

Appendix I: NHPA Section 106 Summary

I.1 Project Overview

I.1.1 Background

This document provides a summary of the Bureau of Ocean Energy Management's (BOEM's) compliance with Section 106 of the National Historic Preservation Act (NHPA or Section 106) and documents the agency's consultation process for the development of a Programmatic Agreement that will guide Section 106 project-level review of the Construction and Operation Plans (COP) for six commercial wind energy lease areas (OCS-A 0537, 0538, 0539, 0541, 0542, and 0544) in the New York Bight (NY Bight). This Section 106 summary (Summary) is included as an appendix to the Programmatic Environmental Impact Statement (PEIS) being prepared in compliance with the National Environmental Policy Act (NEPA).

This is the first time that BOEM is considering the development of a Programmatic Agreement for a grouping of lease areas after lease issuance and before submittal of COPs, but it builds from other efforts BOEM has made to identify programmatic solutions for meeting the agency's obligations under Section 106. BOEM has already implemented programmatic agreements pursuant to 36 Code of Federal Regulations (CFR) 800.14(b) to fulfill its obligations under Section 106 of the NHPA for renewable energy activities on the Outer Continental Shelf (OCS) offshore New York and New Jersey. These agreements have been developed for two primary reasons: first, BOEM's decisions to issue leases and approve plans (e.g. Site Assessment Plans [SAPs], COPs, or General Activity Plans [GAPs]) are complex and involve multiple stages of decision-making and multiple undertakings; and second, BOEM will not have the results of archaeological surveys prior to the issuance of leases or grants and, as such, will be conducting historic property identification and evaluation efforts in phases (36 CFR 800.4(b)(2)). The *Programmatic Agreement Among The U.S. Department of the Interior, Bureau of Ocean Energy Management, The State Historic Preservation Officers of New Jersey and New York, The Shinnecock Indian Nation, and The Advisory Council on Historic Preservation Regarding Review of Outer Continental Shelf Renewable Energy Activities Offshore New Jersey and New York Under Section 106 of the National Historic Preservation Act* (NJ-NY PA) was executed June 3, 2016¹ by BOEM, the State Historic Preservation Officers (SHPOs) of New York and New Jersey, and the Advisory Council on Historic Preservation (ACHP). This agreement provides for Section 106 consultation to continue through BOEM's decision-making process and allows for a phased identification and evaluation of historic properties (36 CFR 800.4(b)(2)).

The current programmatic review of the six NY Bight lease areas seeks to compile baseline information, where feasible, and identify key concepts to incorporate into a standardized process that will guide each of the six project-level reviews. By capturing the results in this Summary and a supplemental

¹ <https://www.boem.gov/sites/default/files/renewable-energy-program/State-Activities/HP/NY-NJ-Programmatic-Agreement-Executed.pdf>

programmatic agreement for NY Bight, BOEM seeks to achieve greater consistency across the six lease areas while reducing the consultation burden for consulting Tribes, SHPOs, ACHP, and other parties.

I.1.2 Consultation with Tribes and Consulting Parties and Public Involvement

On July 15, 2022, BOEM contacted representatives of federally recognized Tribes, other federal agencies, state and local governments, preservation organizations, lessees of the six NY Bight lease areas, and other potentially interested consulting parties to determine their interest in participating as consulting parties. In the course of consultation activities, BOEM has identified additional organizations or agencies that may have an interest in the effects of offshore wind development on historic properties and has continued to invite such parties to participate in the programmatic Section 106 review. Consulting parties for the NHPA Section 106 Consultation of the NY Bight PEIS as of December 1, 2023, are listed in Table I-1. BOEM will continue consulting with federally recognized Tribes, New Jersey SHPO, New York SHPO, ACHP, and other consulting parties regarding the project-level review procedures and the development of programmatic avoidance, minimization, mitigation, and monitoring (AMMM) measures that could be adopted at the individual COP NEPA-Section 106 review stage to resolve adverse effects on historic properties.

Table I-1. Participating Section 106 consulting parties for the NY Bight

Organization Type	Participating Consulting Parties
Federally Recognized Tribe	Absentee-Shawnee Tribe of Indians of Oklahoma
Federally Recognized Tribe	Delaware Tribe of Indians
Federally Recognized Tribe	Eastern Shawnee Tribe of Oklahoma
Federally Recognized Tribe	Mashantucket (Western) Pequot Tribal Nation
Federally Recognized Tribe	Mashpee Wampanoag Tribe
Federally Recognized Tribe	Mohegan Tribe of Connecticut
Federally Recognized Tribe	Stockbridge-Munsee Community Band of Mohican Indians
Federally Recognized Tribe	The Delaware Nation
Federally Recognized Tribe	The Narragansett Indian Tribe
Federally Recognized Tribe	The Shinnecock Indian Nation
Federally Recognized Tribe	Wampanoag Tribe of Gay Head (Aquinnah)
Federal Government	U.S. Army Corps of Engineers
Federal Government	U.S. Advisory Council on Historic Preservation
Federal Government	U.S. Bureau of Safety and Environmental Enforcement
Federal Government	U.S. Environmental Protection Agency
Federal Government	U.S. National Park Service
Lessee	Atlantic Shores Offshore Wind Bight (OCS-A 0541)
Lessee	Attentive Energy (OCS-A 0538)
Lessee	Bluepoint Wind (OCS-A 0537)
Lessee	Community Offshore Wind (OCS-A 0539)
Lessee	Invenergy (OCS-A 0542)
Lessee	Vineyard Mid-Atlantic Offshore Wind (OCS-A 0544)
Local Government	Atlantic County
Local Government	Avon-by-the-Sea Borough
Local Government	Borough of Beach Haven

Organization Type	Participating Consulting Parties
Local Government	Borough of Highlands
Local Government	Borough of Point Pleasant Beach
Local Government	Borough of Sea Bright
Local Government	Borough of Seaside Park
Local Government	Borough of Spring Lake
Local Government	Cape May County
Local Government	City of Absecon
Local Government	City of Asbury Park
Local Government	City of Hoboken
Local Government	City of North Wildwood
Local Government	Monmouth County
Local Government	Monmouth County Park System
Local Government	Nassau County
Local Government	Suffolk County
Local Government	Town of Babylon
Local Government	Town of Islip
Local Government	Town of Oyster Bay
Local Government	Township of Brick
Local Government	Township of Hamilton
Local Government	Township of Middletown
Local Government	Township of Stafford
Local Government	Village of Bellport
Local Government	Village of Patchogue
Other Potentially Interested Parties	Green-Wood Cemetery
Other Potentially Interested Parties	Hempstead Harbor Protection Committee
Other Potentially Interested Parties	Point O' Woods Association
Preservation Organization	Bay Shore Historical Society
Preservation Organization	Greater Cape May Historical Society
Preservation Organization	Historic Districts Council
Preservation Organization	Historical Society of Highlands
Preservation Organization	Ocean City Historical Museum
Preservation Organization	Preservation Alliance of Spring Lake
Preservation Organization	Romer Shoal Light
Preservation Organization	Save Long Island Beach Inc.
Preservation Organization	The Noyes Museum of Art
Preservation Organization	West Bank Lighthouse
State Government	New Jersey State Museum
State Government	New York State Parks, Recreation & Historic Preservation, Long Island State Parks Region 9
State Government	New York State Parks, Recreation and Historic Preservation
State Government (SHPO)	New Jersey Department of Environmental Protection, Historic Preservation Office
State Government (SHPO)	New York State Historic Preservation Office
State Recognized Tribe	Lenape Indian Tribe of Delaware

BOEM conducted Section 106 early coordination meetings with ACHP on September 7, 2022, and with the New Jersey and New York SHPOs and ACHP on September 21, 2022 and January 10, 2023. BOEM conducted a Section 106 consultation meeting with consulting parties on March 13, 2023, to introduce the objectives for the NY Bight programmatic Section 106 review and solicit input on the development of the Programmatic Agreement. BOEM conducted a second Section 106 consultation meeting on August 3, 2023, to present an introduction to BOEM's analysis of impacts on scenic and visual resources including a preview of the development of photo simulations of development scenarios for the NY Bight lease areas and to provide an overview of BOEM's progress on the development of the Programmatic Agreement.

I.1.3 Programmatic Area of Potential Effect

BOEM has developed a NY Bight programmatic area of potential effects (Programmatic APE) in accordance with implementing regulations at 36 CFR part 800 (Protection of Historic Properties). In 36 CFR 800.16(d), the APE is defined as "the geographic area or areas within which an undertaking may directly or indirectly cause alteration in the character or use of historic properties, if any such properties exist."

BOEM (2020) further defines the APE as the following and pursuant to the Section 106 regulations definition of an APE (36 CFR 800.16(d)):

- The depth and breadth of the seabed potentially impacted by any bottom-disturbing activities;
- The depth and breadth of terrestrial areas potentially impacted by any ground-disturbing activities;
- The viewshed from which renewable energy structures, whether located offshore or onshore, would be visible;
- Any temporary or permanent construction or staging areas, both onshore and offshore.

BOEM has formed the Programmatic APE to facilitate the preliminary identification of historic properties listed in the National Register of Historic Places (NRHP) subject to potential effects from anticipated offshore wind development in the NY Bight area; initiate consultations with consulting parties; and analyze the adoption of potential AMMM measures for avoiding or reducing adverse effects on historic properties. Specific information, such as cable routes, landfall locations, and onshore transmission routes are not available at this time. Based on general information obtained from the lessees and other consulting parties, BOEM has defined a conservative Programmatic APE meant to encapsulate future COP-specific APEs when that information becomes available. BOEM will require each lessee to complete the requisite cultural resource technical studies per BOEM (2020) historic property identification guidelines including, but not limited to, the preliminary delineation of an APE per the COP Project Design Envelope (PDE), completion of associated cultural resource and historic property identification efforts, assessment of potential effects, and development of potential AMMM measures for identified historic properties. BOEM will then delineate the COP APE and assess the specific impacts for the PDEs of each NY Bight lease area in COP-specific NEPA and Section 106 reviews and consultations.

For the purposes of this analysis, cultural resources are divided into several types and subtypes as defined in Table I-2. Discussion of the cultural resource types in this section is further organized by their known or potential presence in the Programmatic APE.

Table I-2. Definitions of cultural resource types used in the analysis

Term	Definition
Ancient submerged landform feature	<i>Ancient submerged landform features</i> are landforms that have the potential to contain Native American archaeological resources inundated and buried as sea levels rose at the end of the last Ice Age. Additionally, Tribal Nations in the region may consider ancient submerged landform features to be independent or contributing elements to previously subaerial TCPs representing places where their ancestors once lived.
Cultural landscape	The National Park Service (2006) defines a <i>cultural landscape</i> as a “geographic area, including both cultural and natural resources and the wildlife or domestic animals therein, associated with a historic event, activity, or person, or exhibiting other cultural or aesthetic values.” In this analysis, cultural landscapes are considered a type of historic aboveground resource.
Cultural resource	The phrase <i>cultural resource</i> refers to a physical resource valued by a group of people such as an archaeological resource, building, structure, object, district, landscape, or TCP. Cultural resources can date to the pre-Contact or post-Contact periods (i.e., respectively, the time prior to written records and thereafter) and may be listed on national, state, or local historic registers or be identified as important to a particular group during consultation, including any of those with cultural or religious significance to Tribal Nations. Cultural resources in this analysis are divided into several types and subtypes: marine cultural resources, terrestrial archaeological resources, historic aboveground resources, and TCPs.
Marine archaeological resource	<i>Marine archaeological resources</i> are the physical remnants of past human activity that occurred at least 50 years ago and are submerged underwater. They may date to the pre-Contact period (e.g., those inundated and buried as sea levels rose at the end of the last Ice Age) or post-Contact period (e.g., shipwrecks, downed aircraft, and related debris fields).
Historic aboveground resource	<i>Historic aboveground resources</i> are subaerial features or structures of cultural significance at least 50 years in age and include those that date to the pre-Contact or post-Contact periods. Example types that are or may have historic aboveground components include standing buildings, bridges, dams, historic districts, cultural landscapes, and TCPs.
Historic district	A <i>historic district</i> is an area composed of a collection of either or both archaeological and aboveground cultural resources.
Historic property	As defined in 36 CFR 800.16(l)(1), the phrase <i>historic property</i> refers to any “prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the [NRHP] maintained by the Secretary of the Interior. The term includes artifacts, records, and remains that are related to and located within such properties.” <i>Historic property</i> also includes NHLs as well as properties of traditional religious and cultural importance to Native American Tribal Nations that meet NRHP criteria. The NRHP recognizes historic properties that are significant at the national, state, and local levels that possess integrity of location, design, setting, materials, workmanship, feeling, and association and that meet any of Criterion A through D. Criterion A covers a historic property that is associated

Term	Definition
	with events that are significant to the broad patterns of our history. Criterion B covers a historic property associated with the lives of persons significant to our past. Criterion C covers a historic property that embodies distinctive characteristics of a type, period, or method of construction; represents the work of a master or possesses high artistic values; or represents a significant and distinguishable entity whose components may lack individual distinction. Criterion D covers a historic property that yields, or may be likely to yield, information important to prehistory or history.
Terrestrial archaeological resource	<i>Terrestrial archaeological resources</i> are the physical remnants of past human activity that occurred at least 50 years ago and are located on or within lands not submerged underwater. They may date to the pre-Contact period (i.e., have associations with Native American populations dating to before European colonization of the Americas) or post-Contact period (i.e., have associations with African American, European American, or Native American populations dating to after European colonization of the Americas).
Traditional cultural property	National Register Bulletin 38 (Parker and King 1990, revised 1992 and 1998) defines a <i>traditional cultural property</i> as a “[historic property] that is eligible for inclusion in the National Register because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community’s history, and (b) are important in maintaining the continuing cultural identity of the community.” TCPs may be locations, places, or cultural landscapes and have either or both archaeological and aboveground elements.

NHL = National Historic Landmark; TCP = traditional cultural property.

I.1.3.1 Marine Portion of the Programmatic APE

The marine portion of the Programmatic APE (Programmatic Marine APE) includes the six NY Bight lease areas potentially affected by seabed-disturbing activities. When delineating the marine portion of the APE, BOEM considers the potential for the construction of offshore project components to physically disturb marine archaeological resources or ancient submerged landforms (ASLFs), either of which may qualify as historic properties. Delineating the area within which such effects may occur requires consideration of the locations where turbines or substations will be anchored to the seafloor within the lease area, as well as the corridors within which the interarray cables, transmission cables, and other project components may disturb the seabed between the lease area and coastal landfall. Other project activities that have the potential to physically disturb marine archaeological resources, such as interarray cables or use of anchors by vessels conducting surveys or supporting construction, may warrant expansion of the Marine APE.

The programmatic review of the NY Bight lease areas does not include delineation of a marine portion of the Programmatic APE due to the lack of complete project-specific design or layouts. In particular, the Programmatic APE has not considered other offshore areas, aside from the six NY Bight lease areas, potentially physically affected by seabed-disturbing activities (i.e., other marine areas in which temporary or permanent construction or staging areas are proposed to occur, such as offshore export cable route corridors and horizontal directional drilling [HDD] locations, which may have physical

impacts on historic properties). Therefore, the potential for adverse effects will be considered based on hypothetical project activities that are typical of offshore wind renewable energy projects.

I.1.3.2 Terrestrial Portion of the Programmatic APE

When delineating the terrestrial portion of the APE, BOEM considers the potential for construction of onshore project components to physically disturb archaeological historic properties during ground-disturbing activities. Delineating the area within which such effects may occur requires locational information for where the subsea cables will make landfall, the location of terrestrial substations/converter stations, and the proposed routes for transmission, none of which are currently available. In addition to the location for such project components, the terrestrial APE needs to consider the maximum horizontal area and maximum vertical depth of ground disturbance at those locations.

The programmatic review of the NY Bight lease areas does not include delineation of a terrestrial portion of the Programmatic APE due to the lack of project-specific information about onshore areas potentially physically affected by ground-disturbing activities. Instead, the potential for adverse effects will be considered based on hypothetical project activities that are typical of offshore wind renewable energy projects.

I.1.3.3 Visual Portion of the Programmatic APE

When delineating the visual portion of the APE, BOEM considers the potential for offshore project components to cause adverse effects on onshore aboveground historic properties in those instances where a maritime view is a character-defining feature of the historic property and the introduction of the offshore wind facilities would reduce the integrity of that view. Delineating the area within which such effects may occur requires consideration of the viewshed modeling that is conducted according to BOEM's guidance for Visual Impacts Analysis (VIA).

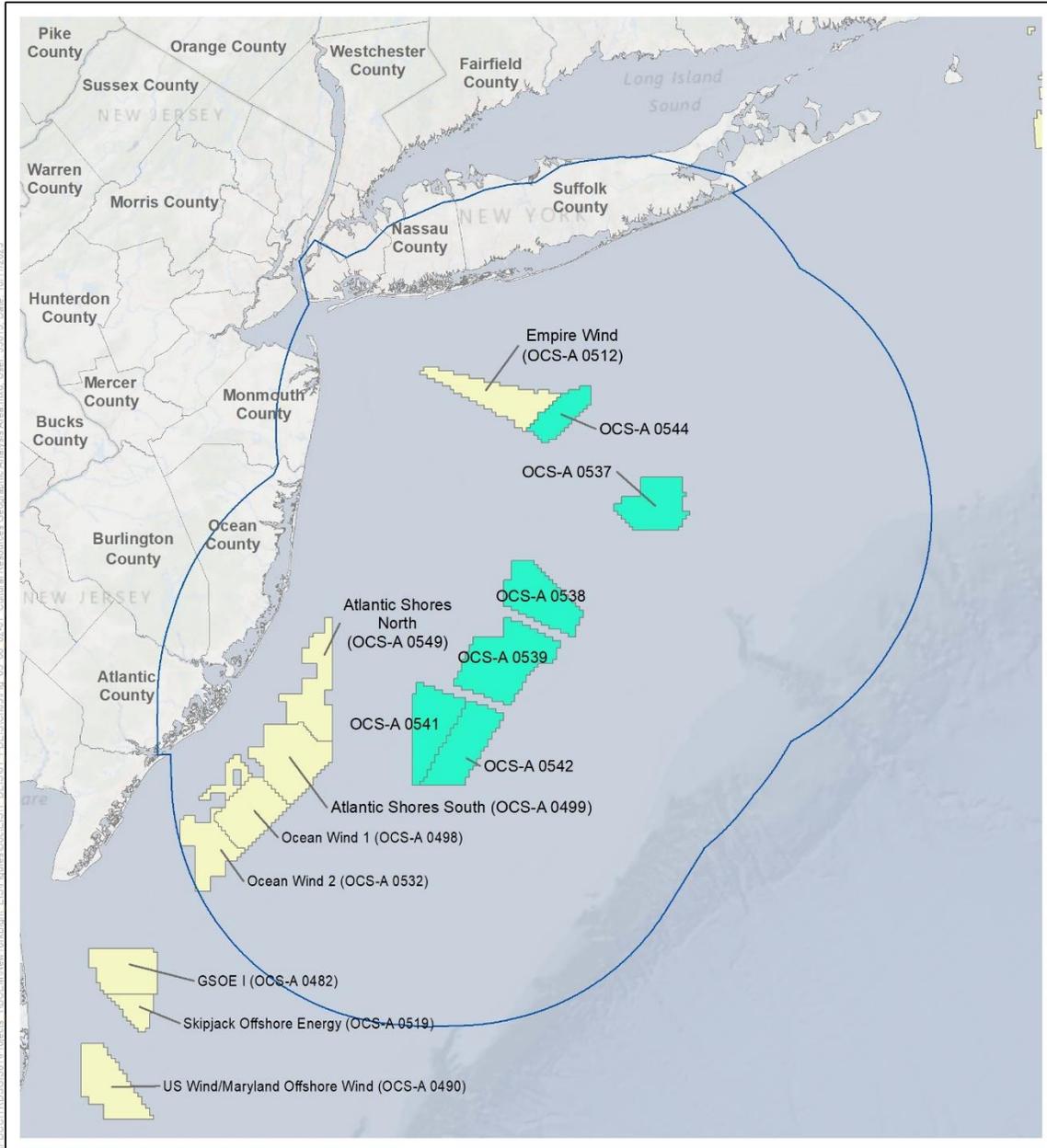
For the programmatic review of the six lease areas in the NY Bight, BOEM has established a general study area for the visual analysis based on preliminary viewshed modeling (see Figure I-1). In general, the study area considers the visibility of a wind turbine generator (WTG) from the water level to the tip of an upright rotor blade at a height of 1,312 feet (400 meters), which is the maximum height of turbines considered in the PEIS Representative Project Design Envelope (RPDE) (refer to Chapter 2, Table 2-2 of the PEIS). This can be broken down to consider visibility from ground level or from an elevated viewpoint (such as the lookout room of a lighthouse or upper floors of a multi-story hotel). Such modeling can also consider visibility of the safety lights at the mid-level of the turbine, the hub of the turbine blades, or even the tip of the blades.

Geographic information system analysis was used to refine the study area and define a programmatic visual APE methodically through a series of steps. Once the study area was established (maximum theoretical distance WTGs could be visible), the analysis then accounted for how distance and Earth curvature impede visibility as the distance increases between the viewer and WTGs. This area was refined through computer modeling with the addition of a land cover vegetation layer to account for large areas of tall vegetation that limit projected visibility to a NY Bight project. Data layers for building

footprints and building heights were then added to account for existing development projected to screen views to the NY Bight lease areas. Locations with unobstructed views of offshore elements then constituted the offshore visual APE (see Figure I-2).

The visual portion of the APE also includes consideration of the potential for onshore activities to include project components that cause adverse effects on onshore aboveground historic properties where introduction of the modern infrastructure would be incompatible with the historic character of the affected historic property. Such components may include cable landing locations, connection points where underground transmission lines connect aboveground, substations, switching stations, and overhead transmission line routes.

For the programmatic review of the six lease areas in the NY Bight there is not enough detail known about where the onshore project components will be located, so the onshore visual portion of the Programmatic APE has not been delineated. Consultation regarding the potential for visual adverse effects on onshore aboveground historic properties will focus on the types of impacts caused by onshore facilities that typically support offshore wind developments, rather than specific effects to specific historic properties.



- Visual Impacts Study Area for Offshore Development
- New York Bight Lease Areas
- Other BOEM Lease Areas

Source: BOEM 2022, ANL 2023.

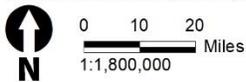
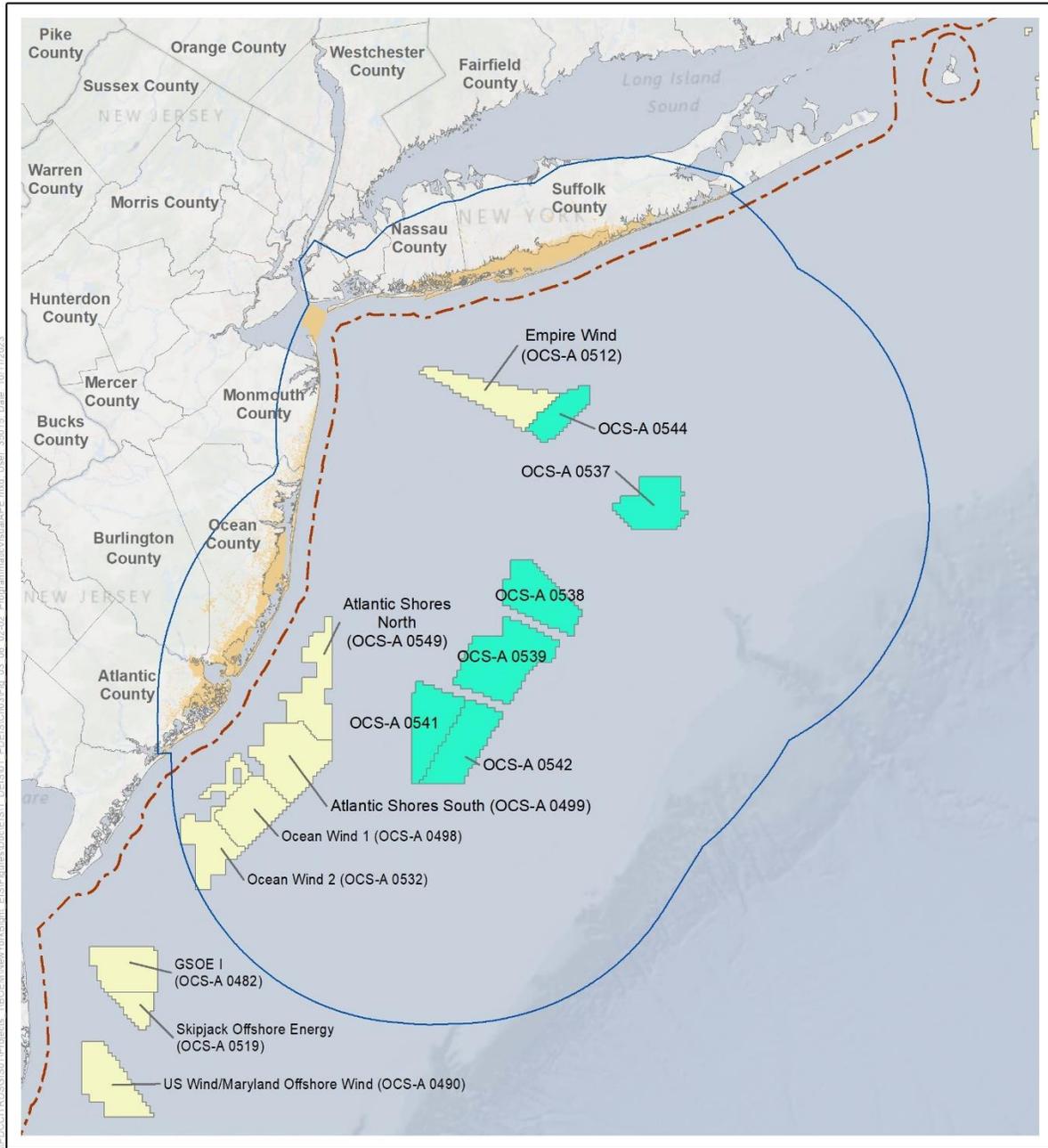


Figure I-1. Offshore visual impacts study area



- Visual Impacts Study Area for Offshore Development
- Programmatic Visual APE
- New York Bight Lease Areas
- Other BOEM Lease Areas
- State Seaward Boundary

Source: BOEM 2022, ANL 2023.

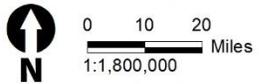


Figure I-2. Programmatic offshore visual APE

I.2 Historic Property Identification

I.2.1 Background Research

Background research and development of cultural and historic contexts were conducted by BOEM for the 2021 NY Bight Environmental Assessment, which assessed the potential impacts of the issuance of leases within the NY Bight wind energy areas (WEAs) and granting of easements, rights-of-way, and rights-of-use (BOEM 2021). These contexts have been incorporated into the PEIS and this Summary.

Table I-3 summarizes the cultural context of the Programmatic APE in New Jersey and New York (BOEM 2021).

Table I-3. Cultural context for the New York Bight cultural resources geographic analysis area

Period	Date	Description
Pre-Contact (Paleoindian)	15,000–10,000 BP	Semi-nomadic hunting and gathering populations. Use of broad spectrum of plants and animals for subsistence. Characteristic fluted projectile points used to hunt now-extinct large megafauna (mammoth and mastodon). Landscape of spruce forest. Sea levels about 330 feet (100 meters) below present-day levels. Sea level rise occurred with episodes of melting of the North American ice sheet. Deeply incised drainages along the OCS would have been estuarine environments utilized as a source of food and fresh water and habitation by Paleoindian populations. Flooding of these drainages allowed for sediment flows to bury possible Paleoindian sites.
Pre-Contact (Archaic)	10,000–3,000 BP	Period subdivided into Early (10,000–8,000 BP), Middle (8,000–6,000 BP), and Late (6,000–3,000 BP) phases. Gradual shift to modern environmental conditions with overall warmer temperatures and less precipitation relative to previous period. Spruce and pine forests gradually transition to mixed deciduous forest (hickory, oak, chestnut). Sea level had risen to about 75 feet (23 meters) below present-day levels by the Early Archaic and stabilized around 1.5–6.5 feet (0.5–2 meters) below present-day levels by the Late Archaic. Mobility of hunting and gathering populations decreased as environmental conditions stabilized. Population density increased and seasonal settlements were common with introduction of a broad range of seasonal food sources, including shellfish and other riverine and marine resources. Diverse types of stone tools used including ground stone vessels.
Pre-Contact (Woodland)	3,000–400 BP	Period subdivided into Early (3,000–2,000 BP), Middle (2,000–1,000 BP), and Late (1,000–400 BP) phases. Cooler and wetter climate in Early Woodland, then warming and drying trend begins in Middle Woodland. Mixed deciduous forests persist. Terrestrial foraging and intensive exploitation of marine food sources. Increasing sedentism with use of agriculture. Use of ceramic pots for cooking and storage. Triangular projectile points with introduction of bow and arrow by Late Woodland.
Post-Contact	17th Century AD	Native Americans settle in sedentary villages supported by agriculture and seasonal camps targeting large and small game, plants, riverine, and marine resources. Similar technologies to Late Woodland but increasing use of European trade goods. Interactions occur among Native Americans and European colonists. Dutch, Swedish, English colonies established. New Amsterdam colony established on Manhattan Island in 1625. New Sweden colony established in New Jersey in 1638. English colonists control the region by 1664.

Period	Date	Description
Post-Contact	18th Century AD	Shipbuilding and fish, tobacco, and fur trade industries thrive. First lighthouses on the Atlantic Seaboard are completed, including Sandy Hook in 1764. Ongoing conflicts between English and French colonists and their Native American allies. During the American Revolutionary War, many engagements between British and Continental forces took place in New Jersey and New York. Statehood granted to New Jersey in 1787 and to New York in 1788.
Post-Contact	19th Century AD	Manufacturing drives the economy during the Industrial Revolution. Cities grow as electricity is introduced and transportation improved through growth of public roadways, railroads, and canals. Iron and zinc mines become leading industries in New Jersey. New York City is a financial center during the American Civil War and remains a major ocean port and immigration hub. Ellis Island opened 1892.
Post-Contact	20th Century AD	African American populations increase with post-Civil War northward migrations. New Jersey and New York shipyards, factories, and refineries support military efforts in World War I and World War II. Many forts and training camps are active, and Port of New York used for troop deployments. Rail connections with larger urban areas and later improved roadways for automobiles led to growth of seaside communities. Urban decay in 1950s resulting from suburban growth.

Source: BOEM 2012; BOEM 2021.

AD = Anno Domini; BP = before present.

I.2.2 Historic Properties in the Marine Portion of the Programmatic APE

Marine cultural resources in the region include pre- and post-Contact marine archaeological resources and ASLFs on the OCS (BOEM 2012). Based on known historic and recent maritime activity in the region, the NY Bight lease areas have a high probability for containing shipwrecks, downed aircraft, and related debris fields that may be subject to potential impacts by seabed-disturbing activities from offshore wind development in the NY Bight area (BOEM 2012, 2021). These resources include both known and potential shipwrecks and related debris fields from the post-Contact period or last 50 years. ASLFs also have a high probability of occurrence on the OCS (BOEM 2012).

BOEM does not have enough information at this time about specific marine archaeological resources or ASLFs that may be present in the Programmatic Marine APE. BOEM will require each NY Bight lessee to conduct identification efforts for marine archaeological resources and ASLFs and present findings in a Marine Archaeological Resources Assessment (MARA) report prepared in partial fulfillment of a sufficient COP. This should include incorporation of information about marine cultural resources that have been identified as historic properties in the course of NEPA and Section 106 review of other nearby COPs (e.g., Empire Wind Offshore Wind [OCS-A 0512]), as the APE for those projects may overlap with the Programmatic APE for the NY Bight lease areas.

I.2.3 Historic Properties in the Terrestrial Portion of the Programmatic APE

The programmatic review of the NY Bight lease areas does not include delineation of a terrestrial portion of the Programmatic APE due to the lack of project-specific information about onshore areas potentially physically affected by ground-disturbing activities, and thus background research performed at this stage is unable to identify specific terrestrial archaeological resources for the programmatic review. BOEM will require each NY Bight lessee to conduct identification efforts for terrestrial

archaeological resources and present findings in a Terrestrial Archaeological Resources Assessment (TARA) report prepared in partial fulfillment of a sufficient COP. This should include incorporation of information about terrestrial archaeological resources that have been identified as historic properties in the course of NEPA and Section 106 review of other lease areas that have already progressed into or completed NEPA and Section 106 review for their COPs, as the APE for those projects may overlap with the Programmatic APE for the NY Bight lease areas.

I.2.4 Historic Properties in the Visual Portion of the Programmatic APE

The viewshed of hypothetical offshore renewable energy structures constructed within the six NY Bight lease areas encompasses historically developed and densely occupied coastal areas of New Jersey and New York. As such, a large number of historic aboveground resources are anticipated to be located in the Programmatic Visual APE, of which a proportion are anticipated to be historic properties or potential historic properties listed or eligible for listing in the NRHP. These aboveground historic properties may include buildings, historic districts, cultural landscapes, and traditional cultural properties (TCPs). BOEM will require each NY Bight lessee to conduct identification efforts for historic aboveground resources and present findings in a Historic Resource Visual Effects Assessment (HRVEA) report prepared in partial fulfillment of a sufficient COP. BOEM will fully analyze impacts on such resources in COP-specific NEPA and Section 106 reviews and consultations.

I.3 Assessing Effects on Historic Properties

The effects of the NY Bight projects on historic properties cannot be fully analyzed at this time, as the layout and design details for each project are not yet known. However, in the course of conducting the analysis for the PEIS, and through input gained during the Section 106 consultation meetings, BOEM has been able to draw certain assessments and recommendations about types of effects that are likely to occur. The following section discusses the thresholds and methods for considering effects during the COP-level reviews, and is intended to create consistency across the six projects, which in turn will support more focused and meaningful project-level Section 106 consultation.

I.3.1 Criteria of Adverse Effect

The Criteria of Adverse Effect under NHPA Section 106 (36 CFR 800.5(a)(1)) states that an undertaking has an adverse effect on a historic property if the following occurs: “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....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.” According to regulation, adverse effects on historic properties include, but are not limited to (36 CFR 800.5(a)(2)):

- 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 of the Interior'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.

I.3.2 Marine Cultural Resources

Marine cultural resources in the region include pre- and post-Contact marine archaeological resources and ASLFs on the OCS (BOEM 2012). Based on known historic and recent maritime activity in the region, the NY Bight lease areas, composing the knowable Programmatic Marine APE, have a high probability for containing shipwrecks, downed aircraft, and related debris fields that may be subject to potential impacts by seabed-disturbing activities from offshore wind development in the NY Bight area (BOEM 2012, 2021). However, as mentioned in Section 3.6.2, *Cultural Resources*, the totality of cultural resources and historic properties in the Programmatic APE is not knowable at this time, and, therefore, while the background research performed at this stage has informed development of the cultural context and general sensitivity for marine cultural resources and ASLFs, BOEM does not have enough information to identify any specific marine archaeological resources or ASLFs that may be present in the Programmatic Marine APE.

Marine cultural resources such as shipwrecks and downed aircraft may be individually eligible for listing in the NRHP under Criterion A, B, or D. ASLFs may be individually eligible for listing in the NRHP or considered contributing elements to a TCP eligible for listing in the NRHP. ASLFs in the marine APE are considered archaeologically sensitive. If undiscovered archaeological resources are present within the identified ASLFs and they retain sufficient integrity, these resources could be eligible for listing in the NRHP under Criterion D, which is a resource that yields or may be likely to yield information important in prehistory or history. Furthermore, ASLFs are considered by Tribal Nations in the region to be culturally significant resources as the lands where their ancestors lived and as locations where events described in tribal histories occurred prior to inundation. BOEM recognizes these landforms could be eligible for listing in the NRHP under Criterion A.

The severity of project effects would depend on the extent to which integral or significant components of affected marine archaeological resources or ASLFs are disturbed, damaged, or destroyed, resulting in the loss of contributing elements to the historic property's eligibility for listing in the NRHP.

I.3.3 Terrestrial Archaeological Resources

The severity of effects would depend on the extent to which integral or significant components of affected archaeological resources are disturbed, damaged, or destroyed, resulting in the loss of contributing elements to the historic property's eligibility for listing in the NRHP.

I.3.4 Historic Aboveground Resources

BOEM's delineation of the visual portion of the Programmatic APE utilized a conservative viewshed from which hypothetical offshore wind structures in all six NY Bight lease areas measuring 1,312 feet (400 meters) in height would be visible (1,312 feet [400 meters] is the maximum height of turbines considered in the PEIS RPDE [refer to Chapter 2, Table 2-2]). As the developer for each lease area finalizes the layout within the lease area and the specifications for their offshore wind structures, the lease-specific preliminary APE can be delineated using the same methods that were used for the Programmatic APE. It is reasonable to expect that the viewsheds for each of the lease areas will be different from the hypothetical scenario analyzed in the programmatic review. The development of those APEs and the analysis that follows will be more credible in general, and consistent between lease areas, by using the methods developed during the programmatic review.

Assessing the effect of offshore project components generally involves the following steps:

1. Briefly summarize the historical significance of the historic property.
2. Characterize the views that comprise the character-defining views as they relate directly to the significance of the historic property. Include all character-defining views, both maritime and otherwise.
3. Describe what can be identified from Google Earth or Street View about other features in the vicinity that currently affect views from the historic property toward the character-defining maritime views (such as tall buildings between the property and the ocean, or if the property is on elevated ground).
4. Explain what can be extrapolated from the VIA performed for scenic resources, focusing on the nearest key observation point (KOP) and associated visual simulations.
5. State how all of the above would alter the historical integrity of the character-defining views, discussing the aspects of integrity related to feeling and setting relative to how one experiences the maritime character-defining views, and the aspect of association relative to how one understands the functional role of the ocean in the property's significance.
6. Conclude with a recommended finding of effect.

I.3.4.1 NY Bight Programmatic Visual Impact Analysis Key Observation Points

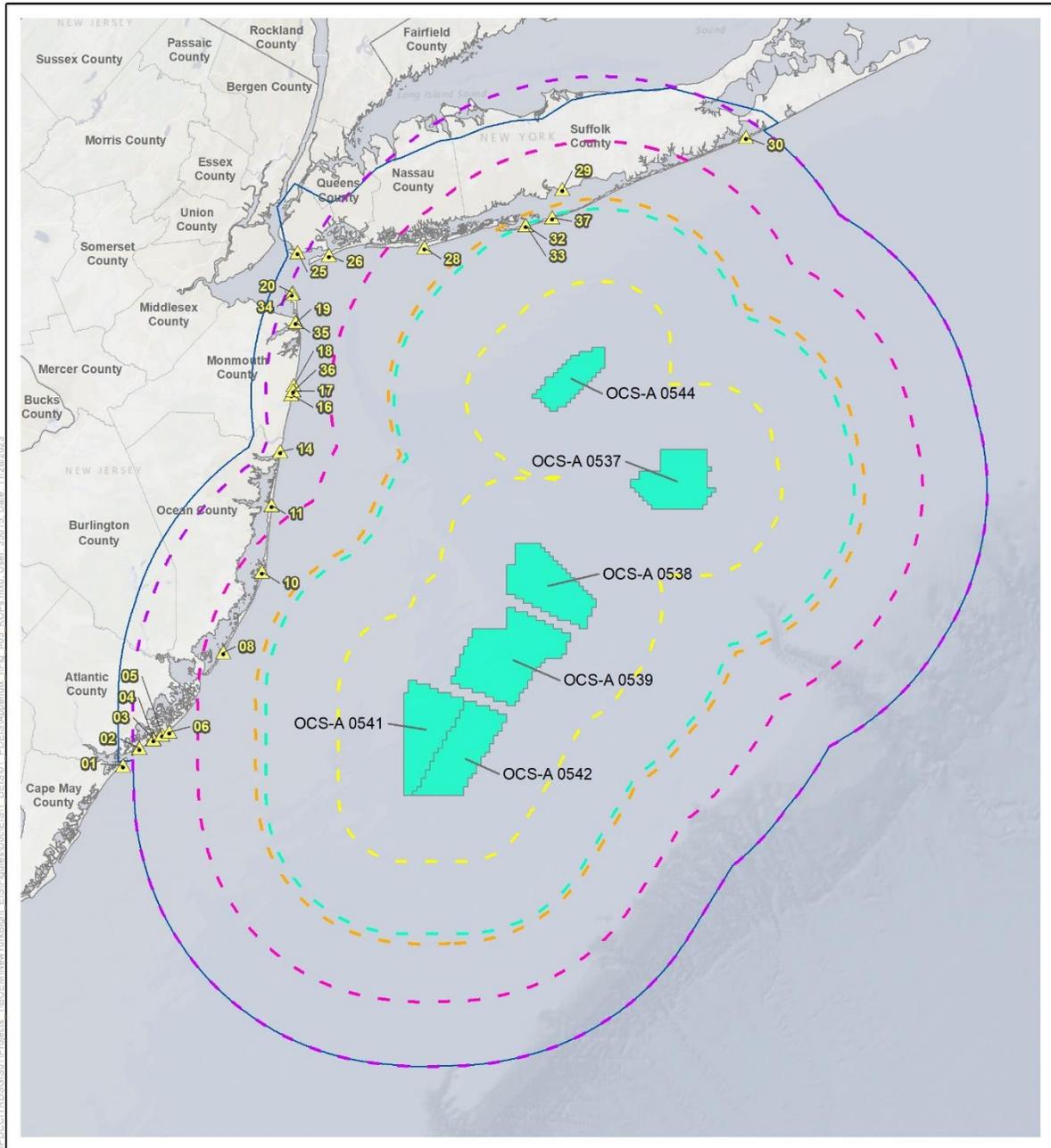
BOEM conducted an assessment of seascape, landscape, and visual impacts for the NY Bight lease areas, which is presented in Appendix H, *Seascape, Landscape, and Visual Impact Assessment*, and includes information on KOPs in the geographic analysis area and viewshed maps that depict what onshore areas will have visibility of the WTGs in the NY Bight lease areas. Visual simulations of the NY Bight projects and other ongoing and planned offshore wind projects in the geographic analysis area, produced by Truescape under contract to BOEM, are posted to BOEM's website for NY Bight:

<https://www.boem.gov/renewable-energy/state-activities/new-york-bight>.

Designated KOP distances to the NY Bight projects' WTG and offshore substation (OSS) array would range from:

- 44.7 miles (71.9 kilometers) from KOP-30 Shinnecock Inlet near the northern extent of the study area;
- 24.1 miles (38.8 kilometers) from KOP-37 Point O' Woods, the closest New York KOP to the WTG array;
- 31.2 miles (50.2 kilometers) from KOP-09 Barnegat Jetty, the closest New Jersey KOP to the WTG array; and
- 49.1 miles (79.0 kilometers) from KOP-01 Ocean City Music Hall at the southern extent of the study area.

Figure I-3 illustrates the location of the KOPs relative to the visibility distances for the tower base (yellow), OSS (blue), mid-tower light (orange), hub, nacelle, and aviation lights (pink), and rotor tip blade (purple) for 1,312-foot (400-meter) WTGs. A total of 40 KOPs were selected for analysis as part of NY Bight's programmatic VIA. Of these, 26 locations were selected for their usefulness to the Section 106 programmatic review and consultation; these are the KOPs shown on Figure I-3. Table I-4 provides information about the 26 KOPs that represent historic properties or other locations relevant to the Section 106 programmatic review.



- Scenic and Visual Resources Geographic Analysis Area
 - Key Observation Point
 - New York Bight Lease Areas
- Visibility Distance to:**
- 11.5 miles (Yellow Tower Base)
 - 24.1 miles (Offshore Substation Platform)
 - 26.0 miles (Mid-tower Lights)
 - 36.1 miles (Hub, Nacelle, and Aviation Lights)
 - 47.4 miles (Rotor Blade Tip)

Source: BOEM 2022, ANL 2023.

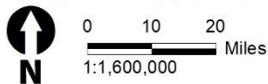


Figure I-3. Key observation points for NY Bight programmatic visual impact analysis

Table I-4. Key observation points that are also historic properties

KOP No.	Name	Rationale for Inclusion	Distance (miles) to nearest WTG/OSS	Simulation?
1	Ocean City Music Hall	Potential historic property	49.1	No
2	Lucy the Margate Elephant NHL	NHL with maritime setting/ocean view	46.3	Yes
3	Stafford Historic District/John Stafford Hall - Boardwalk	Historic property	43.8	No
4	Stafford Historic District/John Stafford Beach Entrance	Historic property	43.8	Yes
5	Atlantic City Convention Hall (Jim Whelan Hall) - Balcony	NHL with maritime setting/ocean view	42.3	Yes
6	Atlantic City Boardwalk - Ocean Casino Boardwalk View	Potential historic property	41.0	No
8	Beach Haven Historic District (Day and Night)	Historic property	32.6	Yes
10	Barnegat Lighthouse	Historic property	32.3	Yes
11	US Life Saving Station #14	Historic property	39.3	No
14	Bayhead Historic District	Historic property	44.5	No
16	Ocean Grove Historic District	Historic property	42.9	No
17	Asbury Park Beach and Convention Hall Balcony	Potential historic property	42.6	No
18	Allenhurst Residential Historic District	Historic property	42.5	Yes
19	Navesink Twin Lights NHL	NHL with maritime setting/ocean view	44.0	No
20	Sandy Hook Lighthouse NHL	NHL with maritime setting/ocean view	46.3	No
25	Coney Island Boardwalk	NHL with maritime setting/ocean view	48.8	No
26	Fort Tilden/Jacob Riis Park Historic District	Historic property	43.7	Yes
28	Jones Beach	Historic property	31.4	Yes
29	Rudolph Oyster House	NHL with maritime setting/ocean view	28.4	No
30	Shinnecock Inlet	Near Tribal territory	44.7	Yes
32	Fire Island Lighthouse - Upper Deck	Historic property	24.2	Yes
33	Fire Island Lighthouse - Base	Historic property	24.2	No
34	Sandy Hook Observatory NHL	NHL with maritime setting/ocean view	46.4	No
35	Navesink Light Station - Twin Lights Lighthouse NHL	NHL with maritime setting/ocean view	44.1	Yes
36	Asbury Park Hall	Potential historic property	42.6	Yes
37	Point O' Woods	Potential historic property	24.1	Yes

NHL = National Historic Landmark

Historic property = previously identified as eligible for or listed in the NRHP

Potential historic property = identified by BOEM or a consulting party as the location of a resource that requires further study to determine if it qualifies as an historic property.

I.3.5 Representative Visual Effects Analysis

The objective of a visual effects analysis is to assess how the introduction of offshore development (WTGs, OSSs) would change the relationship between an individual historic property and its maritime views, which could alter several aspects of historical integrity including feeling, setting, and association. It is important to note that not every historic property that has a view of the ocean necessarily relies on that maritime view to define its historical integrity. Each lessee will prepare project-level documentation of historic properties located within the preliminary APE for their lease, and must include a discussion of whether the maritime view is a character-defining feature of each NRHP eligible or listed historic property.

The effects of the project, and of cumulative effects of multiple projects, will need to be individually assessed for each historic property, based on its unique historical significance, relationship with the maritime view, and interpretation of the visual simulations for the nearest KOP. The programmatic consideration of potential effects is based on two WTG heights corresponding to the maximum and minimum heights in the PEIS RPDE: 1,312 feet (400 meters) and 853 feet (260 meters). By evaluating both heights, the analysis discloses the maximum and minimum impacts that may occur as a result of development in the NY Bight.

In general, for each historic property whose historical significance is associated with the maritime setting and that has retained the integrity of its maritime view, if the visual simulation from either that location or a comparable KOP location indicate that the WTGs would be visible, a finding of adverse effect is appropriate. For example, the simulated view of maximum visibility from KOP 03 Stafford Beach Entrance (Figure I-4) shows that the proposed development of 1,312-foot-tall (400-meter-tall) WTGs located 43.8 miles (70.5 kilometers) away would result in imperceptible changes to the maritime view. Historic properties with historically significant maritime views located in proximity to this KOP are unlikely to experience a visual adverse effect.

By contrast, the simulated view from KOP 32 Fire Island Lighthouse (Figure I-5) located 24.2 miles (39 kilometers) away and taken from an elevated view shows that the proposed offshore wind development with WTGs as short as 853 feet (260 meters) would be clearly visible and would degrade the integrity of the maritime setting and views. Historic properties that rely on a maritime view from an elevated vantage point as part of their NRHP eligibility and that are located in proximity to this KOP are likely to experience a visual adverse effect.

These examples illustrate multiple variables that are involved in the analysis of visual adverse effects and the importance of conducting a careful analysis of project specifics against the unique qualities that qualify each historic property for listing in the NRHP.



For on-screen display:
Scale bar to be 4 inches wide
Viewing distance 19.7 inches

1/24/2023 at 12:08 - KOP 3

Figure I-4. KOP 03 Stafford Beach entrance



For on-screen display:
Scale bar to be 4 inches wide
Viewing distance 19.7 inches

3/2/2023 at 8:22 - KOP 32

Figure I-5. KOP 32 Fire Island Lighthouse

BOEM does not anticipate that it will be necessary to prepare visual simulations for each of the historic properties located within each project's visual APE. However, it is unlikely that the visual simulations prepared for the PEIS will be sufficient, as project-specific details such as the height and spacing of the WTGs are likely to differ from the RPDE and the 853-foot (260-meter) and 1,312-foot (400-meter) assumptions used as a basis for creating the PEIS simulations. BOEM will review effects recommendations provided in the COP documents to determine sufficiency, and will consult with federally recognized Tribes, New Jersey SHPO, New York SHPO, ACHP, and other consulting parties regarding BOEM's preliminary findings of effect.

I.4 Programmatic Avoidance, Minimization, Mitigation, and Monitoring Measures

As an outcome of the Section 106 programmatic review of the NY Bight, the Programmatic Agreement for the NY Bight offshore wind activities will include a list of avoidance, minimization, and standard mitigation measures that can be selected in the event that adverse effects to historic properties are identified during project-level review. One or more standard mitigation measures will resolve an adverse effect on a historic property in the event that an adverse effect cannot be avoided.

The types of avoidance measures may include an agreement to completely avoid impacts on known or potential marine cultural resources identified during high-resolution remote sensing surveys. To facilitate complete avoidance of cultural resources may require the relocation of cables or WTGs through micrositing. Avoidance buffer zones will be designated for marine cultural resources (i.e., marine archaeological resources, such as known and potential shipwrecks and associated debris fields; and ASLFs) to ensure that any adverse bottom-disturbing activities do not occur near the cultural resources. In the event the known or potential cultural resource and/or its buffer zones cannot be completely avoided or in the event the cultural resource will be destroyed during construction activities, an archaeological investigation of the resource may be required to further determine appropriate mitigation measures or to completely document the cultural resources prior to the site's disturbance or destruction.

To minimize impacts on marine cultural resources, BOEM may also specify minimization measures that reduce impacts on sites. This may include the use of specific construction techniques, methods, or technologies/equipment that reduce the amount of seafloor impact or adverse effects on a cultural resource.

Implementing a combination of the following measures may avoid visual adverse effects: adjust WTG size, scale, and location to reduce visibility; implement sustainable outdoor lighting prescriptions that reduce impacts on night skies and visibility from coastlines; and place WTGs at distances to where the WTGs are not visible. BOEM will analyze implementation of these measures to determine levels of visual effect. If BOEM determines that adverse effects are present, then BOEM will provide recommended specifications that could feasibly meet the threshold of no visual adverse effect.

Potential programmatic minimization measures for visual effects include the following: use uniform WTG design, speed, height, and rotor diameter to reduce visual contrast and decrease visual clutter; apply a consistent color to the WTGs prior to commercial operation to reduce visual contrast during daytime hours; use uniform spacing of WTGs to decrease visual clutter; and use an aircraft detection lighting system (ADLS) to limit the time in which WTG lights are on and visible from adversely affected properties.

Based on the type of effect and the historic property adversely affected, possible mitigation measures can include the preparation of documentation in accordance with National Park Service guidance (<https://www.nps.gov/subjects/heritagedocumentation/index.htm>); historic preservation–related activity that could extend a historic property’s existence and use following the Secretary of the Interior’s Standards for the Treatment of Historic Properties (<https://www.nps.gov/orgs/1739/secretary-standards-treatment-historic-properties.htm>); education-related deliverables that enhance the public’s understanding of the historic property’s original setting and context (e.g., ethnographic research; website highlighting the local community or historic property’s history; interpretation of heritage collections; historic preservation planning for that particular historic property or the types of historic properties in a municipality; climate change–related activities that would help extend the use of historic properties that are adversely affected such as a climate change resiliency plan).

BOEM has included measures for avoiding or reducing impacts on historic properties in the PEIS as part of the AMMM measures analyzed in Alternative C (refer to PEIS Section 3.6.2 and Appendix G, *Mitigation and Monitoring*, for a description of these measures). The AMMM measures are consistent with similar measures being developed in the NY Bight Programmatic Agreement for phased identification, post-review discoveries, consideration of standard mitigation measures, and preparation of treatment plans when adverse effects cannot be avoided. BOEM has consulted with the Section 106 consulting parties to receive feedback about the anticipated effectiveness of these measures, and to identify any additional measures for inclusion in the Programmatic Agreement and Final PEIS.

I.5 References

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