHP- Eligible Property	10.6		11	4	1	0	0.2	0.1	55.4	Yes	No	Medium	No	Inland location, primary view oriented away from the project
14	189	N/A	124 Atlantic Avenue	Atlantic City	Atlantic	Potentially NRHP- Eligible Property	10.7		135	130	126	28	0.1	0.0	17.3	Yes	No	Medium	Yes	Unobstructed view toward project
14	190	N/A	Brilliante Apartment Building	Atlantic City	Atlantic	Potentially NRHP- Eligible Property	10.7		4	0	0	0	0.1	0.0	0.1	Yes	No	Medium	No	Inland location, primary view oriented away from the project



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Historic Home	es and Structur	res	[]	[1	1		1	r	r	1	r	[r	1		1		1	[
14	211	N/A	164 St. James Place	Atlantic City	Atlantic	Potentially NRHP- Eligible Property	11.0		16	0	0	0	0.1	0.1	42.1	Yes	No	Medium	No	Inland location, primary view oriented away from the project
14	207	N/A	151 South Ocean Avenue	Atlantic City	Atlantic	Potentially NRHP- Eligible Property	11.0		11	5	1	0	0.0	0.0	0.0	Yes	No	Medium	No	Inland location, primary view oriented away from the project
14	210	N/A	143 -149 South St. James Place	Atlantic City	Atlantic	Potentially NRHP- Eligible Property	11.0		2	0	0	0	0.1	0.0	2.7	Yes	No	Medium	No	Inland location, primary view oriented away from the project
14	208	N/A	142 South Tennessee Avenue	Atlantic City	Atlantic	Potentially NRHP- Eligible Property	11.0		1	0	0	0	0.1	0.0	5.2	Yes	No	Medium	No	Inland location, primary view oriented away from the project
14	213	N/A	Brighton Park	Atlantic City	Atlantic	Potentially NRHP- Eligible Property	11.2		196	194	193	44	2.0	0.6	28.7	Yes	Yes	High	Yes	Unobstructed view toward project
14	187	5374	Atlantic City Beautiful Historic District	Atlantic City	Atlantic	NRHP-Eligible Property (NJHPO Determined)	11.2		2	1	0	0	13.2	0.1	0.9	Yes	No	Medium	No	Limited areas of visibility throughout mos of district area except for small intermittant patches along streets
14	204	N/A	Atlantic City Telephone	Atlantic City	Atlantic	Potentially NRHP- Eligible Property	11.3		1	0	0	0	0.6	0.0	0.1	Yes	No	Medium	No	Inland location, primary view oriented away from the project
14	206	N/A	Carnegie Library (Atlantic City Public Library)	Atlantic City	Atlantic	Potentially NRHP- Eligible Property	11.3		2	0	0	0	0.7	0.0	2.5	Yes	No	Medium	No	Inland location, primary view oriented away from the project
14	209	4870	Administration Building for the Board of Education	Atlantic City	Atlantic	NRHP-Eligible Property (NJHPO Determined)	11.4		1	0	0	0	0.2	0.0	4.3	Yes	No	Medium	No	Inland location, primary view oriented away from the project



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Historic Home	s and Structur	res	-	-	1		1		1	1	r	-	[1		· · · · · · · · · · · · · · · · · · ·	1	1		
14	182	5375	419 Carson Avenue	Atlantic City	Atlantic	Potentially NRHP- Eligible Property	11.4		2	0	0	0	0.2	0.0	0.9	Yes	No	Medium	No	Inland location, primary view oriented away from the project
14	163	N/A	Brigantine Boulevard and Atlantic Avenue	Brigantine City	Atlantic	Potentially NRHP- Eligible Property	11.5		1	0	0	0	0.1	0.0	1.7	Yes	No	Medium	No	Limited areas of visibility throughout most of district area but several areas of likely project visibility along coast
14	231	N/A	147 South Texas Avenue	Atlantic City	Atlantic	Potentially NRHP- Eligible Property	11.6		40	32	20	0	0.1	0.0	13.3	Yes	No	Medium	No	Inland location, primary view oriented away from the project
14	230	N/A	145 South Texas Avenue	Atlantic City	Atlantic	Potentially NRHP- Eligible Property	11.6		10	0	0	0	0.0	0.0	74.6	Yes	No	Medium	No	Inland location, primary view oriented away from the project
14	229	N/A	143 South Texas Avenue	Atlantic City	Atlantic	Potentially NRHP- Eligible Property	11.6		8	0	0	0	0.0	0.0	98.8	Yes	No	Medium	No	Inland location, primary view oriented away from the project
14	228	N/A	141 South Texas Avenue	Atlantic City	Atlantic	Potentially NRHP- Eligible Property	11.6		8	0	0	0	0.0	0.0	87.0	Yes	No	Medium	No	Inland location, primary view oriented away from the project
14	227	N/A	139 South Texas Avenue	Atlantic City	Atlantic	Potentially NRHP- Eligible Property	11.6		5	0	0	0	0.0	0.0	64.2	Yes	No	Medium	No	Inland location, primary view oriented away from the project
14	226	N/A	137 South Texas Avenue	Atlantic City	Atlantic	Potentially NRHP- Eligible Property	11.6		5	0	0	0	0.0	0.0	46.7	Yes	No	Medium	No	Inland location, primary view oriented away from the project
14	225	N/A	135 South Texas Avenue	Atlantic City	Atlantic	Potentially NRHP- Eligible Property	11.6		2	0	0	0	0.0	0.0	18.5	Yes	No	Medium	No	Inland location, primary view oriented away from the project



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Historic Home	s and Structur	es N/A	133 South Texas Avenue	Atlantic City	Atlantic	Potentially NRHP- Eligible Property	11.6		1	0	0	0	0.0	0.0	3.7	Yes	No	Medium	No	Inland location, primary view oriented away from the project
14	219	N/A	116 South Texas Avenue	Atlantic City	Atlantic	Potentially NRHP- Eligible Property	11.6		85	79	46	6	0.1	0.0	33.6	Yes	No	Medium	No	Inland location, primary view oriented away from the project
14	218	N/A	114 South Texas Avenue	Atlantic City	Atlantic	Potentially NRHP- Eligible Property	11.6		69	63	28	1	0.1	0.0	19.9	Yes	No	Medium	No	Inland location, primary view oriented away from the project
14	217	N/A	112 South Texas Avenue	Atlantic City	Atlantic	Potentially NRHP- Eligible Property	11.6		3	3	0	0	0.1	0.0	3.9	Yes	No	Medium	No	Inland location, primary view oriented away from the project
14	216	N/A	110 South Texas Avenue	Atlantic City	Atlantic	Potentially NRHP- Eligible Property	11.6		3	3	0	0	0.1	0.0	0.0	Yes	No	Medium	No	Inland location, primary view oriented away from the project
14	222	N/A	111 Albion Place	Atlantic City	Atlantic	Potentially NRHP- Eligible Property	11.6		2	0	0	0	0.1	0.0	0.6	Yes	No	Medium	No	Inland location, primary view oriented away from the project
14	232	N/A	111 South California Avnenue	Atlantic City	Atlantic	Potentially NRHP- Eligible Property	11.6		3	0	0	0	0.1	0.0	1.2	Yes	No	Medium	No	Inland location, primary view oriented away from the project
14	221	N/A	108 Albion Place	Atlantic City	Atlantic	Potentially NRHP- Eligible Property	11.7		13	2	0	0	0.1	0.0	33.1	Yes	No	Medium	No	Inland location, primary view oriented away from the project
14	220	N/A	109 South California Avenue	Atlantic City	Atlantic	Potentially NRHP- Eligible Property	11.7		10	1	0	0	0.1	0.0	54.7	Yes	No	Medium	No	Inland location, primary view oriented away from the project
14	188	4163	Atlantic City Armory	Atlantic City	Atlantic	NRHP-Eligible Property (NJHPO Determined)	11.9		1	0	0	0	4.0	0.3	7.1	Yes	No	Low	No	Inland location, primary view oriented away from the project



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Historic Home	s and Structur	res	1			1					1	r						· · · · · ·		
14	235	4798	The Knife and Fork Restaurant	Atlantic City	Atlantic	NRHP-Eligible Property (NJHPO Determined)	12.1		10	8	5	0	0.1	0.0	27.0	Yes	No	Medium	No	Inland location, primary view oriented away from the project
14	236	N/A	38 South Trenton Avenue	Atlantic City	Atlantic	Potentially NRHP- Eligible Property	12.2		8	2	0	0	0.1	0.0	7.0	Yes	No	Medium	No	Inland location, primary view oriented away from the project
14	237	N/A	Riviera Apartments	Atlantic City	Atlantic	Potentially NRHP- Eligible Property	12.3		117	59	37	3	0.2	0.1	49.2	Yes	Yes	High	Yes	Unobstructed view toward project
14	185	N/A	1808 East Riverside Drive	Atlantic City	Atlantic	Potentially NRHP- Eligible Property	12.4		3	0	0	0	0.1	0.0	13.6	Yes	No	Low	No	Inland location, primary view oriented away from the project
14	238	N/A	4700 Atlantic Avenue	Sea Isle City	Cape May	Potentially NRHP- Eligible Property	12.5		5	0	0	0	0.1	0.0	3.1	Yes	No	Medium	No	Inland location, primary view oriented away from the project
14	239	88000723	John Stafford Historic District	Ventnor City	Atlantic	NRHP-Listed Property	12.5		200	199	167	11	4.2	0.8	19.5	Yes	Yes	High	Yes	Unobstructed view toward project along the coast
14	183	N/A	Venice Park School	Atlantic City	Atlantic	Potentially NRHP- Eligible Property	12.6		3	0	0	0	3.3	0.1	2.2	Yes	No	Low	No	Inland location, primary view oriented away from the project
14	240	426	Saint Leonard's Tract Historic District	Ventnor City	Atlantic	NRHP-Eligible Property (NJHPO Determined)	12.7		200	200	197	15	72.6	7.0	9.6	Yes	Yes	High	Yes	Unobstructed view toward project
8	45	N/A	Crab Island	Little Egg Harbor Township	Atlantic	Potentially NRHP- Eligible Property	12.9		200	196	160	6	14.6	14.6	100.0	Yes	Yes	High	Yes	Unobstructed view toward project
14	241	71000493	Lucy, The Margate Elephant	Margate City	Atlantic	National Historic Landmark (NHL)	14.4	MC02	139	136	116	4	0.6	0.1	14.4	Yes	Yes	High	Yes	Unobstructed view toward project
14	242	N/A	Gospel Hall Home	Longport Borough	Atlantic	Potentially NRHP- Eligible Property	14.9		200	200	175	2	1.6	0.1	7.5	Yes	Yes	High	Yes	Unobstructed view toward project



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Historic Home	es and Structur	res																		
14	244	N/A	111 21st Avenue	Longport Borough	Atlantic	Potentially NRHP- Eligible Property	15.2		87	80	51	0	0.1	0.1	40.9	Yes	No	Medium	No	Inland location, primary view oriented away from the project
14	243	N/A	109 21st Avenue	Longport Borough	Atlantic	Potentially NRHP- Eligible Property	15.2		88	77	51	0	0.2	0.1	41.8	Yes	No	Medium	No	Inland location, primary view oriented away from the project
11	61	420	Oceanville / Leeds Point / Moss Mill Historic District	Galloway	Atlantic	NRHP-Eligible Property (NJHPO Determined)	15.3		42	41	39	3	416.7	4.4	1.1	Yes	No	Medium	No	Inland location, primary view oriented away from the project
14	178	N/A	1512 Bay Drive	Pleasantville City	Atlantic	Potentially NRHP- Eligible Property	15.8		5	0	0	0	0.2	0.1	45.5	Yes	No	Medium	No	Inland location, primary view oriented away from the project
14	173	N/A	Peter Lumber Co.	Pleasantville City	Atlantic	Potentially NRHP- Eligible Property	16.0		52	6	0	0	15.7	4.2	27.0	Yes	No	Medium	No	Inland location, primary view oriented away from the project
14	177	N/A	211 West Plaza Place	Pleasantville City	Atlantic	Potentially NRHP- Eligible Property	16.0		16	1	0	0	0.1	0.0	22.1	Yes	No	Medium	No	Inland location, primary view oriented away from the project
11	63	418	Conovertown Historic District	Galloway	Atlantic	NRHP-Eligible Property (NJHPO Determined)	16.2		1	0	0	0	33.0	0.0	0.0	Yes	No	Low	No	Inland location, limited areas of visibility
11	68	N/A	222 Seventh Avenue	Pleasantville City	Atlantic	Potentially NRHP- Eligible Property	16.3		33	17	2	0	0.2	0.0	14.3	No	No	Low	No	Inland location, primary view oriented away from the project
14	175	310	Studebaker Showroom	Egg Harbor Township	Atlantic	NRHP-Eligible Property (NJHPO Determined)	16.3		1	0	0	0	0.6	0.0	0.8	No	No	Low	No	Inland location, primary view oriented away from the project
11	64	3570	North Shore Road Historic District	Absecon City	Atlantic	NRHP-Eligible Property (NJHPO Determined)	16.3		70	45	12	0	69.6	3.2	4.6	No	No	Low	No	Inland location, limited views of the project from within the distric



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Historic Home	s and Structur	es		1	1	1	1	1		I	I	1	I	1	1		I	I		I
11	72	N/A	Shore Road North Historic District	Pleasantville City	Atlantic	Potentially NRHP- Eligible Property	16.3		27	7	2	0	88.6	5.3	6.0	Yes	No	Medium	No	Inland location, limited views of the project from within the district
11	67	2935	South Shore Road Historic District	Absecon City	Atlantic	NRHP-Eligible Property (NJHPO Determined)	16.4		4	0	0	0	45.7	0.2	0.4	Yes	No	Medium	No	Inland location, limited views of the project from within the distric
14	174	N/A	213 Verona Avenue	Pleasantville City	Atlantic	Potentially NRHP- Eligible Property	16.4		2	0	0	0	0.2	0.0	4.1	No	No	Low	No	Inland location, primary view oriented away from the project
11	84	N/A	33 Walnut Avenue	Pleasantville City	Atlantic	Potentially NRHP- Eligible Property	16.4		27	9	1	0	0.7	0.1	7.9	No	No	Low	No	Inland location, primary view oriented away from the project
14	165	N/A	103 East Jersey Avenue	Pleasantville City	Atlantic	Potentially NRHP- Eligible Property	16.5		16	2	0	0	0.1	0.1	85.1	Yes	No	Medium	No	Inland location, primary view oriented away from the project
11	88	N/A	321 Franklin Street	Pleasantville City	Atlantic	Potentially NRHP- Eligible Property	16.5		47	19	2	0	0.3	0.1	37.2	No	No	Low	No	Inland location, primary view oriented away from the project
13, 14	101	N/A	Shore Road Historic District	Pleasantville City	Atlantic	Potentially NRHP- Eligible Property	16.5		134	70	6	0	189.2	69.6	36.8	No	No	Medium	No	Inland location, limited views of the project from within the district
14	168	N/A	A large octagonal tower	Pleasantville City	Atlantic	Potentially NRHP- Eligible Property	16.6		8	0	0	0	0.3	0.0	11.0	No	No	Low	No	Inland location, limited views of the project
13	142	N/A	908 North Street	Ocean City	Cape May	Potentially NRHP- Eligible Property	16.6		186	185	114	0	0.1	0.0	29.6	Yes	Yes	Medium	Yes	Unobstructed view toward project
14	172	N/A	27 East Verona	Pleasantville City	Atlantic	Potentially NRHP- Eligible Property	16.6		10	0	0	0	0.3	0.0	4.6	No	No	Low	No	Inland location, primary view oriented away from the project



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Historic Home	s and Structur	N/A	906 North Street	Ocean City	Cape May	Potentially NRHP- Eligible Property	16.6		166	136	77	0	0.1	0.0	31.9	Yes	Yes	Medium	Yes	Unobstructed view toward project
14	162	N/A	40 Washington Street	Pleasantville City	Atlantic	Potentially NRHP- Eligible Property	16.6		7	1	0	0	0.2	0.0	2.9	No	No	Low	No	Inland location, primary view oriented away from the project
13	140	N/A	904 North Street	Ocean City	Cape May	Potentially NRHP- Eligible Property	16.6		132	114	66	0	0.1	0.0	38.4	Yes	Yes	Medium	Yes	Unobstructed view toward project
13	147	N/A	924 Stenton Place	Ocean City	Cape May	Potentially NRHP- Eligible Property	16.6		78	35	3	0	0.1	0.0	42.2	Yes	Yes	Medium	Yes	Unobstructed view toward project
13	139	N/A	902 North Street	Ocean City	Cape May	Potentially NRHP- Eligible Property	16.6		132	101	39	0	0.1	0.0	37.1	Yes	Yes	Medium	Yes	Unobstructed view toward project
14	171	N/A	23 East Verona	Pleasantville City	Atlantic	Potentially NRHP- Eligible Property	16.6		9	0	0	0	0.2	0.0	3.7	No	No	Low	No	Inland location, primary view oriented away from the project
14	166	N/A	26 East Verona	Pleasantville City	Atlantic	Potentially NRHP- Eligible Property	16.6		8	0	0	0	0.1	0.0	8.4	No	No	Low	No	Inland location, primary view oriented away from the project
13	138	N/A	900 North Street	Ocean City	Cape May	Potentially NRHP- Eligible Property	16.6		114	81	25	0	0.1	0.0	54.1	Yes	Yes	Medium	Yes	Unobstructed view toward project
13	146	N/A	918-20 Stenton Place	Ocean City	Cape May	Potentially NRHP- Eligible Property	16.6		83	42	7	0	0.1	0.0	44.7	Yes	No	Medium	No	Inland location, primary view oriented away from the project
14	161	N/A	Presbyterian Church At the northwest corner of Washington and Madison Streets	Pleasantville City	Atlantic	Potentially NRHP- Eligible Property	16.6		5	0	0	0	1.0	0.0	0.7	No	No	Low	No	Inland location, primary view oriented away from the project
13	145	N/A	914 Stenton Place	Ocean City	Cape May	Potentially NRHP- Eligible Property	16.6		47	10	0	0	0.0	0.0	43.1	Yes	No	Medium	No	Inland location, primary view oriented away from the project



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Historic Home	s and Structur	es	· · · · · · · · · · · · · · · · · · ·		1	r		r	1		1	1				1	1		1	· · · · · · · · · · · · · · · · · · ·
14	170	N/A	21 Verona Avenue	Pleasantville City	Atlantic	Potentially NRHP- Eligible Property	16.6		10	1	0	0	0.2	0.0	3.2	No	No	Low	No	Inland location, primary view oriented away from the project
13	144	N/A	912 Stenton Place	Ocean City	Cape May	Potentially NRHP- Eligible Property	16.6		23	4	0	0	0.0	0.0	35.0	Yes	No	Medium	No	Inland location, primary view oriented away from the project
13	143	N/A	908 Stenton Place	Ocean City	Cape May	Potentially NRHP- Eligible Property	16.6		15	4	0	0	0.0	0.0	22.5	Yes	No	Medium	No	Inland location, primary view oriented away from the project
13	132	N/A	872 North Street	Ocean City	Cape May	Potentially NRHP- Eligible Property	16.6		13	5	0	0	0.1	0.0	32.7	Yes	No	Medium	No	Inland location, primary view oriented away from the project
13	133	N/A	875 Stenton Place	Ocean City	Cape May	Potentially NRHP- Eligible Property	16.6		61	48	10	0	0.1	0.0	32.8	Yes	No	Medium	No	Inland location, primary view oriented away from the project
11	66	98001062	Dr. Jonathan Pitney House	Absecon City	Atlantic	NRHP-Listed Property	16.6		4	0	0	0	0.3	0.1	27.9	No	No	Low	No	Inland location, primary view oriented away from the project
13	131	N/A	854 North Street	Ocean City	Cape May	Potentially NRHP- Eligible Property	16.6		1	0	0	0	0.1	0.0	0.8	Yes	No	Medium	No	Inland location, primary view oriented away from the project
13	148	N/A	910 St James Place	Ocean City	Cape May	Potentially NRHP- Eligible Property	16.6		10	0	0	0	0.1	0.0	18.2	Yes	No	Medium	No	Inland location, primary view oriented away from the project
13	137	N/A	852 Stenton Place	Ocean City	Cape May	Potentially NRHP- Eligible Property	16.6		18	13	0	0	0.1	0.0	20.5	Yes	No	Medium	No	Inland location, primary view oriented away from the project
13	152	N/A	920 First Street	Ocean City	Cape May	Potentially NRHP- Eligible Property	16.6		155	125	72	0	0.1	0.0	34.4	Yes	Yes	Medium	Yes	Unobstructed view toward project



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Historic Home	s and Structur	N/A	22 Corinthian Avenue	Ocean City	Cape May	Potentially NRHP- Eligible Property	16.6		15	13	0	0	0.1	0.0	0.2	Yes	No	Medium	No	Inland location, primary view oriented away from the project
14	169	N/A	9 East Verona	Pleasantville City	Atlantic	Potentially NRHP- Eligible Property	16.6		11	1	0	0	0.2	0.0	4.6	No	No	Low	No	Inland location, primary view oriented away from the project
13	151	N/A	908 First Street	Ocean City	Cape May	Potentially NRHP- Eligible Property	16.6		18	0	0	0	0.1	0.0	16.6	Yes	No	Medium	No	Inland location, primary view oriented away from the project
13	135	N/A	850 Stenton Place	Ocean City	Cape May	Potentially NRHP- Eligible Property	16.6		29	19	5	0	0.0	0.0	41.5	Yes	No	Medium	No	Inland location, primary view oriented away from the project
13	134	N/A	848 Stenton Place	Ocean City	Cape May	Potentially NRHP- Eligible Property	16.6		29	19	5	0	0.1	0.0	13.7	Yes	No	Medium	No	Inland location, primary view oriented away from the project
13	150	N/A	906 First Street	Ocean City	Cape May	Potentially NRHP- Eligible Property	16.7		15	0	0	0	0.1	0.0	13.9	Yes	No	Medium	No	Inland location, primary view oriented away from the project
13	154	N/A	911 St. Charles Place	Ocean City	Cape May	Potentially NRHP- Eligible Property	16.7		70	25	3	0	0.1	0.0	40.5	Yes	No	Medium	No	Inland location, primary view oriented away from the project
13	149	N/A	904 First Street	Ocean City	Cape May	Potentially NRHP- Eligible Property	16.7		1	0	0	0	0.1	0.0	1.0	Yes	No	Medium	No	Inland location, primary view oriented away from the project
14	179	N/A	Shore Road South Historic District	Pleasantville City	Atlantic	Potentially NRHP- Eligible Property	16.7		27	22	0	0	62.2	6.0	9.6	Yes	No	Medium	No	Inland location, primary view oriented away from the project
11	90	N/A	16 Adams Street	Pleasantville City	Atlantic	Potentially NRHP- Eligible Property	16.7		12	2	0	0	0.1	0.0	18.0	No	No	Low	No	Inland location, primary view oriented away from the project



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Historic Home	s and Structur	es	1	1	1		1	1	1			1			1			1	1	1
11	96	N/A	Brick Renaissance Revival Church	Pleasantville City	Atlantic	Potentially NRHP- Eligible Property	16.7		5	0	0	0	0.5	0.0	6.5	No	No	Low	No	Inland location, primary view oriented away from the project
13	155	N/A	916-18 St Charles Place	Ocean City	Cape May	Potentially NRHP- Eligible Property	16.7		49	8	0	0	0.1	0.0	16.9	Yes	No	Medium	No	Inland location, primary view oriented away from the project
11	83	N/A	517 Linden Street	Pleasantville City	Atlantic	Potentially NRHP- Eligible Property	16.7		7	0	0	0	0.2	0.0	25.9	No	No	Low	No	Inland location, primary view oriented away from the project
13	130	N/A	832 North Street	Ocean City	Cape May	Potentially NRHP- Eligible Property	16.7		32	13	1	0	0.0	0.0	34.3	Yes	No	Medium	No	Inland location, primary view oriented away from the project
13	153	N/A	901 St. Charles Place	Ocean City	Cape May	Potentially NRHP- Eligible Property	16.7		1	1	0	0	0.1	0.0	0.1	Yes	No	Medium	No	Inland location, primary view oriented away from the project
13	129	N/A	830 North Street	Ocean City	Cape May	Potentially NRHP- Eligible Property	16.7		33	10	0	0	0.0	0.0	33.7	Yes	No	Medium	No	Inland location, primary view oriented away from the project
13	128	N/A	826 North Street	Ocean City	Cape May	Potentially NRHP- Eligible Property	16.7		30	9	0	0	0.0	0.0	31.9	Yes	No	Medium	No	Inland location, primary view oriented away from the project
13	127	N/A	820 North Street	Ocean City	Cape May	Potentially NRHP- Eligible Property	16.7		1	0	0	0	0.1	0.0	2.3	Yes	No	Medium	No	Inland location, primary view oriented away from the project
13	156	N/A	931 Pennlyn Place	Ocean City	Cape May	Potentially NRHP- Eligible Property	16.7		200	200	151	0	0.2	0.1	56.2	Yes	Yes	Medium	Yes	Unobstructed view toward project
13	126	N/A	814 North Street	Ocean City	Cape May	Potentially NRHP- Eligible Property	16.7		26	11	4	0	0.0	0.0	31.1	Yes	No	Medium	No	Inland location, primary view oriented away from the project



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Historic Home	s and Structur	res																		
13	125	N/A	812 North Street	Ocean City	Cape May	Potentially NRHP- Eligible Property	16.7		27	18	4	0	0.0	0.0	37.5	Yes	No	Medium	No	Inland location, primary view oriented away from the project
14	164	N/A	The St. Peters Church	Pleasantville City	Atlantic	Potentially NRHP- Eligible Property	16.7		9	1	0	0	2.3	0.0	0.5	Yes	No	Medium	No	Inland location, primary view oriented away from the project, limited views
13, 16	157	N/A	900-24 Pennlyn Place	Ocean City	Cape May	Potentially NRHP- Eligible Property	16.7		200	200	163	0	1.0	0.3	24.1	Yes	Yes	Medium	Yes	Unobstructed view toward project
13	124	N/A	810 North Street	Ocean City	Cape May	Potentially NRHP- Eligible Property	16.7		24	10	1	0	0.0	0.0	10.0	Yes	No	Medium	No	Inland location, primary view oriented away from the project, limited views
16	248	N/A	The Gardens Plaza	Ocean City	Cape May	Potentially NRHP- Eligible Property	16.8		200	200	144	0	1.9	0.6	33.3	Yes	Yes	High	Yes	Unobstructed view toward project
16	246	N/A	915 Third Street	Ocean City	Cape May	Potentially NRHP- Eligible Property	16.8		200	199	145	0	0.0	0.0	0.4	Yes	No	Medium	No	Inland location, primary view oriented away from the project
11	93	N/A	Pleasantville Baptist Church	Pleasantville City	Atlantic	Potentially NRHP- Eligible Property	16.8		5	1	0	0	1.3	0.1	6.4	No	No	Low	No	Inland location, primary view oriented away from the project
14	176	N/A	11 West Edgewater Avenue	Pleasantville City	Atlantic	Potentially NRHP- Eligible Property	16.8		17	8	0	0	0.1	0.0	30.9	No	No	Low	No	Inland location, primary view oriented away from the project
16	253	N/A	915 Fourth Street	Ocean City	Cape May	Potentially NRHP- Eligible Property	16.8		200	198	147	0	0.2	0.1	45.6	Yes	Yes	Medium	Yes	Unobstructed view toward project
16	250	N/A	908 Park Place	Ocean City	Cape May	Potentially NRHP- Eligible Property	16.8		2	0	0	0	0.1	0.0	4.1	Yes	No	Medium	No	Inland location, primary view oriented away from the project



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Historic Home	es and Structur	N/A	House, 319 Leeds Avenue	Pleasantville City	Atlantic	Potentially NRHP- Eligible Property	16.8		4	1	0	0	0.4	0.0	11.7	No	No	Low	No	Inland location, primary view oriented away from the project
11	65	N/A	303 Pitney Road	Absecon City	Atlantic	Potentially NRHP- Eligible Property	16.8		3	3	0	0	0.4	0.0	1.9	No	No	Low	No	Inland location, primary view oriented away from the project
16	249	N/A	900 Park Place	Ocean City	Cape May	Potentially NRHP- Eligible Property	16.8		1	0	0	0	0.1	0.0	1.3	Yes	No	Medium	No	Inland location, primary view oriented away from the project
16	252	N/A	911-13 Fourth Street	Ocean City	Cape May	Potentially NRHP- Eligible Property	16.8		43	27	3	0	0.1	0.0	38.4	Yes	No	Medium	No	Inland location, primary view oriented away from the project
13, 16	159	N/A	865 Park Place	Ocean City	Cape May	Potentially NRHP- Eligible Property	16.8		5	3	3	0	0.2	0.0	24.3	Yes	No	Medium	No	Inland location, primary view oriented away from the project
14	160	N/A	The Washington Avenue School	Pleasantville City	Atlantic	Potentially NRHP- Eligible Property	16.9		19	4	0	0	2.6	0.2	5.9	Yes	No	Medium	No	Inland location, primary view oriented away from the project
13, 16	158	N/A	863 Park Place	Ocean City	Cape May	Potentially NRHP- Eligible Property	16.9		1	0	0	0	0.1	0.0	0.7	Yes	No	Medium	No	Inland location, primary view oriented away from the project
16	251	N/A	Fourth and Corinthian	Ocean City	Cape May	Potentially NRHP- Eligible Property	16.9		4	2	0	0	0.1	0.0	5.2	Yes	No	Medium	No	Inland location, primary view oriented away from the project
16	247	N/A	330 Corinthian Avenue	Ocean City	Cape May	Potentially NRHP- Eligible Property	16.9		13	1	0	0	0.2	0.0	2.7	Yes	No	Medium	No	Inland location, primary view oriented away from the project
16	254	N/A	912 Fourth Street	Ocean City	Cape May	Potentially NRHP- Eligible Property	16.9		82	28	2	0	0.1	0.0	18.3	Yes	Yes	Medium	Yes	Unobstructed view toward project



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Historic Home	s and Structur	N/A	921 Fifth to Boardwalk	Ocean City	Cape May	Potentially NRHP- Eligible Property	16.9		200	200	147	0	1.1	0.3	26.2	Yes	Yes	High	Yes	Unobstructed view toward project
16	245	N/A	880 Park Place	Ocean City	Cape May	Potentially NRHP- Eligible Property	16.9		25	6	0	0	0.1	0.0	15.4	Yes	No	Medium	No	Inland location, primary view oriented away from the project
16	255	N/A	908-10 Brighton Place	Ocean City	Cape May	Potentially NRHP- Eligible Property	16.9		2	0	0	0	0.1	0.0	1.9	Yes	No	Medium	No	Inland location, primary view oriented away from the project
8	40	2325	Tuckerton Historic District	Tuckerton Borough	Ocean	NRHP-Eligible Property (NJHPO Determined)	17.0		157	75	15	0	566.2	8.7	1.5	No	No	Low	No	Inland location, minimal visual effect due to distance from project, limited areas of visibility within district
11, 14	95	N/A	Atlantic City Cemetery	Pleasantville City	Atlantic	Potentially NRHP- Eligible Property	17.1		25	5	0	0	56.1	15.8	28.3	No	No	Low	No	Inland location, primary view oriented away from the project
16	258	N/A	Days Inn	Ocean City	Cape May	Potentially NRHP- Eligible Property	17.1		54	49	30	0	0.8	0.0	6.2	Yes	Yes	High	Yes	Unobstructed view toward project
14	167	N/A	Martins General Store at 521 Doughty	Pleasantville City	Atlantic	Potentially NRHP- Eligible Property	17.2		13	7	1	0	0.7	0.1	14.8	Yes	No	Medium	No	Inland location, primary view oriented away from the project
8	39	N/A	Tuckerton Historic District [locally- designated boundaries]	Tuckerton Borough	Ocean	Potentially NRHP- Eligible Property	17.5		2	1	0	0	124.9	0.1	0.1	No	No	Low	No	Inland location, primary view oriented away from the project
16	262	N/A	Harris House Motor Inn	Ocean City	Cape May	Potentially NRHP- Eligible Property	17.6		100	92	54	0	1.5	0.2	13.4	Yes	Yes	Medium	Yes	Unobstructed view toward project
16	259	N/A	Hanscom Apartments 1945	Ocean City	Cape May	Potentially NRHP- Eligible Property	17.7		1	1	0	0	0.2	0.0	0.0	Yes	No	Medium	No	Inland location, primary view oriented away from the project



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Historic Home	s and Structur	N/A	1122 Ocean Avenue	Ocean City	Cape May	Potentially NRHP- Eligible Property	17.7		4	2	0	0	0.1	0.0	9.0	Yes	No	Medium	No	Inland location, primary view oriented away from the project
16	261	N/A	Franconia Apartments 1945	Ocean City	Cape May	Potentially NRHP- Eligible Property	17.7		4	2	0	0	0.1	0.0	4.4	Yes	No	Medium	No	Inland location, primary view oriented away from the project
13	107	89000800	Linwood Historic District	Linwood	Atlantic	NRHP-Listed Property	17.7		51	31	1	0	97.6	2.4	2.4	Yes	No	Medium	No	Inland location, primary view oriented away from the project
16	263	N/A	13th and Boardwalk	Ocean City	Cape May	Potentially NRHP- Eligible Property	17.7		185	164	78	0	0.8	0.1	10.3	Yes	Yes	High	Yes	Unobstructed view toward project
13	105	N/A	Scull-Leeds Cemetery	Linwood City	Atlantic	Potentially NRHP- Eligible Property	17.8		2	1	0	0	0.1	0.0	22.1	No	No	Low	No	Inland location, primary view oriented away from the project
5, 9, 10, 11	24	N/A	Atlantic City Electric Utility Corridor, 132kv Line	Multi-county	Multi- county	Potentially NRHP- Eligible Property	17.8		13	1	0	0	292.6	14.1	4.8	No	No	Low	No	Large district with limited areas of visibility throughout most of district area
16	264	N/A	1304-08 Ocean Avenue	Ocean City	Cape May	Potentially NRHP- Eligible Property	17.8		12	1	0	0	0.2	0.0	8.7	Yes	No	Medium	No	Inland location, primary view oriented away from the project
16	265	N/A	Our Lady of Good Counsel Rectory	Ocean City	Cape May	Potentially NRHP- Eligible Property	17.8		38	34	3	0	0.2	0.0	6.2	Yes	No	Medium	No	Inland location, primary view oriented away from the project
16	266	N/A	Andrew's	Ocean City	Cape May	Potentially NRHP- Eligible Property	17.8		3	0	0	0	0.4	0.0	1.1	Yes	No	Medium	No	Inland location, primary view oriented away from the project
16	267	N/A	1401 Ocean Avenue	Ocean City	Cape May	Potentially NRHP- Eligible Property	17.8		132	80	35	0	0.3	0.1	34.3	Yes	Yes	High	Yes	Unobstructed view toward project
16	268	N/A	1417 Ocean Avenue	Ocean City	Cape May	Potentially NRHP- Eligible Property	17.9		165	106	43	0	0.3	0.1	29.8	Yes	Yes	High	Yes	Unobstructed view toward project



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Historic Home	269	nes N/A	1421 Ocean Avenue	Ocean City	Cape May	Potentially NRHP- Eligible Property	17.9		56	27	9	0	0.3	0.1	32.8	Yes	Yes	High	Yes	Unobstructed view toward project
16	270	N/A	1437 Ocean Avenue	Ocean City	Cape May	Potentially NRHP- Eligible Property	17.9		38	2	0	0	0.1	0.0	37.8	Yes	Yes	High	Yes	Unobstructed view toward project
16	271	N/A	1441 Ocean Avenue	Ocean City	Cape May	Potentially NRHP- Eligible Property	17.9		42	3	0	0	0.1	0.0	39.0	Yes	Yes	High	Yes	Unobstructed view toward project
16	272	N/A	1445 Ocean Avenue	Ocean City	Cape May	Potentially NRHP- Eligible Property	17.9		17	0	0	0	0.1	0.0	11.4	Yes	Yes	High	Yes	Unobstructed view toward project
8	38	N/A	319 East Main Street (Route 9)	Tuckerton Borough	Ocean	Potentially NRHP- Eligible Property	18.0		2	0	0	0	0.3	0.0	6.5	No	No	Low	No	Inland location, primary view oriented away from the project
16	273	N/A	611 Chelsea Place	Ocean City	Cape May	Potentially NRHP- Eligible Property	18.0		26	5	2	0	0.1	0.0	4.9	Yes	No	Medium	No	Inland location, primary view oriented away from the project
3, 4, 7, 8	20	4332	Bass River State Forest Historic District	Bass River and Little Egg Harbor Townships	Burlington , Ocean	NRHP-Eligible Property (NJHPO Determined)	18.0		169	66	18	0	7261.0	323.8	4.5	No	No	Low	No	Inland location, primary view oriented away from the project
16	275	N/A	612 Chelsea Place	Ocean City	Cape May	Potentially NRHP- Eligible Property	18.0		107	74	30	0	0.1	0.0	48.1	Yes	No	Medium	No	Inland location, primary view oriented away from the project
16	274	N/A	608 Chelsea Place	Ocean City	Cape May	Potentially NRHP- Eligible Property	18.0		9	8	1	0	0.0	0.0	14.2	Yes	No	Medium	No	Inland location, primary view oriented away from the project
16	276	N/A	16th Street at Boardwalk	Ocean City	Cape May	Potentially NRHP- Eligible Property	18.0		111	74	9	0	0.2	0.1	44.5	Yes	Yes	High	Yes	Unobstructed view toward project
8	37	N/A	Tuckerton Armory	Tuckerton Borough	Ocean	Potentially NRHP- Eligible Property	18.1		1	0	0	0	10.2	0.0	0.0	No	No	Low	No	Inland location, primary view oriented away from the project



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Historic Home	s and Structu	res			1			1			1	r		r	1	1	1	r	1	[
10, 11	60	N/A	Mount Calvary Cemetery	Egg Harbor Township	Atlantic	Potentially NRHP- Eligible Property	18.1		12	1	0	0	13.7	0.0	0.0	No	No	Low	No	Inland location, primary view oriented away from the project
16	278	N/A	St Albans Place at Boardwalk	Ocean City	Cape May	Potentially NRHP- Eligible Property	18.1		168	141	72	0	0.1	0.1	76.4	Yes	Yes	High	Yes	Unobstructed view toward project
16	279	N/A	1732 Boardwalk	Ocean City	Cape May	Potentially NRHP- Eligible Property	18.1		181	173	92	0	1.0	0.3	26.7	Yes	Yes	High	Yes	Unobstructed view toward project
13	102	N/A	34 Oak Avenue	Linwood City	Atlantic	Potentially NRHP- Eligible Property	18.3		3	0	0	0	0.4	0.0	9.3	No	No	Low	No	Inland location, primary view oriented away from the project
10	59	N/A	Bennett Chevrolet	Egg Harbor Township	Atlantic	Potentially NRHP- Eligible Property	18.5		6	0	0	0	4.7	0.1	2.0	No	No	Low	No	Inland location, primary view oriented away from the project
13	108	N/A	327 Shore Road	Somers Point City	Atlantic	Potentially NRHP- Eligible Property	18.5		1	1	0	0	0.1	0.0	0.7	No	No	Low	No	Inland location, primary view oriented away from the project
13	113	N/A	Shore Road Historic District	Somers Point City	Atlantic	Potentially NRHP- Eligible Property	18.6		46	24	8	0	25.1	0.7	2.9	Yes	No	High	Yes	Some direct views of the project
13	112	N/A	24 East New York Avenue	Somers Point City	Atlantic	Potentially NRHP- Eligible Property	18.7		2	0	0	0	0.2	0.0	10.8	No	No	Low	No	Inland location, primary view oriented away from the project
13	111	N/A	20 East New York Avenue	Somers Point City	Atlantic	Potentially NRHP- Eligible Property	18.7		1	0	0	0	0.1	0.0	3.9	No	No	Low	No	Inland location, primary view oriented away from the project
13	110	N/A	18 East New York Avenue	Somers Point City	Atlantic	Potentially NRHP- Eligible Property	18.7		1	0	0	0	0.1	0.0	0.1	No	No	Low	No	Inland location, primary view oriented away from the project



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10	58	N/A	Searstown Mall	Egg Harbor Township	Atlantic	Potentially NRHP- Eligible Property	18.8		9	2	0	0	69.8	0.2	0.2	No	No	Low	No	Inland location, primary view oriented away from the project
13	109	N/A	New York Avenue School	Somers Point City	Atlantic	Potentially NRHP- Eligible Property	18.8		4	0	0	0	1.2	0.0	0.5	No	No	Low	No	Inland location, primary view oriented away from the project
13	117	N/A	Angler's Club	Somers Point City	Atlantic	Potentially NRHP- Eligible Property	18.9		25	12	2	0	0.2	0.1	28.4	Yes	No	Medium	No	Inland location, limited areas of visibility
13	118	70000378	Somers Mansion	Somers Point City	Atlantic	NRHP-Listed Property	18.9		46	21	5	0	1.4	0.2	16.0	Yes	No	Medium	No	Inland location, limited areas of visibility
10	55	N/A	6605 Delilah Road	Egg Harbor Township	Atlantic	Potentially NRHP- Eligible Property	18.9		5	0	0	0	0.4	0.0	0.8	No	No	Low	No	Inland location, minimal visual effect due to distance from project, limited areas of visibility
7	34	4328	Gulf Service Station	Port Republic City	Atlantic	NRHP-Eligible Property (NJHPO Determined)	19.0		94	90	19	0	1.5	0.4	26.7	Yes	No	Low	No	Inland location, minimal visual effect due to distance from project, limited areas of visibility
13	122	N/A	Tuckahoe Inn	Upper Township	Cape May	Potentially NRHP- Eligible Property	20.4		55	16	0	0	1.4	0.0	3.5	Yes	No	Medium	No	Inland location, minimal visual effect due to distance from project, limited areas of visibility
13, 16	123	N/A	B.L. England Generating Station	Upper Township	Cape May	Potentially NRHP- Eligible Property	20.5		151	41	0	0	297.7	6.4	2.1	No	No	Low	No	Inland location, minimal visual effect due to distance from project, limited areas of visibility



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Historic Home	s and Structur	es																		
16	280	N/A	D. Howard Evans House	Ocean City	Cape May	Potentially NRHP- Eligible Property	20.5		200	200	87	0	0.2	0.2	77.7	Yes	Yes	High	Yes	Unobstructed view toward project
13	121	N/A	Great Egg Harbor River Crossing Transmission Towers	Multi-county	Multi- county	Potentially NRHP- Eligible Property	20.8		94	14	0	0	1.1	0.8	70.8	Yes	Yes	Low	No	Inland location, minimal visual effect due to distance from project, limited areas of visibility
13	119	5624	Morris Beach Historic District	Little Egg Harbor Township	Atlantic	NRHP-Eligible Property (NJHPO Determined)	20.8		36	5	0	0	23.5	6.3	27.0	Yes	No	Medium	No	Inland location, minimal visual effect due to distance from project, limited areas of visibility within district
10	57	N/A	Chicken Farm	Egg Harbor Township	Atlantic	Potentially NRHP- Eligible Property	20.9		3	0	0	0	4.2	0.2	4.9	No	No	Low	No	Inland location, minimal visual effect due to distance from project, limited areas of visibility
10	56	N/A	McKee City General Store	Egg Harbor Township	Atlantic	Potentially NRHP- Eligible Property	22.1		7	0	0	0	0.0	0.0	1.0	Yes	No	Medium	No	Inland location, minimal visual effect due to distance from project, limited areas of visibility
7	35	N/A	722 Moss Mill Road	Galloway Township	Atlantic	Potentially NRHP- Eligible Property	23.3		3	0	0	0	1.2	0.0	3.8	No	No	Low	No	Inland location, minimal visual effect due to distance from project, limited areas of visibility



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Historic Home	s and Structur	res																		
6	32	N/A	Cologne Avenue East of Herschel Street	Galloway Township	Atlantic	Potentially NRHP- Eligible Property	23.7		1	0	0	0	2.1	0.1	5.6	No	No	Low	No	Inland location, minimal visual effect due to distance from project, limited areas of visibility
13	104	N/A	lsaac and Keziah (Abbot) Smith House	Egg Harbor Township	Atlantic	Potentially NRHP- Eligible Property	24.3		10	0	0	0	52.8	11.1	21.0	Yes	No	Medium	No	Inland location, minimal visual effect due to distance from project, limited areas of visibility
13	106	N/A	Elijah and Barzilla Somers Smith House	Egg Harbor Township	Atlantic	Potentially NRHP- Eligible Property	24.3		14	0	0	0	79.9	28.2	35.3	Yes	No	Low	No	Inland location, minimal visual effect due to distance from project, limited areas of visibility
6	27	N/A	L.N. Renault and Sons Winery	Egg Harbor Township	Atlantic	SRHP-Listed Property	24.4		3	0	0	0	322.1	1.5	0.5	No	No	Medium	No	Inland location, minimal visual effect due to distance from project, limited areas of visibility
17	283	N/A	17 34th Street	Sea Isle City	Cape May	Potentially NRHP- Eligible Property	24.8		194	168	14	0	0.2	0.0	17.1	Yes	Yes	High	Yes	Unobstructed view toward project
17	284	N/A	21 36th Street	Sea Isle City	Cape May	Potentially NRHP- Eligible Property	24.9		124	84	3	0	0.1	0.0	6.7	Yes	No	Medium	No	Minimal visual effect due to distance from project
17	285	N/A	Braca Cafe	Sea Isle City	Cape May	Potentially NRHP- Eligible Property	25.2		52	4	0	0	0.1	0.0	7.6	Yes	Yes	High	No	Minimal visual effect due to distance from project
17	286	N/A	18-20 42nd Street	Sea Isle City	Cape May	Potentially NRHP- Eligible Property	25.2		31	8	0	0	0.1	0.0	38.6	Yes	No	Medium	No	Minimal visual effect due to distance from project



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Historic Home	287	N/A	4208 Pleasure Avenue	Sea Isle City	Cape May	Potentially NRHP- Eligible Property	25.2		4	1	0	0	0.1	0.0	2.6	Yes	No	Medium	No	Minimal visual effect due to distance from project
17	288	N/A	1876 Centennial Building	Sea Isle City	Cape May	Potentially NRHP- Eligible Property	25.3		60	27	0	0	0.1	0.0	27.1	Yes	No	Medium	No	Minimal visual effect due to distance from project
17	289	N/A	McCann Realtors	Sea Isle City	Cape May	Potentially NRHP- Eligible Property	25.3		17	7	0	0	0.1	0.0	0.2	Yes	No	Medium	No	Minimal visual effect due to distance from project
17	290	N/A	12 44th Street	Sea Isle City	Cape May	Potentially NRHP- Eligible Property	25.3		148	76	2	0	0.1	0.0	20.3	Yes	Yes	High	No	Minimal visual effect due to distance from project
17	291	N/A	18 45th Street	Sea Isle City	Cape May	Potentially NRHP- Eligible Property	25.3		128	52	0	0	0.1	0.0	27.4	Yes	Yes	High	No	Minimal visual effect due to distance from project
17	292	N/A	9 46th Street	Sea Isle City	Cape May	Potentially NRHP- Eligible Property	25.3		200	169	7	0	0.1	0.1	47.5	Yes	Yes	High	No	Minimal visual effect due to distance from
17	296	N/A	18 46th Street	Sea Isle City	Cape May	Potentially NRHP- Eligible Property	25.4		106	74	0	0	0.1	0.0	29.6	Yes	Yes	High	No	Minimal visual effect due to distance from
17	297	N/A	13 47th Street	Sea Isle City	Cape May	Potentially NRHP- Eligible Property	25.4		99	84	1	0	0.1	0.0	15.8	Yes	Yes	High	No	Minimal visual effect due to distance from
17	294	N/A	20 46th Street	Sea Isle City	Cape May	Potentially NRHP- Eligible Property	25.4		8	6	0	0	0.1	0.0	22.0	Yes	No	Medium	No	Minimal visual effect due to distance from project
17	293	N/A	28 46th Street	Sea Isle City	Cape May	Potentially NRHP- Eligible Property	25.4		6	6	0	0	0.1	0.0	3.5	Yes	No	Medium	No	Minimal visual effect due to distance from project
17	295	N/A	4606 Pleasure Avenue	Sea Isle City	Cape May	Potentially NRHP- Eligible Property	25.4		18	13	0	0	0.1	0.0	51.5	Yes	No	Medium	No	Minimal visual effect due to distance from project
17	298	N/A	4700 Pleasure Avenue	Sea Isle City	Cape May	Potentially NRHP- Eligible Property	25.4		4	3	0	0	0.1	0.0	6.8	Yes	No	Medium	No	Minimal visual effect due to distance from



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Historic Home	es and Structur	es N/A	14 48th Street	Sea Isle City	Cape May	Potentially NRHP- Eligible Property	25.5		200	164	4	0	0.1	0.0	20.9	Yes	Yes	High	No	Minimal visual effect due to distance from project
17	300	N/A	11 49th Street	Sea Isle City	Cape May	Potentially NRHP- Eligible Property	25.5		200	169	8	0	0.1	0.1	51.6	Yes	Yes	High	No	Minimal visual effect due to distance from project
17	302	N/A	10 49th Street	Sea Isle City	Cape May	Potentially NRHP- Eligible Property	25.5		200	174	8	0	0.1	0.1	56.3	Yes	Yes	Medium	No	Minimal visual effect due to distance from project
17	303	N/A	11 50th Street	Sea Isle City	Cape May	Potentially NRHP- Eligible Property	25.5		200	174	8	0	0.1	0.1	49.0	Yes	Yes	High	No	Minimal visual effect due to distance from
17	301	N/A	20 49th Street	Sea Isle City	Cape May	Potentially NRHP- Eligible Property	25.5		28	25	0	0	0.1	0.0	35.2	Yes	No	Medium	No	Minimal visual effect due to distance from
17	304	N/A	12 50th Street	Sea Isle City	Cape May	Potentially NRHP- Eligible Property	25.5		192	153	4	0	0.1	0.0	20.9	Yes	Yes	High	No	Minimal visual effect due to distance from project
17	305	N/A	13/15 51st Street	Sea Isle City	Cape May	Potentially NRHP- Eligible Property	25.6		3	3	0	0	0.1	0.0	0.5	Yes	Yes	High	No	Minimal visual effect due to distance from project
17	306	N/A	20 51st Street	Sea Isle City	Cape May	Potentially NRHP- Eligible Property	25.6		16	11	0	0	0.1	0.0	16.6	Yes	No	Medium	No	Minimal visual effect due to distance from project
17	307	N/A	23 53rd Street	Sea Isle City	Cape May	Potentially NRHP- Eligible Property	25.7		20	0	0	0	0.1	0.0	0.1	Yes	No	Medium	No	Minimal visual effect due to distance from project
17	309	N/A	20 53rd Street	Sea Isle City	Cape May	Potentially NRHP- Eligible Property	25.7		30	24	0	0	0.1	0.0	54.0	Yes	No	Medium	No	Minimal visual effect due to distance from project
17	308	N/A	24 53rd Street	Sea Isle City	Cape May	Potentially NRHP- Eligible Property	25.7		24	24	0	0	0.1	0.0	4.1	Yes	No	Medium	No	Minimal visual effect due to distance from project
17	310	N/A	22 54th Street	Sea Isle City	Cape May	Potentially NRHP- Eligible Property	25.7		33	31	0	0	0.1	0.0	1.7	Yes	No	Medium	No	Minimal visual effect due to distance from



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6, 7	26	N/A	Residence	Washington Township	Burlington	Potentially NRHP- Eligible Property	25.8		9	0	0	0	315.4	1.9	0.6	Yes	No	Medium	No	Minimal visual effect due to distance from project	
6	28	N/A	Egg Harbor City Historic District	Egg Harbor City	Atlantic	Potentially NRHP- Eligible Property	26.2		1	0	0	0	341.6	5.5	1.6	No	No	Low	No	Inland location, minimal visual effect due to distance from project, limited areas of visibility	
2	19	N/A	379 Bay Shore Drive	Barngat Township	Ocean	Potentially NRHP- Eligible Property	26.4		114	26	0	0	0.3	0.1	37.6	Yes	Yes	High	No	Minimal visual effect due to distance from project	
6	31	N/A	Lincoln Park	Egg Harbor Township	Atlantic	Potentially NRHP- Eligible Property	26.7		1	0	0	0	4.5	0.0	0.0	No	No	Low	No	Minimal visual effect due to distance from project, limited areas of visibility	
6	30	N/A	102 Cincinnati Avenue	Egg Harbor City	Atlantic	Potentially NRHP- Eligible Property	26.7		1	0	0	0	0.2	0.0	0.0	No	No	Low	No	Minimal visual effect due to distance from project	
3, 6, 7	21	359	Green Bank Historic District	Washington	Burlington	NRHP-Eligible Property (NJHPO Determined)	26.8		2	0	0	0	470.7	0.2	0.0	No	No	Low	No	Inland location, minimal visual effect due to distance from project, limited areas of visibility	
12	99	3063	North and South Tuckahoe Historic District	Corbin City and Upper Townships	Cape May, Atlantic	NRHP-Eligible Property (NJHPO Determined)	26.9		14	3	0	0	85.2	0.1	0.1	No	No	Low	No	Inland location, minimal visual effect due to distance from project, limited areas of visibility	
12	100	97000103	South Tuckahoe Historic District	Upper Township	Cape May	NRHP-Listed Property	26.9		14	3	0	0	42.6	0.0	0.1	No	No	Medium	No	Inland location, minimal visual effect due to distance from project, limited areas of visibility	



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Historic Home	s and Structu	res							-	-	-											
6	29	N/A	413 White Horse Pike	Egg Harbor Township	Atlantic	Potentially NRHP- Eligible Property	26.9		1	0	0	0	0.5	0.0	0.0	No	No	Low	No	Inland location, minimal visual effect due to distance from project, limited areas of visibility		
16	282	N/A	Dwelling at 2416 North U.S. Route 9	Denns Township	Cape May	Potentially NRHP- Eligible Property	27.0		1	0	0	0	26.8	0.0	0.0	No	No	Low	No	Minimal visual effect due to distance from project		
17	312	5603	Residence	Avalon Borough	Cape May	NRHP-Eligible Property (NJHPO Determined)	27.3		1	0	0	0	0.1	0.0	0.7	No	No	Low	No	Minimal visual effect due to distance from project		
12	98	89002013	Marshallville Historic District	Upper Township	Cape May	NRHP-Listed Property	28.1		2	0	0	0	104.6	0.0	0.0	Yes	No	Medium	No	Inland location, minimal visual effect due to distance from project, limited areas of visibility		
2	16	5419	The Judge's Shack	Berkeley Township	Ocean	NRHP-Eligible Property (NJHPO Determined)	30.9		156	88	0	0	0.9	0.8	88.0	Yes	Yes	High	No	Minimal visual effect due to distance from project		
17	314	N/A	Benny's Landing	Middle Township	Cape May	Potentially NRHP- Eligible Property	33.6		2	0	0	0	0.1	0.1	87.4	Yes	No	Medium	No	Inland location, minimal visual effect due to distance from project, limited areas of visibility		
17	313	N/A	Bennys Landing Road	Middle Township	Cape May	Potentially NRHP- Eligible Property	33.7		3	0	0	0	1.1	0.0	1.2	Yes	No	Medium	No	Inland location, minimal visual effect due to distance from project, limited areas of visibility		



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Historic Home	s and Structur	es																				
9	47	N/A	6862 Harding Highway	Hamilton Township	Atlantic	Potentially NRHP- Eligible Property	33.7		1	0	0	0	9.2	0.1	1.0	No	No	Low	No	Inland location, minimal visual effect due to distance from project, limited areas of visibility		
18	315	5384	Grassy Sound Historic District	Middle Township	Cape May	NRHP-Eligible Property (NJHPO Determined)	34.3		3	0	0	0	38.2	0.1	0.3	Yes	No	Medium	No	Inland location, minimal visual effect due to distance from project, limited areas of visibility		
1	12	N/A	Governor's Mansion	Berkeley Township	Ocean	Potentially NRHP- Eligible Property	35.6		189	46	0	0	0.5	0.4	87.1	Yes	Yes	High	Yes	Unobstructed view toward project		
1	10	N/A	Gatehouse	Berkeley Township	Ocean	Potentially NRHP- Eligible Property	35.7		2	0	0	0	0.1	0.0	9.8	Yes	No	Medium	No	Minimal visual effect due to distance from project		
1	8	N/A	1015 South Ocean Avenue	Seaside Park Borough	Ocean	Potentially NRHP- Eligible Property	37.6		4	0	0	0	0.2	0.0	2.8	Yes	Yes	Medium	No	Minimal visual effect due to distance from project		
1	7	N/A	905-907 South Ocean Avenue	Seaside Park Borough	Ocean	Potentially NRHP- Eligible Property	37.6		116	6	0	0	0.1	0.0	3.1	Yes	No	Medium	No	Minimal visual effect due to distance from project		
1	6	N/A	817 South Ocean Avenue	Seaside Park Borough	Ocean	Potentially NRHP- Eligible Property	37.7		12	0	0	0	0.2	0.0	0.4	Yes	Yes	High	No	Minimal visual effect due to distance from project		
1	5	N/A	315 South Ocean Avenue	Seaside Park Borough	Ocean	Potentially NRHP- Eligible Property	37.9		7	0	0	0	0.1	0.0	1.2	Yes	Yes	Medium	No	Minimal visual effect due to distance from project		
Recreational F	roperties								1										1			
11	82	N/A	Brigantine Hotel	Brigantine City	Atlantic	Potentially NRHP- Eligible Property	9.9		200	200	200	70	1.2	0.5	42.5	Yes	Yes	High	Yes	Unobstructed view toward project		
14	203	N/A	Garden Pier	Atlantic City	Atlantic	Potentially NRHP- Eligible Property	10.5		200	200	200	51	2.6	2.0	76.3	Yes	Yes	High	Yes	Unobstructed view toward project		



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Historic Home	212	N/A	Atlantic City Boardwalk Historic District	Atlantic City	Atlantic	Potentially NRHP- Eligible Property	10.5		200	200	200	51	35.9	7.8	21.7	Yes	Yes	High	Yes	Unobstructed view toward project
14	223	N/A	Million Dollar Pier	Atlantic City	Atlantic	Potentially NRHP- Eligible Property	11.2		200	200	200	23	4.1	2.7	67.0	Yes	Yes	High	Yes	Unobstructed view toward project
14	214	78001733	Shelburne Hotel	Atlantic City	Atlantic	NRHP-Listed Property	11.3		52	2	0	0	2.1	0.1	2.5	Yes	Yes	High	No	View of the project largely obscured by neighboring buildings, primary view oriented away from the Project
14	215	87000814	Atlantic City Convention Hall	Atlantic City	Atlantic	National Historic Landmark (NHL)	11.4	AC02	200	200	200	47	8.6	0.3	3.9	Yes	Yes	High	Yes	Unobstructed view toward project
14	233	5053	Ritz Carlton Hotel	Atlantic City	Atlantic	NRHP-Eligible Property (NJHPO Determined)	11.7		134	92	47	5	1.1	0.2	17.0	Yes	Yes	High	Yes	Unobstructed view toward project
8	43	N/A	Greater Beach Haven Historic District	Beach Haven Borough	Ocean	Potentially NRHP- Eligible Property	13.1		22	19	16	1	78.7	0.4	0.5	Yes	No	Medium	No	Limited areas of visibility throughout mos of district area but several areas of likely project visibility along coast
8	44	14000933	Beach Haven Historic District (Boundary Increase)	Somers Point City	Atlantic	NRHP-Listed Property	13.1		22	19	16	1	38.7	0.1	0.3	Yes	No	Medium	No	Limited areas of visibility throughout mos of district area but several areas of likely project visibility along coast
8	41	N/A	Bed and Breakfast Overlay Zone	Beach Haven Borough	Ocean	Potentially NRHP- Eligible Property	13.4		6	0	0	0	34.4	0.2	0.7	Yes	No	Medium	No	Limited areas of visibility throughout mos of district area but several areas of likely project visibility along coast



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Historic Home	s and Structur	83001608	Beach Haven Historic District	Somers Point City	Atlantic	NRHP-Listed Property	13.4		6	0	0	0	21.8	0.2	1.1	Yes	No	Medium	No	Limited areas of visibility throughout most of district area but several areas of likely project visibility along coast	
11	62	N/A	Marriott's Seaview Resort & Spa	Galloway Township	Atlantic	Potentially NRHP- Eligible Property	16.1		128	103	46	0	22.0	3.7	17.0	Yes	No	Medium	No	Inland location, limited areas of visibility	
14	234	N/A	Mariner Cove Marina	Egg Harbor Township	Atlantic	Potentially NRHP- Eligible Property	16.4		143	35	0	0	8.0	1.7	20.9	Yes	Yes	High	Yes	Unobstructed view toward project	
13, 14	103	N/A	Lingwood Golf & Country Club	Linwood City	Atlantic	Potentially NRHP- Eligible Property	16.6		171	90	1	0	244.6	173.3	70.9	Yes	Yes	High	Yes	Unobstructed view toward project	
16	257	N/A	Amusement Park	Ocean City	Cape May	Potentially NRHP- Eligible Property	17.0		154	123	62	0	2.5	0.4	15.7	Yes	Yes	High	Yes	Unobstructed view toward project	
8	36	N/A	Gunning Club	Eagleswood Township	Ocean	Potentially NRHP- Eligible Property	17.5		200	128	4	0	2.5	1.8	72.0	Yes	Yes	Medium	Yes	Unobstructed view toward project	
16	277	N/A	Seaview Beach	Ocean City	Cape May	Potentially NRHP- Eligible Property	18.0		164	123	51	0	0.9	0.1	14.8	Yes	Yes	High	Yes	Unobstructed view toward project	
13	115	N/A	Bay Front Historic District [Survey Boundaries]	Somers Point City	Atlantic	Potentially NRHP- Eligible Property	18.4		157	45	1	0	52.1	11.2	21.5	Yes	Yes	High	Yes	Unobstructed view toward project	
13	116	89000227	Bay Front Historic District	Somers Point City	Atlantic	NRHP-Listed Property	18.4		157	45	1	0	50.4	11.0	21.7	Yes	Yes	High	Yes	Unobstructed view toward project	
13	114	5670	Bay Front Historic District Extension	Somers Point City	Atlantic	NRHP-Eligible Property (NJHPO Determined)	18.8		15	7	1	0	3.0	0.0	0.3	Yes	No	Medium	No	Inland location	
9	48	82005062	Abbott's Modern Cabins	Hamilton Township	Atlantic	SRHP-Listed Property	31.6		2	0	0	0	8.6	0.0	0.3	No	No	Low	No	Inland location, minimal visual effect due to distance from project, limited areas of visibility	


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Historic Home	s and Structur	es			1	[1	1	1	1	1		1		1			1		
1, 2	14	N/A	Woodmansee Estate	Lacey Township	Ocean	Potentially NRHP- Eligible Property	31.8		181	27	0	0	506.7	127.6	25.2	Yes	No	Medium	No	Inland location, minimal visual effect due to distance from project, limited areas of visibility
1	13	N/A	Island Beach State Park (28-CM-19)	Berkeley Township	Ocean	Potentially NRHP- Eligible Property	33.8		88	21	0	0	0.7	0.3	36.5	Yes	Yes	High	No	Inland location, minimal visual effect due to distance from project, limited areas of visibility
18	319	N/A	Wildwood Boardwalk	Wildwood City	Cape May	Potentially NRHP- Eligible Property	35.3		56	1	0	0	11.3	0.1	0.5	Yes	Yes	High	No	Limited areas of visibility, minimal visual effect due to distance from project
1	11	N/A	Aeolium Visitor Center	Berkeley Township	Ocean	Potentially NRHP- Eligible Property	35.7		1	0	0	0	0.0	0.0	33.8	Yes	No	Medium	No	Inland location, minimal visual effect due to distance from project, limited areas of visibility
18	320	4192	Wildwoods Shore Resort Historic District	Wildwood Crest Borough	Cape May	SRHP-Listed Property	36.8		135	1	0	0	134.6	6.3	4.7	Yes	Yes	High	No	Inland location, minimal visual effect due to distance from project, limited areas of visibility
1	9	4090	Midway Camps Historic District	Berkeley Township	Ocean	NRHP-Eligible Property (NJHPO Determined)	37.1		156	25	0	0	24.4	0.7	2.9	Yes	Yes	High	No	Inland location, minimal visual effect due to distance from project, limited areas of visibility



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Historic Home	s and Structu	res		P	1		P	1		1						1	1	1	1	P
1	1	N/A	Belle Freeman Carousel	Seaside Heights Borough	Ocean	NRHP-Eligible Property (NJHPO Determined)	39.1		137	0	0	0	0.7	0.5	76.2	Yes	Yes	High	No	Minimal visual effect due to distance from project, limited areas of visibility
Transportation	1 Sites and Co	rridors	-		1	-	1	1							-		[· · · · · · · · · · · · · · · · · · ·		
5, 6, 10, 11, 14	23	3862	Camden and Atlantic Railroad Historic District	Hammonton Township	Atlantic	NRHP-Eligible Property (NJHPO Determined)	12.2		81	51	9	0	333.6	23.0	6.9	Yes	Yes	Low	No	Large district with small, limited areas of visibility throughout most of district area
14	205	N/A	Atlantic City Airport/Bader Field	Atlantic City	Atlantic	Potentially NRHP- Eligible Property	12.3		19	4	0	0	142.5	44.7	31.4	Yes	No	Low	No	Inland location, limited areas of visibility throughout most of district area
14	186	N/A	Penrose Canal	Atlantic City	Atlantic	Potentially NRHP- Eligible Property	12.3		1	0	0	0	5.4	0.0	0.0	Yes	No	Low	No	Inland location, limited areas of visibility
14	184	N/A	Penrose Canal Bridge	Atlantic City	Atlantic	Potentially NRHP- Eligible Property	12.3		6	0	0	0	0.5	0.2	45.1	Yes	No	Medium	No	Inland location, limited areas of visibility
9, 10, 11, 14	49	2938	West Jersey and Atlantic Railroad Historic District	Hamilton and Egg Harbor Townships, Atlantic City	Atlantic	NRHP-Eligible Property (NJHPO Determined)	14.1		62	15	0	0	248.4	96.1	38.7	No	No	Low	No	Large district with small, limited areas of visibility throughout mosi of district area



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Historic Home	180	N/A	U.S. Route 40 Motel Historic District	Egg Harbor Township	Atlantic	Potentially NRHP- Eligible Property	14.9		21	2	0	0	13.9	6.3	45.5	Yes	Yes	Medium	No	Inland location, limited areas of visibility
13, 14	120	1012	Ocean City- Longport Bridge (SI&A #3100001)	Egg Harbor Township and Coean City	Atlantic, Cape May	NRHP-Eligible Property (NJHPO Determined)	16.3		200	200	149	0	15.3	9.9	64.4	Yes	Yes	Medium	No	Inland location, limited areas of visibility
1, 2, 3, 4, 7, 10, 11, 13, 16, 17, 18	15	3874	Garden State Parkway Historic District	Multi-county	Multi- county	NRHP-Eligible Property (NJHPO Determined)	18.3		200	200	112	o	5334.4	165.1	3.1	No	No	Low	No	Large district with small, limited areas of visibility throughout mos of district area
10, 11	53	N/A	Municipal Airport Historic District	Egg Harbor Township	Atlantic	Potentially NRHP- Eligible Property	18.9		145	20	0	0	2724.8	630.4	23.1	No	No	Low	No	Large district with small, limited areas of visibility throughout mos of district area
10, 11	54	N/A	Atlantic City International Airport	Egg Harbor Township	Atlantic	Potentially NRHP- Eligible Property	18.9		145	20	0	0	2725.0	630.4	23.1	No	No	Low	No	Large district with small, limited areas of visibility throughout mos of district area
5, 9, 12, 15, 16, 17, 18	25	4758	Atlantic City Railroad Cape May Division Historic District	Upper Township	Cape May	NRHP-Eligible Property (NJHPO Determined)	19.8		131	31	0	0	611.2	23.3	3.8	No	No	Low	Yes	Limited areas of visibility throughout mos of district area but several area of likely project visibility near coast
10	50	N/A	Atlantic City Municipal Airport	Egg Harbor Township	Atlantic	Potentially NRHP- Eligible Property	21.6		89	8	0	0	35.7	17.7	49.5	No	No	Low	No	Inland location, limited areas of visibility



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Figure 3.1-1 Sheet Reference Number	Figure 3.1-1 Map Resource Number	Formal Resource Identificatio n Number	Name and/or Description (if applicable)	Municipality	County	Property Designation	Distance to Nearest Turbine (Miles)	Nearby Key Observation Point (KOP)	Blade Tip Elevation (Visible Units AMSL)	Turbine Aviation Light Elevation (Visible Units AMSL)	Mid-Tower Aviation Light Elevation (Visible Units AMSL)	Coast Guard Light Elevation (Visible Units AMSL)	Property Acreage within Study Area	Property Acreage within PAPE	Percentage of Property with Potential Visibility	Significant Martitime Setting	Significant View to Sea	Sensitivity to Visual Effects (Low, Medium, High)	Potential Adverse Effect	Discussion
Historic Home	51	N/A	Atlantic City Municipal Airport Terminal	Egg Harbor Township	Atlantic	Potentially NRHP- Eligible Property	21.7		43	2	0	0	6.5	0.1	1.9	No	No	Low	No	Inland location, limited areas of visibility
16	281	4857	Corson's Inlet Bridge (SI&A # 3100002)	Upper Township	Cape May	NRHP-Eligible Property (NJHPO Determined)	22.4		200	179	25	0	2.9	2.4	82.2	Yes	Yes	High	Yes	Unobstructed view toward project, views somehwat limited by by distance from the project, intransitive nature of the property
7	33	N/A	Lower Bank Road Bridge	Egg Harbor City and Washington Township	Burlington , Atlantic	Potentially NRHP- Eligible Property	24.7		66	0	0	0	0.4	0.4	90.2	Yes	Yes	Medium	Yes	Unobstructed view toward project, views somehwat limited by by distance from the project, intransitive nature of the property
17	311	4893	Townsend Inlet Bridge (SI&A # 3100003)	Sea Isle City and Middle Township	Cape May	NRHP-Eligible Property (NJHPO Determined)	27.3	SIC02	200	144	1	0	2.2	1.6	71.8	Yes	Yes	Low	No	Views limited by distance from the project, intransitive nature of the property
18	318	5628	George A. Redding Bridge (SI&A # 0506150)	Lower Township and Widwoods City	Cape May	NRHP-Eligible Property (NJHPO Determined)	37.1		8	0	0	0	1.8	0.0	1.0	Yes	Yes	Low	No	Views limited by distance from the project, intransitive nature of the property
Lighthouses a	nd Navigation	Aids		1	1	1		1			1	1			1	1	1	1		1
14	191	71000492	Absecon Lighthouse	Atlantic City	Atlantic	NRHP-Listed Property	10.6	AC05	27	17	11	2	2.0	1.0	48.3	Yes	Yes	High	Yes	Unobstructed view toward project from elevated light tower
11	91	N/A	Brigantine Lighthouse	Brigantine City	Atlantic	Potentially NRHP- Eligible Property	10.7		10	5	1	0	0.1	0.0	33.4	Yes	Yes	High	Yes	Unobstructed view toward project from elevated light tower



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Historic Home	s and Structu	res																		
10	52	N/A	Atlantic City Minicipal Airport Control Tower	Egg Harbor Township	Atlantic	Potentially NRHP- Eligible Property	21.7		36	0	0	0	0.2	0.0	3.7	No	No	Low	No	Inland location, minimal visual effect due to distance from project, limited areas of visibility
4	22	N/A	AT&T Receiver Building and Antenna Field at Manahawkin	Stafford Township	Ocean	Potentially NRHP- Eligible Property	22.0		183	47	0	0	402.5	398.0	98.9	Yes	Yes	Low	Yes	Unobstructed view toward project
2	18	71000512	Barnegat Lighthouse	Barnegat Light Borough	Ocean	NRHP-Listed Property	27.3		0	0	0	0	0.0	0.0	0.0	Yes	Yes	High	No	Inland location (far side of Long Beach Island), minimal visual effect due to distance from project, limited areas of visibility
18	317	77000859	Hereford Lighthouse	North Wildwood City	Cape May	NRHP-Listed Property	34.6		196	42	0	0	1.2	0.2	21.0	Yes	No	Medium	No	Minimal visual effect due to distance from project, limited areas of visibility
1	4	4723	AT&T Transmitter Building and Antenna Field	Berkeley Township	Ocean	NRHP-Eligible Property (NJHPO Determined)	38.0		96	0	0	0	212.7	24.7	11.6	Yes	No	Low	No	Minimal visual effect due to distance from project, limited areas of visibility
1	3	N/A	Ocean Gate Lighthouse	Ocean Gate Borough	Ocean	Potentially NRHP- Eligible Property	38.6		0	0	0	0	0.0	0.0	0.0	Yes	No	High	No	Minimal visual effect due to distance from project, limited areas of visibility
18	321	73001090	Cape May Lighthouse	Lower Township	Cape May	NRHP-Listed Property	45.0		0	0	0	0	0.0	0.0	0.0	Yes	Yes	High	No	Minimal visual effect due to distance from project, limited areas of visibility



			Ref	erence Information	on						Viev	vshed Analysis	Results*				Sensitivit	ty and Impac	t Assessmen	t
Figure 3.1-1 Sheet Reference Number	Figure 3.1-1 Map Resource Number	Formal Resource Identificatio n Number	Name and/or Description (if applicable)	Municipality	County	Property Designation	Distance to Nearest Turbine (Miles)	Nearby Key Observation Point (KOP)	Blade Tip Elevation (Visible Units AMSL)	Turbine Aviation Light Elevation (Visible Units AMSL)	Mid-Tower Aviation Light Elevation (Visible Units AMSL)	Coast Guard Light Elevation (Visible Units AMSL)	Property Acreage within Study Area	Property Acreage within PAPE	Percentage of Property with Potential Visibility	Significant Martitime Setting	Significant View to Sea	Sensitivity to Visual Effects (Low, Medium, High)	Potential Adverse Effect	Discussion
Historic Home	es and Structu	res																		
Maritime Safe	ty and Defense	e Facilities	1	r	1	1	r	r	-	1	1	1	1		1				1	r
14	181	4745	USCG Station Atlantic City	Atlantic City	Atlantic	NRHP-Eligible Property (NJHPO Determined)	11.5		178	142	92	11	7.4	3.0	40.2	Yes	Yes	Medium	Yes	Unobstructed view toward project
8	46	5326	Little Egg Harbor US Life Saving Station #23	Little Egg Harbor Township	Atlantic	NRHP-Eligible Property (NJHPO Determined)	11.9	LEHT02	200	200	197	10	4.6	4.0	86.5	Yes	Yes	High	Yes	Unobstructed view toward project
2	17	3403	Forked River Coast Guard Station No. 112	Berkeley Township	Ocean	NRHP-Eligible Property (NJHPO Determined)	29.9		3	0	0	0	1.8	0.0	0.1	Yes	Yes	Medium	No	Inland location, minimal visual effect due to distance from project, limited areas of visibility
18	316	3818	North Wildwood Life Saving Station	North Wildwood City	Cape May	NRHP-Eligible Property (NJHPO Determined)	34.6		196	42	0	0	0.9	0.1	14.6	Yes	Yes	High	No	Minimal visual effect due to distance from project, limited areas of visibility
1	2	5207	U.S. Life Saving Station No. 13	Seaside Park Borough	Ocean essment for	NRHP-Eligible Property (NJHPO Determined)	38.9	3 1) represent 0	85	0	0	0 feet (9 sq. m) (0.3	0.0	5.0	Yes	Yes	High	No	Minimal visual effect due to distance from project, limited areas of visibility

ATTACHMENT B. VISUAL SIMULATIONS

AC02 Jim Whelan Boardwalk Hall (Atlantic City Convention Center NHL)

Atlantic City, Atlantic County, New Jersey



The image above is a +/- 124° panorama photograph from near the Jim Whelan Boardwalk Hall (Atlantic City Convention Center National Historic Landmark), panning clockwise from north-northeast (left) to southeast (right). The yellow rectangle represents the extent of the simulated photograph(s).



Location Map Cone of View Potential Turbine Visibilty

Simulation Information

Coordinates:
User Group:
Direction of View:
Distance to Nearest Visible Turbine:
Visually Sensitive Resource:

39.35245°N, 74.43817°W Resident/Tourist East-southeast 11.42 miles Atlantic City Beach, Atlantic City Convention Hall

Environmental Information							
Date Taken:	07/29/2020						
Time:	11:45 AM						
Temperature:	90°F						
Humidity:	48%						
Visibility:	10 miles						
Wind Direction:	West						
Wind Speed:	6 mph						
Conditions Observed:	Partly Cloudy						

Photograph Information

Camera:	Can
Resolution:	30.4
Focal Length:	50n
Camera Height:	8.91

Atlantic Shores Offshore Wind | Attachment B: Visual Simulations Jim Whalen Boardwalk Hall (Atlantic City Convention Center NHL) Page 1 of 51

Simulated Photograph(s)





non EOS 5D Mark IV .4 Megapixels nm l feet AMSL



Atlantic Shores Offshore Wind Project Outer Continental Shelf - New Jersey Key Observation Point: AC02 - Jim Whalen Boardwalk Hall (Atlantic City Convention Hall NHL) Attachment B: Visual Simulations: Page 2 of 51

Printed at 1 15 inches wi focal length

<u>.</u>





Printed at 100% the resulting simulation siz 15 inches wide by 10 inches high. At this size focal length, the simulation should be viefrom a distance of 21 inches.

Atlantic Shores Offshore Wind Project Outer Continental Shelf - New Jersey Key Observation Point: AC02 - Jim Whalen Boardwalk Hall (Atlantic City Convention Hall NHL) Attachment B: Visual Simulations: Page 3 of 51





Atlantic Shores Offshore Wind Project Outer Continental Shelf - New Jersey Key Observation Point. AC02 - Jim Whalen Boardwalk Hall (Atlantic City Convention Hall NHL) Attachment B: Visual Simulations: Page 4 of 51

size is simu ulting 0 Printed at 100% t 15 inches wide by ' focal length, the from a distance of





AC04 Ocean Casino Resort – Sky Garden

Atlantic City, Atlantic County, New Jersey



The image above is a +/- 124° panorama photograph from the Ocean Casino Resort - Sky Garden, panning clockwise from northeast (left) to south (right). The yellow rectangle represents the extent of the simulated photograph(s).





Simulation Information

Coordinates:	39
User Group:	Re
Direction of View:	Ea
Distance to Nearest Visible Turbine:	10
Visually Sensitive Resource:	At

39.36225°N, 74.41353°W
Resident/Tourist
East-Southeast
10.54 miles
Atlantic City Beach

Environmental Infor	mation	Photograph In
Date Taken:	08/18/2020	Camera:
Time:	6:31 AM	Resolution:
Temperature:	70°F	Focal Length:
Humidity:	93%	Camera Height:
Visibility:	10 miles	
Wind Direction:	Calm	
Wind Speed:	0 mph	
Conditions Observed:	Mostly Cloudy	

Atlantic Shores Offshore Wind | Attachment B: Visual Simulations Ocean Casino Resort – Sky Garden Page 6 of 51

Simulated Photograph(s)





Canon EOS 5D Mark IV 30.4 Megapixels 50mm 117.26 feet AMSL









BC02 North Brigantine Natural Area

Brigantine City, Atlantic County, New Jersey



The image above is a +/- 124° panorama photograph from the North Brigantine Natural Area, panning clockwise from northeasteast (left) to south (right). The yellow rectangle represents the extent of the simulated photograph(s).





Simulation Information

Coordinates:	39.42954°N
User Group:	Residents/
Direction of View:	Southeast
Distance to Nearest Visible Turbine:	9.03 miles
Visually Sensitive Resource:	North Briga

Environmental Information	
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

Photograph Information

Camera:	Can
Resolution:	30.4
Focal Length:	50m
Camera Height:	10.20

Atlantic Shores Offshore Wind | Attachment B: Visual Simulations North Brigantine Natural Area Page 11 of 51

54°N, 74.33968°W its/Tourists, Fishermen

Brigatine State Natural Area

Simulated Photograph(s)



non EOS 5D Mark IV Megapixels nm 26 feet AMSL







Printed at 100% the resulting simulation size is 15 inches wide by 10 inches high. At this size and focal length, the simulation should be viewed from a distance of 21 inches.

Atlantic Shores Offshore Wind Project Outer Continental Shelf - New Jersey Key Observation Point: BC02 - North Brigantine Natural Area Attachment B: Visual Simulations: Page 12 of 51 Simulation

The stand the

The Harts

and the second









Printed at 100% the resulting simulation size is 15 inches wide by 10 inches high. At this size and focal length, the simulation should be viewed from a distance of 21 inches.

Atlantic Shores Offshore Wind Project Outer Continental Shelf - New Jersey Key Observation Point BC02 - North Brigantine Natural Area Attachment B: Visual Simulations: Page 14 of 51



Simulation

white the terretary to the the the to a the terretary to the the

the water



1 1

Atlantic Shores Offshore Wind Project Outer Continental Shelf - New Jersey Key Observation Point BC02 - North Brigantine Natural Area Attachment B: Visual Simulations: Page 15 of 51

Printed at 100% 15 inches wide by focal length. the

BHB01 Beach Haven Historic District

Beach Haven Borough, Ocean County, New Jersey



The image above is a +/- 124° panorama photograph from the Beach Haven Historic District, panning clockwise from east-southeast (left) to southwest (right). The yellow rectangle represents the extent of the simulated photograph(s).





Simulation Information

Coordinates: User Group: Direction of View: Distance to Nearest Visible Turbine: Visually Sensitive Resource:

39.56188°N, 74.23545°W Residents/Tourists, Fishermen South-southeast 13.5 miles Beach Haven Borough Public Beach, Beach Haven Historic District

Environmental Information	
Date Taken:	08/19/2020
Time:	6:53 AM
Temperature:	73°F
Humidity:	87%
Visibility:	10 miles
Wind Direction:	Calm
Wind Speed:	0 mph
Conditions Observed:	Cloudy

Photograph Information

Car
30.4
50n
17.7

Atlantic Shores Offshore Wind | Attachment B: Visual Simulations Beach Haven Historic District Page 16 of 51

Simulated Photograph(s)

Photograph ASOW3720

non EOS 5D Mark IV .4 Megapixels nm 72 feet AMSL







be sic



Atlantic Shores Offshore Wind Project Outer Continental Shelf - New Jersey Key Observation Point. BHB01 - Beach Haven Historic District Attachment B: Visual Simulations: Page 19 of 51

Printed at 100% the resulting simulation size is 15 inches wide by 10 inches high. At this size and focal length, the simulation should be viewed from a distance of 21 inches.

1 in 2 in 2 in 2 in 2 in 2 in 2 in a scale is designed to insure the simulation mages are printed at the intended size.



Printed at 100% the resulting simulation size is 15 inches wide by 10 inches high. At this size and focal length, the simulation should be viewed from a distance of 21 inches.

is scale is de

Atlantic Shores Offshore Wind Project Outer Continental Shelf - New Jersey Key Observation Point. BHB01 - Beach Haven Historic District Attachment B: Visual Simulations: Page 20 of 51

BRT01 Bass River State Forest

Bass River Township, Burlington County, New Jersey



The image above is a +/- 124° panorama photograph from the Bass River State Forest, panning clockwise from northeast-east (left) to south (right). The yellow rectangle represents the extent of the simulated photograph(s).



Location Map Key Observation Point Cone of View Potential Turbine Visibilty

Simulation Information

Coordinates: User Group: Direction of View: Distance to Nearest Visible Turbine: Visually Sensitive Resource:

39.57672°N, 74.40830°W Resident/Tourist Southeast 18.47 miles Edwin B. Forsythe NWR, Bass River State Forest, Bass River State Forest Historic District

Environmental Information	
Date Taken:	09/22/2020
Time:	11:37 AM
Temperature:	68°F
Humidity:	32%
Visibility:	10 miles
Wind Direction:	North-Northwes
Wind Speed:	13 mph
Conditions Observed:	Fair

Photograph Information

Camera:	Car
Resolution:	30.4
Focal Length:	50n
Camera Height:	6.90

Atlantic Shores Offshore Wind | Attachment B: Visual Simulations Bass River State Forest Page 21 of 51

Simulated Photograph(s)



non EOS 5D Mark IV .4 Megapixels nm 0 feet AMSL



Atlantic Shores Offshore Wind Project Outer Continental Shelf - New Jersey Key Observation Point: BRT01 - Bass River State Forest Attachment B: Visual Simulations: Page 22 of 51

Printed at 100% the resulting simulation size i 15 inches wide by 10 inches high. At this size and focal length, the simulation should be viewed from a distance of 21 inches.





LAT01 Edwin B. Forsythe NWR at the Woodmansee Estate

Ocean City, Cape May County, New Jersey



The image above is a +/- 124° panorama photograph from the Edwin B. Forsythe National Wildlife Refuge (NWR) at the Woodmansee Estate, panning clockwise from east (left) to southwest (right). The yellow rectangle represents the extent of the simulated photograph(s).





Simulation	Information
Jinuation	mornation

Coordinates:	39.83711°N, 74.15082°W
User Group:	Residents
Direction of View:	South
Distance to Nearest Visible Turbine:	32.18 miles
Visually Sensitive Resource:	Edwin B. Forsythe Nation

Environmental Information		
Date Taken:	08/21/2020	
Time:	6:45 AM	
Temperature:	70°F	
Humidity:	87%	
Visibility:	10 miles	
Wind Direction:	Calm	
Wind Speed:	0 mph	
Conditions Observed:	Fair	

Photograph Information

Camera:	Car
Resolution:	30.4
Focal Length:	50n
Camera Height:	9.78

Atlantic Shores Offshore Wind | Attachment B: Visual Simulations Edwin B. Forsythe National Wildlife Refuge at Woodmansee Estate Page 24 of 51

Simulated Photograph(s)



he National Wildlife Refuge

non EOS 5D Mark IV .4 Megapixels nm '8 feet AMSL



Atlantic Shores Offshore Wind Project Outer Continental Shelf - New Jersey Key Observation Point. LAT01 - Edwin B. Forsythe National Wildlife Refuge at the Woodmansee Estate Attachment B: Visual Simulations: Page 25 of 51

i size is ize and ulting simulation s Printed at 100% t 15 inches wide by focal length, the from a distance of





Atlantic Shores Offshore Wind Project Outer Continental Shelf - New Jersey Key Observation Point. LAT01 - Edwin B. Forsythe National Wildlife Refuge at the Woodmansee Estate Attachment B: Visual Simulations: Page 26 of 51

size is ze and ng simulation Å Printed at 100% to 15 inches wide by focal length, the from a distance of



LBT03 Beach at Long Beach Island Foundation for the Arts and Sciences

Atlantic Shores Offshore Wind | Attachment B: Visual Simulations Beach at Long Beach Island Foundation for the Arts and Sciences NRI Page 27 of 51

Long Beach Township, Ocean County, New Jersey



The image above is a +/- 124° panorama photograph from the Beach at Long Beach Island Foundation for the Arts and Sciences NRI, panning clockwise from east (left) to south-southwest (right). The yellow rectangle represents the extent of the simulated photograph(s).





Simulation Information

39.72895°N, 74.1205
Residents/Tourists, Fi
South
24.87 miles
N/A

Environmental Information	
Date Taken:	09/22/2020
Time:	5:17 PM
Temperature:	69°F
Humidity:	38%
Visibility:	10 miles
Wind Direction:	West
Wind Speed:	10 mph
Conditions Observed:	Fair

Photograph Information

Camera:	Car
Resolution:	30.4
Focal Length:	50n
Camera Height:	16.6

58°W ishermen

Simulated Photograph(s)



non EOS 5D Mark IV .4 Megapixels mm 64 feet AMSL





Offshore Wind Project Atlantic Shores (Outer Continental She

Arts and Sciences on for ng Beach Island Foundat at Lor 29 LBT03 ð Key (Attac

Printed


LEHT02 Great Bay Boulevard WMA/Rutgers Field Station

Little Egg Harbor Township, Ocean County, New Jersey



The image above is a +/- 124° panorama photograph from the Great Bay Boulevard Wildlife Management Area (WMA)/Rutgers Field Station, panning clockwise from east-southeast (left) to southwest (right). The yellow rectangle represents the extent of the simulated photograph(s).





Simulation Information

Coordinates: User Group: Direction of View: Distance to Nearest Visible Turbine: Visually Sensitive Resource:

39.50913°N, 74.32038°W Residents/Tourists, Fishermen Southeast 11.91 miles Great Bay Boulevard Wildlife Management Area, Little Egg Harbor US Life Saving Station #23

Environmental Information Date Taken: 09/22/2020 8:32 AM Time: 59°F Temperature: Humidity: 49%

10 miles

12 mph

Fair

North-northwest

Visibility:

Wind Direction:

Conditions Observed:

Wind Speed:

Camera: Resolution: Focal Length: 50mm Camera Height:

Atlantic Shores Offshore Wind | Attachment B: Visual Simulations Great Bay Boulevard WMA/Rutgers Field Station Page 30 of 51

SW

Simulated Photograph(s)





Photograph Information

Canon EOS 5D Mark IV 30.4 Megapixels 9.65 feet AMSL

Photograph D9A6659



nt: LEHT02 - Great Bay Boilevard WMA/Rutgers Field Station











Atlantic Shores Offshore Wind Project Outer Continental Shelf - New Jersey Key Observation Point. LEHT02 - Great Bay Boilevard WMA/Rutgers Field Station Attachment B: Visual Simulations: Page 34 of 51

Printed at 100% the resulting simulation size is 15 inches wide by 10 inches high. At this size and focal length, the simulation should be viewed from a distance of 21 inches.



LT02 Cape May Point State Park

Lower Township, Cape May County, New Jersey



The image above is a +/- 124° panorama photograph from the Cape May Lighthouse, Cape May Point State Park, panning clockwise from north-northeast (left) to southeast (right). The yellow rectangle represents the extent of the simulated photograph(s).





Simulation Information

Coordinates: User Group: Direction of View: Distance to Nearest Visible Turbine: Visually Sensitive Resource:

Environmental Information

08/20/2020

10:40 AM

79°F

60%

Calm

0 mph

Conditions Observed: Mostly Cloudy

10 miles

Date Taken:

Temperature:

Wind Direction:

Wind Speed:

Humidity:

Visibility:

Time:

38.93300°N, 74.96038°W Ocean Residential Residents/Tourists East-northeast 45.03 miles Cape May Point State Park, Cape May Point State Park - Fishing Access, Cape May Point Borough Beach, Cape May Lighthouse, Bayshore Heritage Scenic Byway Photograph Information Ca Canon EOS 5D Mark IV

Camera:	Car
Resolution:	30.4
Focal Length:	50n
Camera Height:	153.

Atlantic Shores Offshore Wind | Attachment B: Visual Simulations Cape May Point State Park Page 35 of 51

SE

Simulated Photograph(s)



.4 Megapixels nm .50 feet AMSL





MC02 Lucy the Margate Elephant National Historic Landmark

Margate City, Atlantic County, New Jersey



The image above is a +/- 124° panorama photograph from the lookout on top of Lucy the Margate Elephant, panning clockwise from northeast-east (left) to south (right). The yellow rectangle represents the extent of the simulated photograph(s).





Simulation Information

Coordinates: User Group: Direction of View: Distance to Nearest Visible Turbine: Visually Sensitive Resource:

39.32088°N, 74.51169°W
Residents/Tourists
East
14.43 miles
Atlantic Coast Public Bea
Margate Elephant, Marga
Beach

Environmental Information	
Date Taken:	07/29/2020
Time:	3:30 PM
Temperature:	92°F
Humidity:	35%
Visibility:	10 miles
Wind Direction:	Southwest
Wind Speed:	10 mph
Conditions Observed:	Fair

Photograph Information

Can
30.4
50n
52.5

Atlantic Shores Offshore Wind | Attachment B: Visual Simulations Lucy the Margate Elephant National Historic Landmark Page 38 of 51

Simulated Photograph(s)



ach, Lucy The ate City Public

non EOS 5D Mark IV .4 Megapixels nm 5 feet AMSL





Printed at 100% the resulting simulation si 15 inches wide by 10 inches high. At this size focal length, the simulation should be vic from a distance of 21 inches.

Atlantic Shores Offshore Wind Project Outer Continental Shelf - New Jersey Key Observation Point: MC02 - Lucy the Margate Elephant National Historic Landmark Attachment B: Visual Simulations: Page 39 of 51



Atlantic Shores Offshore Wind Project Outer Continental Shelf - New Jersey Key Observation Point. MC02 - Lucy the Margate Elephant National Historic Landmark Attachment B: Visual Simulations: Page 40 of 51

size is ze and Printed at 100% the resulting simulation si 15 inches wide by 10 inches high. At this size focal length, the simulation should be vie from a distance of 21 inches.



OC04 Gillian's Wonderland Pier

Ocean City, Cape May County, New Jersey



The image above is a +/- 124° panorama photograph from the beach near Gillian's Wonderland Pier, panning clockwise from northnortheast (left) to southeast (right). The yellow rectangle represents the extent of the simulated photograph(s).





Simulation Information

Coordinates:	39.27510°N, 74.56878°W
User Group:	Residents/Tourists, Fishern
Direction of View:	East
Distance to Nearest Visible Turbine:	17.18 miles
Visually Sensitive Resource:	Ocean City Beachfront

Environmental Information		Photograph In	
Date Taken:	09/22/2020	Camera:	
Time:	9:21 AM	Resolution:	
Temperature:	63°F	Focal Length:	
Humidity:	41%	Camera Height:	
Visibility:	10 miles		
Wind Direction:	North-northwest		
Wind Speed:	14 mph		
Conditions Observed:	Fair		

Atlantic Shores Offshore Wind | Attachment B: Visual Simulations Gillian's Wonderland Pier Page 41 of 51

SE

Simulated Photograph(s)



otograph Information

Canon EOS 5D Mark IV 30.4 Megapixels 50mm 14.50 feet AMSL



Fishermen



Printed at 100% the resulting simulation size 15 inches wide by 10 inches high. At this size an focal length, the simulation should be viewe from a distance of 21 inches.

Atlantic Shores Offshore Wind Project Outer Continental Shelf - New Jersey Key Observation Point: OC04 - Gillian's Wonderland Pier Attachment B: Visual Simulations: Page 42 of 51



Atlantic Shores Offshore Wind Project Outer Continental Shelf - New Jersey Key Observation Point: OC04 - Gillian's Wonderland Pier Attachment B: Visual Simulations: Page 43 of 51

Printed at 100% the resulting simulation size is 15 inches wide by 10 inches high. At this size and focal length, the simulation should be viewed from a distance of 21 inches.





Atlantic Shores Offshore Wind Project Outer Continental Shelf - New Jersey Key Observation Point: OC04 - Gillian's Wonderland Pier Attachment B: Visual Simulations: Page 44 of 51



0 1 in 2 in This scale is designed to insure the simulation images are printed at the intended size.

Printed at 100% the resulting simulation siz 15 inches wide by 10 inches high. At this size focal length, the simulation should be viefrom a distance of 21 inches.

Atlantic Shores Offshore Wind Project Outer Continental Shelf - New Jersey Key Observation Point: OC04 - Gillian's Wonderland Pier Attachment B: Visual Simulations: Page 45 of 51

SIC02 Townsend's Inlet Bridge

Sea Isle City, Cape Map County, New Jersey



The image above is a +/- 124° panorama photograph from Townsend's Inlet Bridge, panning clockwise from north-northeast (left) to south-southeast (right). The yellow rectangle represents the extent of the simulated photograph(s).



Location Map Key Observation Point Cone of View Potential Turbine Visibilty SIC02

Simulation Information

Coordinates:
User Group:
Direction of View:
Distance to Nearest Visible Turbine:
Visually Sensitive Resource:

39.11919°N, 74.71579°W
Residents/Tourists
Northeast
27.35 miles
Sea Isle City Beach Dune
Townsend Inlet Bridge (S

Environmental Information	
Date Taken:	09/23/2020
Time:	7:34 AM
Temperature:	61°F
Humidity:	60%
Visibility:	10 miles
Wind Direction:	West-northwest
Wind Speed:	12 mph
Conditions Observed:	Fair

Photograph Information

Camera:	Car
Resolution:	30.4
Focal Length:	50n
Camera Height:	11.6

Atlantic Shores Offshore Wind | Attachment B: Visual Simulations Townsend Inlet Bridge Page 46 of 51





ne Upland, ge (SI&A #3100003)

> non EOS 5D Mark IV .4 Megapixels nm 52 feet AMSL





SPB01 Seaside Park Beach

Seaside Park Borough, Ocean County, New Jersey



The image above is a +/- 124° panorama photograph from Seaside Park Beach, panning clockwise from east (left) to south-southwest (right). The yellow rectangle represents the extent of the simulated photograph(s).



Location	Мар
Location	Map
Mst Feet 0 250 500 1,000	

Simulation Information

Coordinates: User Group: Direction of View: Distance to Nearest Visible Turbine: Visually Sensitive Resource:

39.93533°N, 74.07164°W Residents/Tourists, Fishermen South 38.96 miles Seaside Park Beach and Boardwalk, U.S. Life Saving Station No. 13

Environmental Information	
Date Taken:	09/23/2020
Time:	5:35 PM
Temperature:	74°F
Humidity:	52%
Visibility:	10 miles
Wind Direction:	West-southwest
Wind Speed:	7 mph
Conditions Observed:	Fair

Photograph Information

Camera:	Can
Resolution:	30.4
Focal Length:	50m
Camera Height:	22.8

Atlantic Shores Offshore Wind | Attachment B: Visual Simulations Seaside Park Beach Page 49 of 51

Simulated Photograph(s)



non EOS 5D Mark IV Megapixels nm 83 feet AMSL



Atlantic Shores Offshore Wind Project Outer Continental Shelf - New Jersey Key Observation Point: SPB01 - Seaside Park Beach Attachment B: Visual Simulations: Page 50 of 51

Printed at 100% the resulting simulation size is 15 inches wide by 10 inches high. At this size and focal length, the simulation should be viewed from a distance of 21 inches.





Atlantic Shores Offshore Wind Project Outer Continental Shelf - New Jersey Key Observation Point: SPB01 - Seaside Park Beach Attachment B: Visual Simulations: Page 51 of 51

Printed at 100% the resulting simulation size is 15 inches wide by 10 inches high. At this size and focal length, the simulation should be viewed from a distance of 21 inches.

1 in 2 in his scale is designed to insure the simulation nages are printed at the intended size.