Appendix N. Finding of Adverse Effect for the Empire Wind Construction and Operations Plan

November, 2022

BOEM has made a Finding of Adverse Effect under Section 106 of the NHPA pursuant to 36 CFR 800.5 for the Empire COP. BOEM finds that the undertaking would adversely affect the following historic properties:

- 30 marine archaeological resources (Section N.4.1.1.1)
- 22 ancient submerged landforms with archaeological or TCP potential (Section N.4.1.1.2)
- 16 architectural resources (Section N.4.1.3):
  - West Bank Light Station in Staten Island, New York
  - Breezy Point Surf Club Historic District in Gateway National Recreation Area, Rockaway, Queens, New York (National Park Service)
  - Silver Gull Beach Club Historic District in Gateway National Recreation Area, Rockaway, Queens, New York (National Park Service)
  - Jacob Riis Park Historic District in Gateway National Recreation Area, Rockaway, Queens, New York (National Park Service)
  - Jones Beach State Park, Parkway and Causeway System, Hempstead/Oyster Bay, New York
  - Robert Moses State Park in Babylon/Islip, New York
  - Fire Island Lighthouse in Fire Island National Seashore, Islip, New York (National Park Service)[1]
  - Fire Island Light Station Historic District in Fire Island National Seashore, Islip, New York (National Park Service)
  - Carrington House in Fire Island National Seashore, Brook Haven, New York (National Park Service)
  - Point O'Woods Historic District in Islip, New York
  - Romer Shoal Light Station in Lower New York Bay, New Jersey
  - Sandy Hook Light in Gateway National Recreation Area, Middleton, New Jersey (National Park Service)
  - Fort Hancock, U.S. Life Saving Station in Gateway National Recreation Area, Highlands, New Jersey (National Park Service)
  - Allenhurst Residential Historic District in Allenhurst, New Jersey
  - Ocean Grove Camp Meeting Association District in Ocean Grove, New Jersey

[1] While the Fire Island Lighthouse and Fire Island Light Station Historic District are discussed as one property in COP Volume 3, Appendix Z (Empire 2022), BOEM recognizes Fire Island Lighthouse to have been individually listed in the NRHP under National Register No. 81000082 in 1981, before an update under National Register No. 09001288 created Fire Island Light Station Historic District with an expanded boundary and additional contributing elements in 2010. As such, the lighthouse and historic district are considered separately in Appendix N and impacts are considered for the two properties separately here.

- Water Witch (Monmouth Hills) Historic District in Middleton, New Jersey

The Projects are considered to have adverse effects on these cultural resources, which are historic properties presently listed or potentially eligible for listing in the NRHP. The Projects would introduce physical effects from construction on marine cultural resources (i.e., marine archaeological resources and ancient submerged landforms). A total of 30 marine archaeological resources and 22 ancient submerged landforms within the marine archaeological portion of the APE cannot be avoided by the Proposed Action, as offshore Project components and associated work zones are proposed for locations within the defined areas of these resources. No known terrestrial archaeological resources are anticipated to experience physical adverse effects. Finally, the Projects would also introduce visual and add cumulative effects from offshore Project component visibility on 16 architectural resources where ocean views are character-defining features that contribute to their NRHP eligibility. For compliance with NHPA Section 110(f) at 36 CFR 800.10, which applies specifically to NHL properties, BOEM has identified four NHLs in the visual APE: Green-Wood Cemetery, Cyclone Roller Coaster, Fort Hancock the Sandy Hook Proving Ground Historic District, and Sandy Hook Light (COP Volume 3, Appendix Z; Empire 2022). BOEM has determined that one NHL owned by the National Park Service, Sandy Hook Light, would be adversely affected by the Projects.

BOEM elected to use the NEPA substitution process for Section 106 purposes, as described in 36 CFR 800.8(c), during its review. The regulations at 36 CFR 800.8(c) provide for use of the NEPA substitution process to fulfill a federal agency's NHPA Section 106 review obligations in lieu of the procedures set forth in 36 CFR 800.3 through 800.6. The NEPA substitution process is described at http://www.achp.gov/integrating_nepa_106. Both processes allow participation of consulting parties. Consistent with use of the NEPA substitution process to fulfill Section 106 requirements, BOEM has decided to codify the resolution of adverse effects through a Memorandum of Agreement pursuant to 36 CFR 800.8(c)(4)(i)(B). See Attachment A.

N.1. Project Overview

In September 2020, BOEM received a COP from Empire proposing offshore wind energy projects within Renewable Energy Lease Area OCS-A 0512, offshore New York and New Jersey. In addition, Empire submitted updates to the COP in April 2021, June 2021, July 2021, September 2021, November 2021, December 2021, January 2022, and June 2022. In its COP, Empire proposes construction, operation, and eventual decommissioning of 816-MW (EW 1) and 1,260-MW (EW 2) wind energy projects (the Projects) consisting of offshore WTGs and their foundations, OSS and their foundations, scour protection for foundations, interarray cables linking the individual turbines to the OSS, substation interconnector cables linking the substations to each other, offshore export cables and an onshore export cable system, onshore substations, and connections to the existing electrical grid in New York and New Jersey (see Figure N-1). At their nearest points, WTG and OSS components of the Projects would be approximately 12 nm (14 statutory miles, 22 kilometers) south of Long Island, New York and 16.9 nm (19.5 statutory miles, 31.4 kilometers) east of Long Branch, New Jersey. Offshore Project elements would be on the OCS, with the exception of a portion of the offshore export cables within state waters. Empire is utilizing a PDE in its COP, which represents a reasonable range of design parameters that may be used for the Projects. In reviewing the COP, BOEM is analyzing the maximum-case scenario that could occur from any combination of the contemplated parameters in the PDE. BOEM's analysis and review may result in the approval of a project that is constructed within that range of design parameters. See Appendix E, *Project Design Envelope and Maximum-Case Scenario*, for more information.

Separately from the Proposed Action, NYCEDC has filed a joint permit application to USACE and NYSDEC for planned improvements at SBMT (NYCEDC 2021). The SBMT would be used as an O&M facility to support EW 1 and EW 2 (Figure N-2). Because improvements to SBMT are solely intended to

support Empire's near-term use of SBMT for laydown and staging of WTG components and these improvements are needed in order for the Projects to be constructed, the Draft EIS analyzes NYCEDC's planned improvements to SBMT as a connected action under NEPA, and as part of the entire undertaking under Section 106 (see Section N.1.2).

If approved by BOEM and other agencies with authority to approve Project components outside of BOEM's jurisdiction, Empire would be allowed to construct and operate WTGs, an export cable to shore, and associated facilities, including those outside BOEM's jurisdiction, for a specified term. BOEM is now conducting its environmental and technical reviews of the COP and the connected action; its decision regarding approval of the plan is provided in this Draft EIS. A detailed description of the proposed Projects can be found in Chapter 2, Section 2.1.2, of this Draft EIS. This Draft EIS considers reasonably foreseeable impacts of the Projects, including impacts on cultural resource, including historic properties.

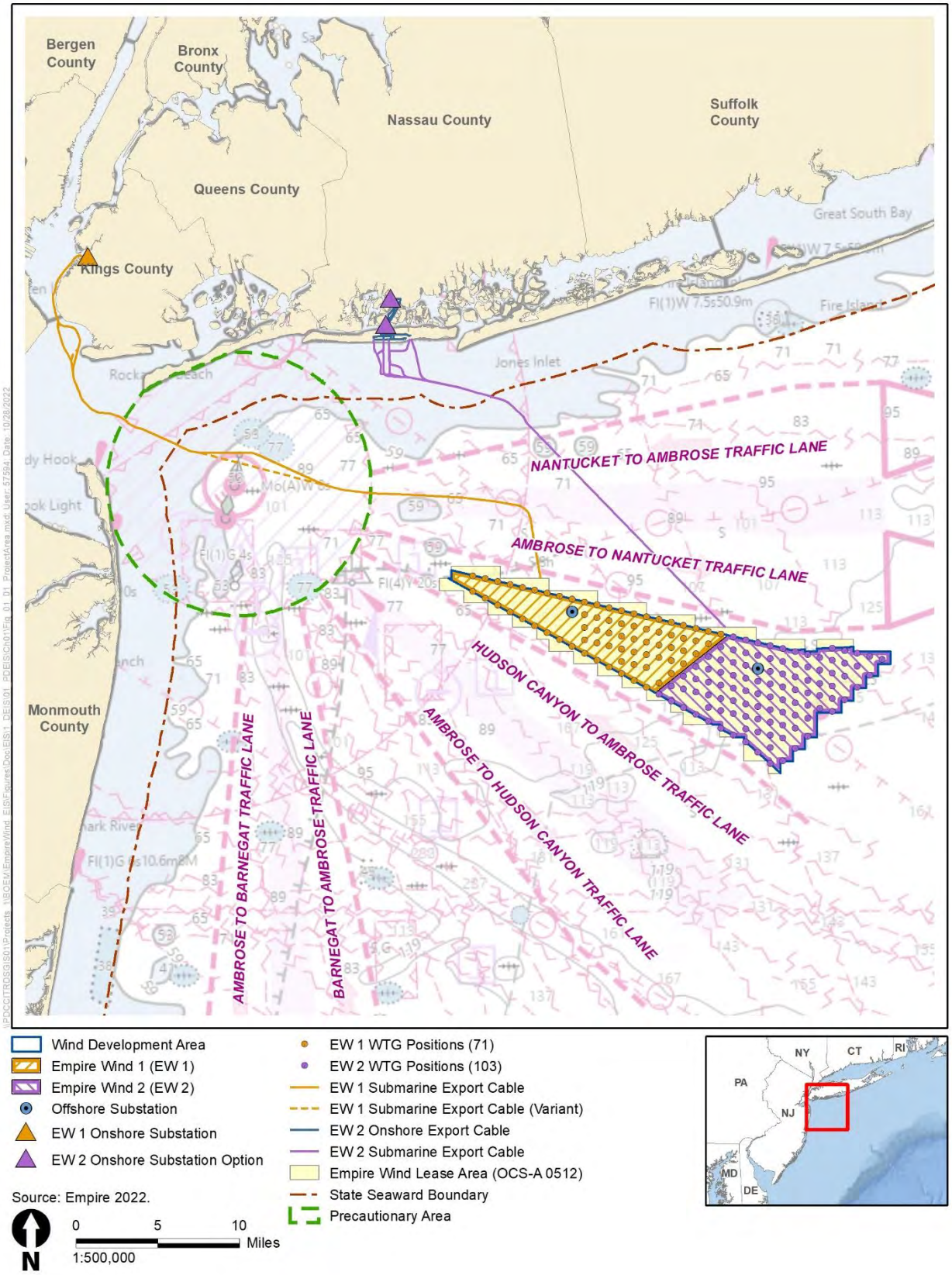

Figure N-1 Empire COP Proposed Project Elements

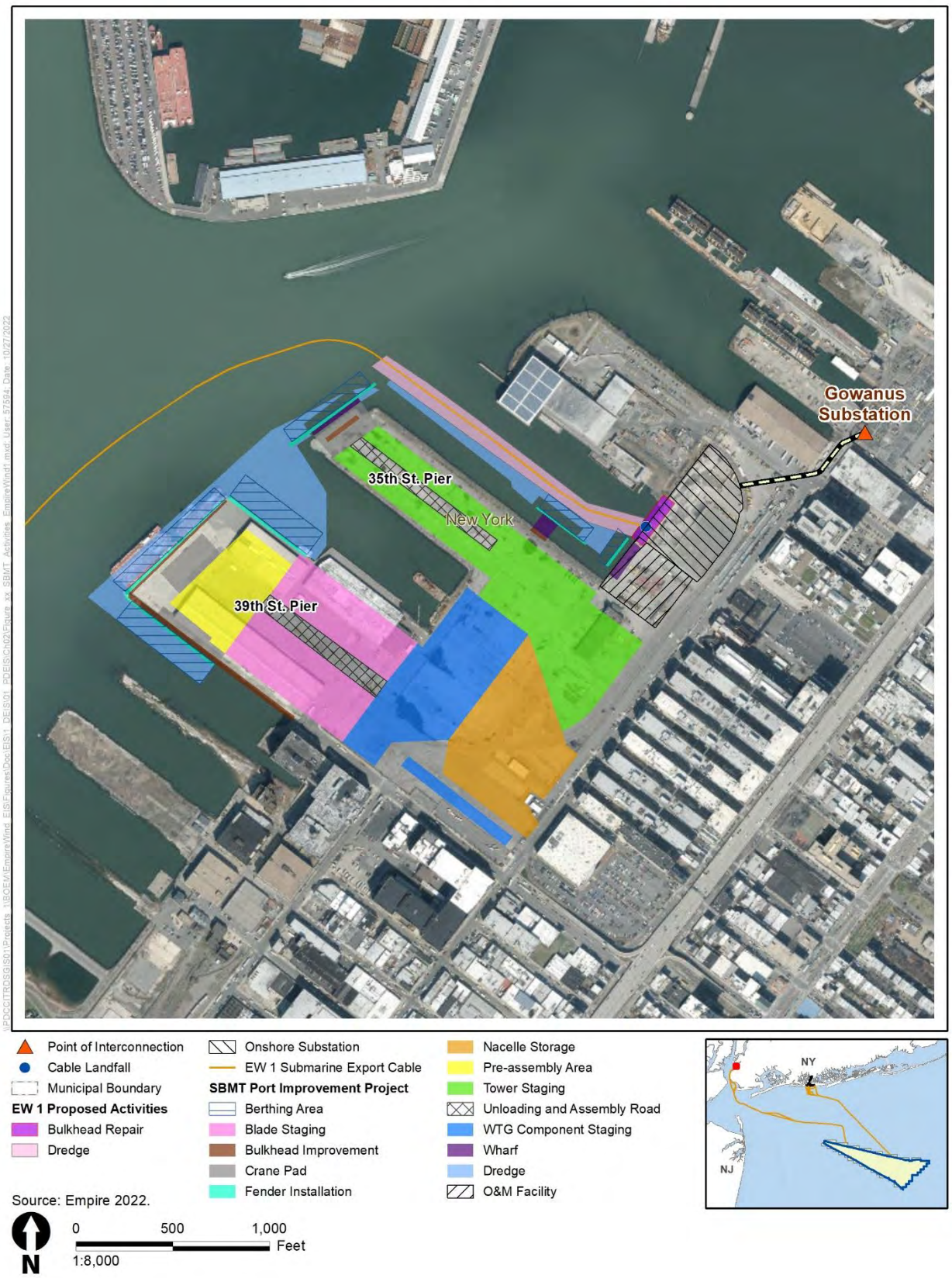

Figure N-2 Proposed Action and Connected Action at South Brooklyn Marine Terminal

N.1.1 Background

The Projects are within a commercial lease area that has received previous Section 106 review by BOEM regarding the issuance of the commercial lease and approval of site assessment activities and is subject to two prior Programmatic Agreements. In 2012, BOEM executed a Programmatic Agreement among the SHPOs of Delaware, Maryland, New Jersey, and Virginia, the ACHP, the Narragansett Indian Tribe, and the Shinnecock Indian Nation (see https://www.boem.gov/sites/default/files/renewable-energy-program/State-Activities/HP/MidAtlantic-PA_Executed.pdf). Additionally, in 2016, BOEM executed a Programmatic Agreement among the SHPOs of New York and New Jersey, and ACHP to consider renewable energy activities offshore New York and New Jersey[2] (see https://www.boem.gov/sites/default/files/renewable-energy-program/State-Activities/HP/NY-NJ-Programmatic-Agreement-Executed.pdf).

In June 2016, BOEM prepared an environmental assessment to analyze the environmental impacts associated with issuing commercial wind leases and approving site assessment activities within the New York WEA. In December 2016, Statoil Wind US, LLC (subsequently renamed to Equinor Wind US, LLC in 2018) submitted an application for all 79,350 acres (32,112 hectares) of lease OCS-A 0512. BOEM approved this lease on December 16, 2016. Equinor Wind US, LLC assigned the lease to Empire on January 27, 2021, in accordance with BOEM's requirements. Therefore, the COP and associated attachments refer to Empire as the lease holder.

Empire's COP proposed to develop the Lease Area as two wind farms, known as EW 1 and EW 2 (collectively referred to hereafter as the Projects). EW 1 and EW 2 would be electrically isolated and independent from each other. The Projects would consist of up to 147 WTGs extending up to 951 feet (290 meters) above MLLW. EW 1 would consist of approximately 57 WTGs and EW 2 would consist of approximately 90 WTGs. Empire would mount the WTGs on monopile or piled jacket foundations. The proposed facility includes up to two OSS, which would be built either on monopile or piled jacket foundations. Where required, scour protection would be placed around foundations to stabilize the seabed near the foundations as well as the foundations themselves. Array cables would transfer electrical energy generated by the WTGs to the OSS. OSS would include step-up transformers and other electrical equipment needed to connect the interarray cables to the offshore export cables. Substations would be connected to one another via substation interarray cables. Up to two interarray cables would be buried beneath the seabed floor.

Up to two offshore export cables would be buried under the seabed floor within the two offshore export cable route corridors to connect the proposed wind energy facility to the onshore electrical grid. Up to two offshore export cables would make landfall and deliver electrical power to the EW 1 substation (Brooklyn, New York) and EW 2 substation (Oceanside or Island Park, New York). The submarine export cable route for EW 1 would depart the Lease Area along its northern boundary, continue north-northwest across the outbound lane of the Ambrose to Nantucket TSS, and then enter the Separation Zone between the traffic lanes before turning to the west. The route would continue through the Traffic Separation Zone toward New York Harbor, reaching a Precautionary Area at the end of the traffic lanes. Prior to reaching the Precautionary Area, the route would enter a charted Danger Area and Empire has proposed an alternate route variant to traverse this section of the route. Approaching Gravesend Bay, Empire has proposed route variants for the EW 1 submarine export cable that would either route the submarine cable within the maintained Ambrose Channel or through the charted Anchorage #25 area. North of the Anchorage #25 area, the EW 1 route would then turn to the northeast and follow the Bay Ridge Channel to the EW 1 landfall at SBMT. The EW 2 submarine export cable route corridor would exit the Lease Area from the central north edge and travel in a relatively straight, northwestern direction, then turn west seaward of the New York state water boundary before making landfall in the vicinity of

[2] BOEM also included Shinnecock Indian Nation as an invited signatory on this Programmatic Agreement, but the tribal nation declined to sign the agreement.

Long Beach or Lido Beach in one of four locations, to be selected from the following sites: EW 2 Landfall A (Riverside Boulevard), EW 2 Landfall B (Monroe Boulevard), EW 2 Landfall C (Lido Beach West Town Park), or EW 2 Landfall E (Laurelton Boulevard).

Landfall locations in Brooklyn, Long Beach, or Lido Beach, New York would include transition joint bays to connect the offshore export cable to the onshore export cable. Transition of the export cables from offshore to onshore would be accomplished by using open-cut trenching or trenchless methods. Onshore export cables would be buried and housed within a single duct bank buried along the onshore export cable route with a target burial of 4 feet. The onshore export cable routes would terminate at the EW 1 substation and EW 2 substation sites.

The proposed Projects have a designed life span of approximately 35 years; some installations and components may remain fit for continued service after this time. O&M activities would include inspections, preventative maintenance, and, as needed, corrective maintenance for onshore substations, onshore export cables, and grid connections. Empire would conduct annual maintenance of WTGs, including safety surveys, blade maintenance, painting, and replacement of consumable items, such as filters and hydraulic oils, as needed. Foundation inspections would be conducted every 3 years starting on year three. Surveys of the submarine export cable and interarray cables would be completed annually for the first 3 years, then every 2 years to confirm the cables have not become exposed. The offshore export cables, interarray cables, and OSS interconnector cables typically have no maintenance requirements unless a failure occurs. Empire would need to use vessels, vehicles, and aircraft during O&M activities described above.

Although the proposed Projects are anticipated to have an operational life of 35 years, it is possible that some installations and components may remain fit for continued service after this time. Empire would have to apply for and be granted an extension if it wanted to operate the proposed Projects for more than the 25-year operations term stated in its lease. The process of decommissioning would remove all facilities, projects, cables, pipelines, and obstructions and clear the seafloor of all obstructions created by the proposed Projects. All foundations would need to be removed 15 feet (4.6 meters) below the mudline (30 CFR 585.910(a)). Absent permission from BOEM, Empire would have to achieve complete decommissioning within 2 years of termination of the lease and either reuse, recycle, or responsibly dispose of all materials removed. A Section 106 review would be conducted at the decommissioning stage.

Connected action improvements would upgrade SBMT to enable it to serve as a staging facility and O&M facility for the offshore wind industry. In the near term, SBMT would be used to support EW 1 and EW 2, and it is expected to support other offshore wind developers and projects in the future. Planned improvements include dredging to allow vessels laden with WTG components access to piers; bulkhead improvements to support large cranes for handling WTG components; additional wharves to allow mooring and berthing of barges, service operation vessels, and crew transport vessels; and construction of an O&M facility (NYCEDC 2021).

N.1.2 Undertaking

BOEM has determined that the Projects and connected action constitute an undertaking subject to Section 106 of the NHPA as amended (54 USC 306108) and its implementing regulations (36 CFR 800), and that the Project activities proposed under the COP (Empire 2022) and connected action activities proposed in the USACE/NYSDEC joint permit application (NYCEDC 2021) have the potential to affect historic properties. Confidential appendices to the COP referenced in this document were sent electronically or by mail depending on expressed preference to all consulting parties on November 18, 2022. The COP, as well as its public and confidential appendices, and the USACE/NYSDEC joint permit application are hereby incorporated by reference.

The undertaking for this Section 106 review includes the Proposed Action and connected action. As described in Section 2.1.2 of the Draft EIS, the Proposed Action would include the construction, O&M, and eventual decommissioning of EW 1 and EW 2 within the range of design parameters described in Volume 1 of the COP (Empire 2022) and summarized in Appendix E, *Project Design Envelope and Maximum-Case Scenario*, subject to applicable mitigation measures. The connected action would include planned improvements at SBMT to enable it to serve as a staging facility and O&M facility for EW 1 and EW 2 and other offshore wind projects as also described in Section 2.1.2 of the Draft EIS.

N.1.3 Area of Potential Effects

BOEM defines the APE for approval of the COP to include the following geographic areas:

- The depth and breadth of the seabed potentially affected by any bottom-disturbing activities, constituting the marine archaeological resources portion of the APE;
- The depth and breadth of terrestrial areas potentially affected by any ground disturbing activities, constituting the terrestrial archaeological resources portion of the APE;
- The viewshed from which renewable energy structures, whether offshore or onshore, would be visible, constituting the visual portion of the APE; and
- Any temporary or permanent construction or staging areas, both onshore and offshore, which may fall into any of the above portions of the APE.

These are described below in greater detail with respect to the proposed activities, consistent with BOEM's *Guidelines for Providing Archaeological and Historic Property Information Pursuant to 30 CFR Part 585* (BOEM 2020).

N.1.3.1. Proposed Action

N.1.3.1.1 Marine Archaeological Resources APE

The marine archaeological resources portion of the APE (hereafter *marine APE*) for the Projects is the depth and breadth of the seabed potentially affected by any bottom-disturbing activities and temporary or permanent offshore construction or staging areas. It includes a conservative PDE that can accommodate a number of potential designs, whether monopile or jacketed foundations are used, installed by jack-up vessels as well as necessary support vessels and barges. The marine APE encompasses activities within the Lease Area (Attachment B, Figure 1), within EW 1 and EW 2 submarine export cable routes (Attachment B, Figure 2 and Figure 3), and within the connected action (Attachment B, Figure 4; see Section N.1.3.2 for more detail about the connected action).

The Lease Area encompasses 79,350 acres (32,112 hectares) with water depths ranging from 79 to 141 feet (23 to 41 meters). Within the Lease Area, the Wind Farm Development Area would occur in a smaller footprint of 65,458 acres (26,490 hectares), approximately 83 percent of the Lease Area. Empire proposes up to 147 WTGs and up to two OSS within the extent of the PDE. The marine APE also includes all offshore areas where seafloor-disturbing activities from interarray cable trenching and installation, boulder relocation, and vessel anchoring may occur. The maximum vertical seabed impact would be approximately 180 feet (55 meters) for WTGs, and approximately 295 feet (90 meters) for OSS. The array and substation interconnector cables have a target burial depth of 8 feet (2.4 meters) below the stable seabed. Seafloor disturbance for anchoring of construction vessels would be approximately 20 feet (6.1 meters) and within the anchor corridors would be 49 feet (15 meters). Each main vessel would have up to eight anchors.

The marine APE also includes offshore export cable corridors extending from the Lease Area to the sea-to-shore transition at landfall locations in Brooklyn, Long Beach, or Lido Beach, New York. The submarine export cable routes contain two separate corridors: siting and anchor. The siting corridors would vary in width between 500 feet (152 meters) (EW 1) and 900 feet (274 meters) (EW 2), while both export cable route anchor corridors measure 1,250 feet (381 meters) wide. The EW 1 submarine export cable route would be approximately 40 nm (74 kilometers) and approximately 8,158 acres (3,301 hectares), extending northwest from the EW 1 OSS to the sea-to-shore transition at a landfall location in Brooklyn; and EW 2 submarine export cable route extending north from the EW 2 OSS to the sea-to-shore transition at a landfall location in Long Beach. The EW 2 submarine export cable route would be approximately 26 nm (48 kilometers) and approximately 12,169 acres (4,925 hectares), extending north from the EW 2 OSS to the sea-to-shore transition at a selected landfall location in Long Beach or Lido Beach. Offshore export cables would typically be buried below the seabed similarly to the array cables. It is assumed most would be buried at shallow depths of 8 feet (2.4 meters) and none will exceed burial depths of 20 feet (5.5 meters).

N.1.3.1.2 Terrestrial Archaeological Resources APE

The terrestrial archaeological resources portion of the APE (hereafter *terrestrial APE*) includes areas of potential ground disturbance associated with the onshore construction and operation of the Projects. The APE is presented as a conservative PDE and includes the cable landfall sites, underground cable routes, onshore interconnection cables, onshore substations, and an O&M facility. The depth and breadth of potential ground-disturbing activities are described below for each location. Attachment B, Figure 5, depicts the terrestrial APE for onshore cable and landfall site alternatives for the EW 1 onshore export and interconnection cable corridor, onshore substation, and O&M facility in detail. Attachment B, Figure 6, depicts the terrestrial APE for EW 2 onshore export and interconnection cable corridor and onshore substation options.

The terrestrial APE includes the sea-to-shore transition landfall sites. Transition of the export cables from offshore to onshore would be accomplished by using both trenchless (e.g., HDD and jack and bore) and trenched (open-cut trench) methods. For the EW 1 landfall location, trenchless methods (i.e., HDD) may require a maximum vertical disturbance of up to 10 feet (3 meters) in a 200-foot by 200-foot (61-meter by 61-meter) area. For the EW 2 landfall location, trenchless methods (i.e., HDD) may require a maximum vertical disturbance of up to 10 feet (3 meters) in a 260-foot by 680-foot (79-meter by 207-meter) area. Ground-disturbing activities from installation of the onshore interconnection cable and associated excavation would occur at the EW 1 landfall site illustrated in Attachment B, Figure 5, and ground-disturbing activities from installation and associated excavation for the onshore export cables and interconnection cables would occur at EW 2 landfall sites options illustrated in Attachment B, Figure 6.

The onshore export and interconnection cables would be installed underground on road shoulders, sidewalks, parking areas, or within transit and utility easements. The cables would be installed utilizing trenched (i.e., open-cut trenching) and trenchless methods. EW 1 cables would measure up to 0.2 mile (0.4 kilometer) in length. Open-cut trenches would measure up to 10 feet (3 meters) in depth and 10 feet (3 meters) in width with a construction corridor width of 50 feet (15 meters) and operational corridor width of 25 feet (8 meters) for interconnection cables. EW 2 cables would measure up to 5.6 miles (9.1 kilometers) in length. Open-cut trenches would measure up to 10 feet (3 meters) in depth and 15 feet (4.5 meters) in width with a construction corridor width of 150 feet (46 meters) for onshore export cables and 100 feet (30 meters) for interconnection cables and operational corridor width of 25 feet (8 meters) for both onshore export and interconnection cables.

The onshore cables would connect to the proposed onshore substations. Two onshore substations would be constructed and installed in support of the Projects. The SBMT in Brooklyn, New York has been identified as the location for the EW 1 onshore substation. The EW 2 onshore substation would be at one

of two sites in Oceanside: EW 2 Onshore Substation A in Oceanside, New York or EW 2 Onshore Substation C in Island Park, New York. The final selection of EW 2 Onshore Substation A or EW 2 Onshore Substation C would depend upon the ability for Empire to acquire land access agreements and other site considerations. Ground-disturbing activities associated with construction of the EW 1 onshore substation would occur on a previously paved portion of the SBMT property measuring approximately 4.8 acres (1.9 hectares). For EW 2 Onshore Substation A, ground-disturbing activities associated with construction would occur on a parcel at the corner of Daly Boulevard and Hampton Road in Oceanside, New York in a portion of the parcel measuring approximately 6.4 acres (2.6 hectares) that currently supports industrial uses. For EW 2 Onshore Substation C, ground-disturbing activities associated with construction would occur on a parcel at 15 Railroad Place in Island Park, New York in a portion of the parcel measuring 5.2 acres (2.1 hectares) that currently is used for commercial purposes.

The O&M facility would serve both EW 1 and EW 2 and would be at SBMT, adjacent to the EW 1 onshore substation. Ground-disturbing activities associated with the construction of the O&M facility would occur on up to 4.5 acres (1.8 hectares) of area and 15 feet (4.5 meters) of depth.

N.1.3.1.3 Visual APE

The APE for visual effects analysis (hereafter visual APE) includes the viewshed from which renewable energy structures—whether offshore or onshore—would be visible. For offshore structures, the visual APE was delineated by first setting a study area boundary of 40 miles radial distance from the Wind Farm Development Area. This is the approximate maximum theoretical distance—a distance that does not factor in certain environmental factors such as weather or environmental conditions—at which the WTGs could be visible (COP Volume 3, Appendix Z; Empire 2022:17).

Geographic information system analysis, including viewshed modeling, and subsequent field investigation were applied to delineate the visual APE methodically through a series of steps, beginning with the maximum theoretical distance WTGs could be visible. This was determined by first considering the visibility of a WTG from the water level to the tip of an upright rotor blade at a maximum height of 951 feet (290 meters). The analysis then accounted for how distance and EC impede visibility as the distance increases between the viewer and WTGs (i.e., by a 40-mile distance, even blade tips would be below the sea level horizon line). The mapping effort then removed all areas with obstructed views toward WTGs, such as those views impeded by intervening topography, vegetation, and structures. The mapping effort also accounted for areas where building or landform elevations could result in unobstructed views to the WTGs. Areas with unobstructed views of offshore Project elements then constituted the APE. See Attachment B, Figure 7, which shows the offshore visual APE for New Jersey, and Figure 8, which shows the offshore visual APE for New York.

Onshore, geographic information system viewshed analysis was also applied to delineate the visual APE based on the theoretical visibility of onshore Project elements within a 2-mile (3.2-kilometer) boundary around the EW 1 substation location and connected action O&M facility upgrades (see Attachment B, Figure 9) and a minimum 2-mile (3.2-kilometer) boundary around each of the EW 2 substation location options (COP Volume 3, Appendix Z; Empire 2022:55, 57). See Attachment B, Figure 10 and Figure 11.

N.1.3.2. Connected Action

The APE for the connected action comprises geographic areas in which historic properties are subject to effects from the SBMT port infrastructure improvement project (NYCEDC 2021). The APE proposed in the USACE/NYSDEC joint permit application for the SBMT was reviewed by New York SHPO (see Attachment E, *New York SHPO Letter of Concurrence on Finding of No Adverse Effect on Historic Properties from South Brooklyn Marine Terminal Port Infrastructure Upgrades*). BOEM has reviewed and finds that delineation to be sufficient. As such, BOEM has incorporated that boundary as the

connected action portion of the APE for the Empire Wind undertaking. The archaeological portion of the APE for the connected action is the depth and breadth of the ground or seabed potentially affected by any ground- or seabed bottom-disturbing activities and any temporary or permanent onshore or offshore construction or staging areas. The submerged disturbance associated with this connected action is within BOEM's delineated marine APE (see Attachment B, Figure 4). The ground disturbance associated with this connected action is within BOEM's delineated terrestrial APE (see Attachment B, Figure 5). Anticipated ground- or seabed bottom-disturbing activities for the connected action include bulkhead replacement, new fender installation, new wharf construction, and dredging as well as in-water and upland project actions that would create varying levels of in-water and upland ground disturbance, each of which could affect potential archaeological resources.

The visual portion of the APE for the connected action includes all areas where the action may cause changes to land or structures and their uses, including the area of ground disturbance caused by the action, and locations from which elements of the project may be visible (Attachment B, Figure 9). The environment around and including the SBMT port infrastructure improvement project area is characterized as an urban waterfront, including landfill areas resembling and referred to as "piers," actual pile-supported piers, warehouse buildings, a waterfront park, and a densely developed street network. The visual APE for the connected action constitutes a 0.25-mile (0.4-kilometer) buffer around the SBMT port infrastructure improvement project area.

N.2. Steps Taken to Identify Historic Properties

N.2.1 Technical Studies and Reports

To support the identification of historic properties within the APE for the Proposed Action, Empire (2022) has provided survey reports detailing the results of cultural resource investigations within the marine, terrestrial, and visual portions of the APE. Additionally, NYCEDC (2021) has provided information compiled in support of its joint permit application submitted to USACE/NYSDEC on its historic properties identification efforts within the archaeological and visual portions of the APE for the connected action. A summary of the efforts to identify historic properties and results and key findings of each investigation are provided for the Proposed Action in Table N-1 and connected action in Table N-2.

Collectively, BOEM finds that these reports represent a good-faith effort to identify historic properties within the APE for the undertaking, including both the Proposed Action and connected action. The documents summarized in Table N-1 and Table N-2 have been shared with consulting parties and are hereby incorporated by reference.

BOEM has reviewed the studies and resulting reports completed for the Proposed Action as summarized in Table N-1, found them sufficient, and reached the following conclusions:

- The marine archaeological investigations include surveys of areas of potential seafloor disturbance following BOEM's *Guidelines for Providing Archaeological and Historic Property Information Pursuant to 30 CFR Part 585*. BOEM has reviewed the final marine archaeological survey report and has determined that the data are sufficient for identifying historic properties within the marine APE.
- BOEM has reviewed the terrestrial archaeological reports submitted to date and has determined that the investigations summarized in the reports are sufficient for identifying historic properties within the terrestrial APE.
- BOEM has reviewed the VIA with visual simulations and the assessment of visual effects on historic properties for the entire PDE and determined the studies and reports are sufficient for identifying and assessing effects on historic properties within the visual APE. BOEM finds that the APE for potential visual effects analyzed is appropriate for the scale and scope of the undertaking. BOEM further finds

that the inventory of historic properties is sufficient to consult on the undertaking and represents a good-faith effort to identify historic properties within the visual APE potentially affected by the undertaking, as defined at 36 CFR 800.4.

BOEM has reviewed the study and resulting report completed for the connected action as summarized in Table N-2, found it sufficient, and reached the following conclusions:

- The archaeological investigation includes areas of potential ground and seabed bottom disturbance, meeting BOEM's *Guidelines for Providing Archaeological and Historic Property Information Pursuant to 30 CFR Part 585*. BOEM has reviewed the archaeological investigation information provided in the report and has determined that the data are sufficient for identifying marine and terrestrial archaeological resources within the connected action portion of the APE for this undertaking.
- The architectural investigation includes areas where there is potential for historic properties to be affected by physical or visual impacts from the connected action, and the area studied is sufficient for the scale and scope of the SBMT port infrastructure improvement activities. BOEM finds the inventory of historic properties is sufficient to consult on the undertaking and represents a good-faith effort to identify historic properties within the connected action portion of the visual APE for this undertaking, as defined at 36 CFR 800.4.

In addition to the conclusions summarized above, BOEM has found that the assessment of effects on historic properties within the APE for this undertaking, including the Proposed Action and the connected action, contained within these reports is sufficient to apply the criteria of adverse effects and to continue consultations with consulting parties for resolving adverse effects on historic properties.

Consequent to the reports prepared for the COP submittal, ICF prepared for BOEM a technical report to support BOEM's cumulative effects analysis, the *Cumulative Historic Resources Visual Effects Analysis for Empire Wind Farm Project* (BOEM 2022). The Cumulative Historic Resources Visual Effects Analysis presents the analysis of cumulative visual effects where BOEM has determined, in review of the Historic Resources Visual Effects Assessment (COP Volume 3, Appendix Z; Empire 2022), that historic properties would be adversely affected by the Projects. The effects of other reasonably foreseeable wind energy development activities are additive to those adverse effects from the Projects, resulting in cumulative effects. Fourteen historic properties within the viewshed of WTGs for the Projects and other reasonably foreseeable offshore wind energy development activities would be adversely affected by cumulative visual effects. These 14 historic properties are West Bank Light Station in Staten Island, New York; Breezy Point Surf Club Historic District in Rockaway, Queens, New York (National Park Service); Silver Gull Beach Club Historic District in Rockaway, Queens, New York (National Park Service); Jacob Riis Park Historic District in Rockaway, Queens, New York (National Park Service); Jones Beach State Park, Parkway and Causeway System, Hempstead/Oyster Bay, New York; Robert Moses State Park in Babylon/Islip, New York; Fire Island Lighthouse in Islip, New York; Fire Island Light Station Historic District in Islip, New York; Carrington House in Brook Haven, New York; Point O'Woods Historic District in Islip, New York; Romer Shoal Light Station in Lower New York Bay, New Jersey; Sandy Hook Light in Middleton, New Jersey (National Park Service); Fort Hancock, U.S. Life Saving Station in Highlands, New Jersey (National Park Service); Allenhurst Residential Historic District in Allenhurst, New Jersey; Ocean Grove Camp Meeting Association District in Ocean Grove, New Jersey; and Water Witch (Monmouth Hills) Historic District in Middleton, New Jersey.

Table N-1 Summary of Cultural Resources Investigations Performed by Empire in the Terrestrial, Marine, and Visual APE

Portion of APE	Report	Description	Key Findings / Recommendation
Marine	Marine Archaeological Resources Assessment For The Empire Offshore Wind: Empire Wind Project (EW 1 and EW 2) For Lease Area OCS-A 0512 Construction And Operations Plan (COP Volume 3, Appendix X; Empire 2022)	Marine archaeological resources assessment of HRG survey data collected during multiple non-intrusive survey campaigns conducted by third-party marine survey contractors and geotechnical assessment within marine PAPE representing the extent of anticipated seabed impacts associated with the Projects.	This report identified 52 potential historic properties: 30 marine archaeological resources and 22 ancient submerged landforms. All of these resources are potentially eligible for listing in the NRHP. A total of 30 potential marine archaeological resources (all potential historic properties) were identified within the marine PAPE (Targets 01–30): seven within the Lease Area, 21 within the EW 1 submarine export cable route, and two within the EW 2 submarine export cable route. SEARCH recommended avoidance of Targets 01–21, 23–26, and 28–30 by a minimum distance of 50 meters (164 feet) from the extent of the magnetic anomalies or acoustic contacts. SEARCH recommended avoidance of Targets 22 and 27 by a minimum distance of 30 meters (98 feet) from the extent of the acoustic contacts. If avoidance is not feasible, SEARCH recommended additional archaeological investigation, which may include refined HRG survey, additional archival/background research, or diver/remotely operated vehicle verification to determine the source(s) of the target and assess its integrity, significance, and eligibility for listing in the NRHP as a historic property. This report also identified 22 ancient submerged landforms with archaeological or TCP historic property potential within the marine PAPE (Targets 31–52). Based on findings from 31 geotechnical samples, SEARCH recommended avoidance and minimization measures for ancient submerged landforms, which may include micro-siting facilities and work zones away from features and avoidance buffers or adjusting burial depth of cabling across features.

Portion of APE	Report	Description	Key Findings / Recommendation
Terrestrial	Empire Offshore Wind: Empire Wind Project (EW 1 and EW 2), Phase I Terrestrial Archaeological Survey, Empire Wind 1 Interconnection Cable Corridor, Onshore Substation, and O&M Base, Brooklyn, Kings County, New York (COP Volume 3, Appendix Y; Empire 2022)	Background research of known archaeological resources within the study area composed of EW 1 interconnection cable route, onshore substation, and O&M facility locations and 0.25-mile (0.4-kilometer) buffer surrounding the aforementioned EW 1 onshore components; methods and findings of terrestrial archaeological survey (i.e., pedestrian reconnaissance) of the EW 1 PAPE; and assessment of archaeological sensitivity within the EW 1 PAPE.	This report concluded no archaeological historic properties are known within the EW 1 terrestrial PAPE and, overall, the EW 1 onshore portions of the Projects possess low sensitivity to contain intact archaeological resources that might be eligible for listing in the NRHP. This assessment of low sensitivity is due to prior large-scale ground-disturbing activities. Tetra Tech recommended construction and operations of the EW 1 Project components be permitted within the areas surveyed and, if any substantial modifications are made to the Project design, consultation with New York SHPO and possibly additional archaeological survey may be necessary.
Terrestrial	Empire Offshore Wind: Empire Wind Project (EW 1 and EW 2), Phase I Terrestrial Archaeological Survey, Empire Wind 2 Onshore Export and Interconnection Cable Corridor and Onshore Substation, City of Long Beach and Town of Hempstead, Nassau County, New York (COP Volume 3, Appendix Y; Empire 2022)	Background research of known archaeological resources within the study area composed of EW 2 onshore export and interconnection cable routes and onshore substation and 0.25-mile (0.4-kilometer) buffer surrounding the aforementioned EW 2 onshore components; methods and findings of terrestrial archaeological survey (i.e., pedestrian reconnaissance) of the EW 2 PAPE; and assessment of archaeological sensitivity within the EW 2 PAPE.	This report concluded no archaeological historic properties are known within the EW 2 terrestrial PAPE and, overall, the onshore portions of the Projects possess low sensitivity to contain intact archaeological resources that might be eligible for listing in the NRHP. This assessment of low sensitivity is due to prior large-scale natural or ground-disturbing activities. Tetra Tech recommended construction and operations of the EW 2 Project components be permitted within the areas surveyed. Furthermore, Tetra Tech recommended, as deemed necessary by New York SHPO, an archaeological monitor be present at three locations with moderate archaeological sensitivity to identify any archaeological resources that may potentially be revealed during construction activities. This report concluded that, with implementation of the above measures, no significant adverse impacts on archaeological resources would be expected to result from construction or operations of the proposed EW 2 onshore facilities and, if any substantial modifications are made to the Project design, consultation with New York SHPO and possibly additional archaeological survey may be necessary.

Portion of APE	Report	Description	Key Findings / Recommendation
Visual	Empire Wind Visual Effects on Historic Properties (COP Volume 3, Appendix Z; Empire 2022)	A study evaluating visual impacts on historic properties.	This report identified 14 historic districts and 25 individual properties within the offshore infrastructure PAPE. A "No Adverse Effect" recommendation was made for 23 properties, and a Potential for Adverse Effect was recommended for 16 properties: West Bank Light Station in Staten Island, New York; Breezy Point Surf Club Historic District in Rockaway, Queens, New York (National Park Service); Silver Gull Beach Club Historic District in Rockaway, Queens, New York (National Park Service); Jacob Riis Park Historic District in Rockaway, Queens, New York (National Park Service); Jones Beach State Park, Parkway and Causeway System, Hempstead/Oyster Bay, New York; Robert Moses State Park in Babylon/Islip, New York; Fire Island Lighthouse in Islip, New York and Fire Island Lighthouse Historic District in Islip, New York; Carrington House in Brook Haven, New York; Point O'Woods Historic District in Islip, New York; Romer Shoal Light Station in Lower New York Bay, New Jersey; Sandy Hook Light in Middleton, New Jersey (National Park Service); Fort Hancock, U.S. Life Saving Station in Gateway National Recreation Area, Highlands, New Jersey (National Park Service); Allenhurst Residential Historic District in Allenhurst, New Jersey; Ocean Grove Camp Meeting Association District in Ocean Grove, New Jersey; and Water Witch (Monmouth Hills) Historic District in Middleton, New Jersey. The visual effects analysis included three NHL properties in the offshore infrastructure PAPE and one NHL property in the onshore infrastructure PAPE. A Potential for Adverse Effect was recommended for one designated NHL property, Sandy Hook Light (National Park Service). This report also analyzed visual effects on one historic district and three historic properties identified within the onshore infrastructure PAPE. A recommendation of No Adverse Effect was made for all four properties. Mitigation options to resolve adverse effects from visual impacts were recommended for BOEM's consideration.

Portion of APE	Report	Description	Key Findings / Recommendation
Terrestrial/ Visual	Empire Offshore Wind: Empire Wind Project (EW 1 and EW 2) EW 2 Onshore Substation C Characterization Report (Tetra Tech 2021a)	A study evaluating visual impacts on historic properties resulting from addition of an EW 2 Substation C optional location and analysis of potential for archaeological resources within the amended terrestrial PAPE associated with the EW 2 Substation C optional location.	Empire has proposed a third location option for the onshore substation for EW 2, Onshore Substation C, in addition to the previous two options EW 2 Onshore Substation A and EW 2 Onshore Substation B, both in Oceanside, New York. Onshore Substation C would be on an approximately 5.2-acre (2.1-hectare) property adjacent to Railroad Place, Island Park, Nassau County, New York. The onshore substation would connect into the Oceanside POI owned by National Grid and operated by Public Service Enterprise Group Long Island. The proposed location of EW 2 Onshore Substation C would not require alterations to the location of the existing POI or the proposed onshore export cable route of EW 2 previously outlined in the COP. While the Onshore Substation C study area overlaps approximately 75% of the combined Onshore Substation A/B sites, the addition of Onshore Substation C to the Projects has necessitated changes to the refined onshore PAPE that include additional areas in Atlantic Beach, East Atlantic Beach, and Lawrence, New York. The location of the proposed EW 2 Onshore Substation C was assessed for archaeological resources during the surveys completed in 2019 and 2021 as part of the EW 2 study area described in the COP, because it is along the EW 2 onshore export cable corridor. As such, no further assessment is required to cover the EW 2 Onshore Substation C site. This report also analyzed visual effects on historic properties within the onshore infrastructure PAPE. One property, the Cobble Villa, was analyzed, and a recommendation of No Adverse Effect was made for this property.

Sources: COP Volume 3, Appendices X, Y, and Z from Empire 2022; Tetra Tech 2021a.
PAPE = preliminary area of potential effects

Table N-2 Summary of Cultural Resources Investigations Performed by NYCEDC in the Archaeological and Visual APE for the Connected Action

Portion of APE	Report	Description	Key Findings / Recommendation
Archaeological/ Visual	South Brooklyn Marine Terminal Port Infrastructure Improvement Project, U.S. Army Corps of Engineers/ New York State Department of Environmental Conservation (NYSDEC) Joint Permit Application, Appendix C, Cultural Resources (NYCEDC 2021)	A cultural resource study completed in support of the SBMT port infrastructure improvement project permit application packet. Complete NYSDEC structural archaeological assessment form and supporting Section 106 assessment information.	From investigations of the archaeological APE, land within the proposed project area was determined to have been previously disturbed or altered (i.e., excavated, landscaped, filled, or utilities installed). No previously identified archaeological resources, areas of archaeological sensitivity, submerged resources, or New York State Museum Areas were located within a 0.5-mile buffer surrounding the SBMT project area. Previously conducted archaeological surveys encompassing the project area and within the 0.5-mile buffer surrounding the project area identified no archaeological resources that are historic properties eligible for listing in the NRHP. From investigations of the visual APE, the SBMT was identified as not eligible for listing in the State Register or NRHP as previously determined by the New York SHPO. Five architectural resources that are historic properties either eligible or listed in the NRHP were identified within the visual APE. The SBMT project was recommended to have no effect on three of these historic properties and No Adverse Effect on two of these historic properties.

Source: NYCEDC 2021.

N.2.2 Consultation and Coordination with the Parties and Public

N.2.2.1. Early Coordination

Since 2009, BOEM has coordinated OCS renewable energy activities offshore New Jersey and New York with its federal, state, local, and tribal government partners through its Intergovernmental Renewable Energy Task Force. BOEM has met regularly with federally recognized tribes that may be affected by renewable energy activities in the area since 2011, specifically during planning for the issuance of leases and review of site assessment activities. BOEM also hosts public information meetings to help keep interested stakeholders updated on major renewable energy milestones. Information pertaining to BOEM's Intergovernmental Renewable Energy Task Force meetings is available at https://www.boem.gov/renewable-energy/state-activities/renewable-energy-task-force-meetings-1, information pertaining to BOEM's stakeholder engagement efforts in New York is at https://www.boem.gov/renewable-energy/state-activities/new-york-activities, and information pertaining to BOEM's stakeholder engagement efforts in New Jersey is at https://www.boem.gov/renewable-energy/state-activities/new-jersey-public-information-meetings.

N.2.2.2. NEPA Scoping and Public Hearings

On June 24, 2021, BOEM announced its NOI to prepare an EIS for the COP. This purpose of the NOI was to solicit input on issues and potential alternatives for consideration in the EIS. Throughout the scoping process, federal agencies; state, tribal, and local governments; and the general public had the opportunity to help BOEM determine significant resources and issues, IPFs, reasonable alternatives, and potential mitigation measures to be analyzed in the EIS, as well as provide additional information. BOEM also used the NEPA commenting process to allow for public involvement in the NHPA Section 106 consultation process (54 USC 300101 et seq.), as permitted by 36 CFR 800.2(d)(3). Through this notice, BOEM announced its intention to inform its NHPA Section 106 consultation using the NEPA commenting process and invited public comment and input regarding the identification of historic properties or potential effects on historic properties from activities associated with approval of the COP.

Additionally, BOEM held virtual public scoping meetings, which included specific opportunities for engaging on issues relative to NHPA Section 106 for the COP, on June 30, 2021, and July 8 and 13, 2021. Virtual public scoping meeting materials and records are available at https://www.boem.gov/Empire-Wind-Scoping-Virtual-Meetings.

Through this NEPA scoping process, BOEM received comments related to cultural, historic, archaeological, or tribal resources. These are presented in BOEM's EIS Scoping Report (BOEM 2021) and are summarized as follows:

- Several commenters stated that BOEM should comply with Section 106 of the NHPA including adequate consultation with SHPOs and other stakeholders.
- Several commenters stated that BOEM should recognize tribal sovereignty and provide adequate government-to-government consultation with tribal governments.
- Commenters expressed concern regarding the potential of the proposed Projects to cause impacts, including visual impacts, on archaeological resources, historic architectural resources, historic properties, cultural landscapes, and ethnographic resources in general and at specific locations including Fire Island National Seashore, Gateway National Recreation Area, Point O'Woods, Jones Beach State Park Sea Scape, and National Historic Landmarks and Districts.
- Some commenters felt that the COP's Visual Impact Assessment was not adequate to analyze visual impacts on historic properties and thus to propose appropriate avoidance, minimization, or mitigation

measures.

- Commenters noted that the cumulative impacts assessment for cultural resources must include the cumulative effect that all the proposed wind farm projects in the area have on cultural resources and landscapes.
- One commenter asked if impacts on the fishing industry will be considered as part of the cultural resource surveys required under NEPA.
- Commenters expressed concern that the Projects would disturb the viewshed of places where loved ones were laid to rest, particularly the memorial bench on Long Beach.
- Commenters asked that the EIS identify the level of low-frequency noise and infrasound generated by operation of the turbines, how far it will propagate, how it compares to the baseline noise levels, and impacts on historic structures.
- Commenters suggested that alternatives to the proposed Projects be considered including the elimination of the turbines closest to shore to reduce visual impacts on historic properties, recreation, and tourism.

On November 18, 2022, BOEM published a Notice of Availability for the Draft EIS. As part of this process, BOEM accepts comments in the following ways:

- In hard copy form, delivered by hand or by mail, enclosed in an envelope labeled "Empire Wind COP Draft EIS" and addressed to Program Manager, Office of Renewable Energy, Bureau of Ocean Energy Management, 45600 Woodland Road, Sterling, Virginia 20166.
- Through the regulations.gov web portal by navigating to http://www.regulations.gov and searching for the docket number. Click the "Comment Now!" button to the right of the document link. Enter your information and comment, then click "Submit."
- By attending one of the EIS public hearings listed in the notice of availability and providing written or verbal comments.

The public comment period is scheduled to close on January 2, 2023. The input received via this process will be used to inform preparation of the Final EIS.

N.2.2.3. NHPA Section 106 Consultations

On April 29, 2021, BOEM contacted ACHP, New Jersey SHPO, and New York SHPO to provide Project information and notify of BOEM's intention to use the NEPA substitution process to fulfill Section 106 obligations under 36 CFR 800.8(c) in lieu of the procedures set forth in 36 CFR 800.3 through 800.6.

On April 29, 2021, BOEM contacted Absentee-Shawnee Tribe of Indians of Oklahoma, the Delaware Nation, Delaware Tribe of Indians, Eastern Shawnee Tribe of Oklahoma, the Mashantucket Pequot Tribal, the Mohegan Tribe of Indians of Connecticut, Shawnee Tribe, Stockbridge-Munsee Community Band of Mohican Indians, the Narragansett Indian Tribe, and the Shinnecock Indian Nation with information about the Projects, and an invitation to be a consulting party to the NHPA Section 106 review of the COP. BOEM also used this correspondence to notify of its intention to use the NEPA substitution process for Section 106 purposes, as described in 36 CFR 800.8(c), during its review.

On April 29, 2021, BOEM contacted 277 points of contact from governments and organizations by mail and email, sending information about the Projects, an invitation to be a consulting party to the NHPA Section 106 review of the COP, and the NOI to prepare an EIS. BOEM also used this correspondence to notify potential consulting parties of its intention to use the NEPA substitution process for Section 106

purposes, as described in 36 CFR 800.8(c), during its review. To aid those consulting parties not familiar with the NEPA substitution process, BOEM developed a *National Environmental Policy Act (NEPA) Substitution for Section 106 Consulting Party Guide* (available at https://www.boem.gov/sites/default/files/documents/renewable-energy/state-activities/NEPA-Substitution-Consulting-Party-Guide.pdf), which it attached to this correspondence.

During the period of May 17–19, 2021, outreach was conducted by phone to confirm receipt of correspondence among the governments and organizations that had not responded to the invitation to consult. The list of the governments and organizations contacted is included in Attachment C. Entities that responded to BOEM's invitation or were subsequently made known to BOEM and added as consulting parties are listed in Attachment D.

As follow-up to phone outreach, BOEM corresponded with an additional 10 points of contact from governments and organizations by email to provide the aforementioned materials on June 9, 2021.

On June 24, 2021, BOEM contacted ACHP, New Jersey SHPO, New York SHPO, Absentee-Shawnee Tribe of Indians of Oklahoma, the Delaware Nation, Delaware Tribe of Indians, the Mashantucket Pequot Tribal Nation, the Mohegan Tribe of Indians of Connecticut, the Narragansett Indian Tribe, Shawnee Tribe, Shinnecock Indian Nation, and points of contact from consulting party governments and organizations by mail and email to provide the NOI to prepare an EIS.

On June 28, 2021, BOEM distributed an email reminder to consulting parties regarding opportunity to participate in virtual public scoping meetings on June 30, July 8, and July 13, 2021.

On July 12, 2021, BOEM invited Absentee-Shawnee Tribe of Indians of Oklahoma, the Delaware Nation, Delaware Tribe of Indians, Eastern Shawnee Tribe of Oklahoma, the Mashantucket Pequot Tribal Nation, the Mohegan Tribe of Indians of Connecticut, the Narragansett Indian Tribe, Shawnee Tribe, the Shinnecock Indian Nation, and the Stockbridge-Munsee Community Band of Mohican Indians to participate in a government-to-government consultation meeting. The email outreach also notified the tribes that public scoping meeting recordings and materials could be accessed via the virtual meeting website.

During the period of July 13–30, 2021, BOEM corresponded with tribes who responded to the government-to-government consultation meeting invitation to schedule the meeting during a day and time of mutual availability.

On July 21, 2021, BOEM invited the Absentee-Shawnee Tribe of Indians of Oklahoma, Delaware Nation, Delaware Tribe of Indians, Eastern Shawnee Tribe of Oklahoma, the Mashantucket Pequot Tribal Nation, Mohegan Tribe of Indians of Connecticut, Narragansett Indian Tribe, Shawnee Tribe, and Shinnecock Indian Nation Stockbridge-Munsee Community Band of Mohican Indians to participate in a government-to-government consultation meeting on Tuesday, August 3, 2021.

BOEM hosted a government-to-government consultation meeting with the Mashantucket Pequot Tribal Nation, Shinnecock Indian Nation, Delaware Nation, Delaware Tribe of Indians, and Wampanoag Tribe of Gay Head (Aquinnah) on August 3, 2021. During the meeting, BOEM presented information about the Projects and solicited input regarding reasonable alternatives for consideration in the EIS; the identification of historic properties or potential effects on historic properties from activities associated with the proposed Projects; and potential measures to avoid, minimize, or mitigate impacts on environmental and cultural resources to be analyzed in the EIS. In a letter dated November 22, 2021, the Mashantucket Pequot Tribal Nation indicated that they no longer wanted to consult on the Projects.

On March 1, 2022, USACE submitted the findings and recommendations from its cultural resource investigations for the SBMT port infrastructure improvement project (NYCEDC 2021). On March 21,

2022, New York SHPO notified USACE of its concurrence of a finding of No Adverse Effect on historic properties from the SBMT port infrastructure improvement project (Attachment E, *New York SHPO Letter of Concurrence on Finding of No Adverse Effect on Historic Properties from South Brooklyn Marine Terminal Port Infrastructure Upgrades*).

BOEM distributed additional invitations to Borough of Allenhurst, Middletown Township, Ocean Grove Camp Meeting Association, Romer Shoal and West Bank Light Stations, Silver Gull Beach Club Historic District (National Park Service), and Water Witch (Monmouth Hills) Historic District on March 23, 2022.

BOEM distributed additional invitations to Gilgo State Park, Jones Beach State Park, Long Island State Parks (Region 9 of New York State Parks), and Robert Moses State Park on March 23, 2022.

BOEM distributed correspondence to notify consulting parties of Project modifications on September 7, 2022.

On September 12, 2022, BOEM held virtual NHPA Section 106 Consultation Meeting #1. The presentation included a brief Project overview, review of NEPA Substitution for NHPA Section 106 Process, overview of Section 106 consultation opportunities for the Projects, NHPA Section 110(f) compliance requirements, and question and answer session with discussion.

On November 18, 2022, BOEM shared with consulting parties the complete terrestrial archaeological resources report, complete marine archaeological resources report, complete historic resources visual effects assessment, supplemental architectural survey report, and complete cumulative visual effects assessment report. At that time, BOEM also shared with consulting parties a technical memorandum detailing the delineation of the APE for the undertaking.

BOEM held virtual NHPA Section 106 Consultation Meeting #2 during the Draft EIS public comment period. The presentation included a discussion of the documents distributed for consulting party review, and included a question and answer session with discussion.

BOEM distributed a Notice of Availability to notify the consulting parties that the Draft EIS was available for public review and comment for the period of November 18 to January 17, 2023.

BOEM plans to hold two additional consultation meetings to consult on the finding of effect and the resolution of adverse effects, to receive additional input regarding the Draft EIS analysis, and to consult on a Memorandum of Agreement prior to issuing the ROD.

Additional consultation meetings may be scheduled prior to issuance of the ROD if further consultation is needed to resolve adverse effects via a Memorandum of Agreement.

N.3. Application of the 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

> when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the NRHP 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 that 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.

N.4. Assessment of Effects on Historic Properties

This section documents assessment of effects for the affected historic properties in the APE, including areas for the Proposed Action and the connected action.

N.4.1 Proposed Action

N.4.1.1. Assessment of Effects on Historic Properties in the Marine APE

This section assesses effects on marine cultural resources (i.e., marine archaeological resources and ancient submerged landforms) in the marine APE. The extent of marine cultural investigations performed for the Proposed Action does not enable conclusive determinations of eligibility for listing identified resources in the NRHP; as such, BOEM is considering all identified marine archaeological resources and ancient submerged landforms eligible and, therefore, historic properties. Based on the information presented below, BOEM finds historic properties would be adversely affected in the marine APE.

N.4.1.1.1 Marine Archaeological Resources

Marine geophysical archaeological surveys within the marine APE identified a total of 30 magnetic anomalies, acoustic contacts, and buried reflectors representing potential marine archaeological resources (Table N-3; COP Volume 3, Appendix X; Empire 2022): seven within the Lease Area, 21 within the EW 1 submarine export cable route, and two within the EW 2 submarine export cable route. As ages of these resources cannot be confirmed through the marine cultural investigations at this time, these resources are all assumed to be archaeological and therefore cultural resources potentially eligible for listing in the NRHP. The majority of the potential marine archaeological resources likely relate to recent debris, industrial objects, and non-cultural geological features, although many may represent known and potential shipwrecks and related debris fields from the post-contact period (COP Volume 3, Appendix X; Empire 2022). Remotely operated vehicle surveys planned for the summer of 2022 may reveal that some of the identified targets do not represent potentially sensitive marine archaeological resources (COP Volume 2, Section 6.1.3.1; Empire 2022).

Table N-3 Marine Archaeological Resources within the Marine APE

Resource ID	Potential Source	Location within Marine APE	Finding of Effect
Target 01	Known shipwreck *Durley Chine*	Lease Area	Adverse effect, potential for AMM
Target 02	Known shipwreck *Irma C*	Lease Area	Adverse effect, potential for AMM
Target 03	Known shipwreck *Tarantula*	Lease Area	Adverse effect, potential for AMM
Target 04	Unknown	Lease Area	Adverse effect, potential for AMM
Target 05	Unknown	Lease Area	Adverse effect, potential for AMM
Target 06	Unknown	Lease Area	Adverse effect, potential for AMM
Target 07	Charted unidentified shipwreck AWOIS 7509	EW 1 Submarine ECR	Adverse effect, potential for AMM
Target 08	Charted unidentified shipwreck AWOIS 7509	EW 1 Submarine ECR	Adverse effect, potential for AMM
Target 09	Unknown	EW 1 Submarine ECR	Adverse effect, potential for AMM
Target 10	Known shipwreck *Chubby* or charted unidentified shipwrecks GWMD 35365, GWMD 255690, NOAA ENC 14137, or AWOIS 13410	EW 1 Submarine ECR	Adverse effect, potential for AMM
Target 11	Pier 3 of Brooklyn Army Terminal (Brooklyn Army Base) or unidentified moored vessel moored	EW 1 Submarine ECR	Adverse effect, potential for AMM
Target 12	Charted unidentified shipwreck NOAA ENC 16119	EW 1 Submarine ECR	Adverse effect, potential for AMM
Target 13	Charted unidentified shipwreck NOAA ENC 16120	EW 1 Submarine ECR	Adverse effect, potential for AMM
Target 14	Unknown	EW 2 Submarine ECR	Adverse effect, potential for AMM
Target 15	Unknown	EW 1 Submarine ECR	Adverse effect, potential for AMM
Target 16	Unknown	EW 1 Submarine ECR	Adverse effect, potential for AMM
Target 17	Unknown	EW 1 Submarine ECR	Adverse effect, potential for AMM
Target 18	Unknown	EW 1 Submarine ECR	Adverse effect, potential for AMM
Target 19	Known shipwreck *Happy Days*	Lease Area	Adverse effect, potential for AMM
Target 20	Unknown	EW 1 Submarine ECR	Adverse effect, potential for AMM
Target 21	Unknown	EW 1 Submarine ECR	Adverse effect, potential for AMM
Target 22	Unknown	EW 1 Submarine ECR	Adverse effect, potential for AMM
Target 23	Charted unidentified shipwrecks AWOIS 13730, AWOIS 14537, or NOAA ENC 13143	EW 1 Submarine ECR	Adverse effect, potential for AMM

Resource ID	Potential Source	Location within Marine APE	Finding of Effect
Target 24	Charted unidentified shipwrecks AWOIS 2747, AWOIS 9718, AWOIS 13842, GMWD 37482, GMWD 255049, GMWD 255842, or NOAA ENC 14139	EW 1 Submarine ECR	Adverse effect, potential for AMM
Target 25	Charted unidentified shipwreck NOAA ENC 16124	EW 1 Submarine ECR	Adverse effect, potential for AMM
Target 26	Charted unidentified shipwrecks AWOIS 14528 or NOAA ENC 17131	EW 1 Submarine ECR	Adverse effect, potential for AMM
Target 27	Charted unidentified shipwrecks AWOIS 2745, AWOIS 9720, GWMD 3744, GWMD 255051, GWMD 255840, or NOAA ENC 17132	EW 1 Submarine ECR	Adverse effect, potential for AMM
Target 28	Charted unidentified shipwrecks AWOIS 15087, GMWD 34784, NOAA ENC 3826, and NOAA ENC 3827	EW 2 Submarine ECR	Adverse effect, potential for AMM
Target 29	Charted unidentified shipwrecks AWOIS 13402, AWOIS 13403, GWMD 35375, GWMD 35736, GWMD 255682, GWMD 255854, NOAA ENC 10266, or NOAA ENC 1713	EW 1 Submarine ECR	Adverse effect, potential for AMM
Target 30	Charted unidentified shipwrecks AWOIS 13402, AWOIS 13403, GWMD 35375, GWMD 35736, GWMD 255682, GWMD 255854; NOAA ENC 10266, or NOAA ENC 1713	EW 1 Submarine ECR	Adverse effect, potential for AMM

Source: COP Volume 3, Appendix X; Empire 2022.
AMM = avoidance, minimization, or mitigation; AWOIS = Automated Wreck and Obstruction Information System; ECR = export cable route; ENC = Electronic Navigation Charts; EW = Empire Wind; GMWD = Global Maritime Wrecks Database; ID = identification

The severity of Project effects would depend on the extent to which integral or significant components of the affected marine archaeological resource are disturbed, damaged, or destroyed, resulting in the loss of contributing elements to the historic property's eligibility for listing in the NRHP. Avoidance of Targets 01–21, 23–26, and 28–30 was recommended by a minimum distance of 50 meters (164 feet) from the extent of the magnetic anomalies or acoustic contacts. Avoidance of Targets 22 and 27 was recommended by a minimum distance of 30 meters (98 feet) from the extent of the acoustic contacts. However, Empire has not committed to avoiding these resources and their associated avoidance buffers. Therefore, the 30 marine archaeological resources identified in Empire's marine cultural investigations that are assumed historic properties are anticipated to experience adverse effects from the undertaking. Adverse effects on these resources may potentially be avoided, minimized, or mitigated in the final Project design.

N.4.1.1.2 Ancient Submerged Landforms

Ancient submerged landforms may be individually eligible for listing in the NRHP or considered contributing elements to a TCP eligible for listing in the NRHP. Ancient submerged landforms in the marine APE are considered archaeologically sensitive. Although the marine geophysical remote-sensing

studies performed to identify historic properties did not find direct evidence of pre-contact Native American cultural materials, they do represent a good-faith effort to identify submerged historic properties within the APE potentially affected by the undertaking, as defined at 36 CFR 800.4. If undiscovered archaeological resources are present within the identified ancient submerged landforms and they retain sufficient integrity, these resources could be eligible for listing in the NRHP under Criterion D. Furthermore, ancient submerged landforms are considered by Native American tribes 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. In addition, BOEM recognizes these landforms are similar to features previously determined to be TCPs and that are presumed to be eligible for listing in the NRHP under Criterion A.

Empire's marine geophysical archaeological surveys identified 22 geomorphic features representing potential ancient submerged landforms with archaeological or TCP historic property potential (Table N-4; COP Volume 3, Appendix X; Empire 2022): 14 within the Lease Area, six within the EW 1 submarine export cable route, and two within the EW 2 submarine export cable route.

Table N-4 Ancient submerged landforms within the marine APE

Landform ID	Location within Marine APE	Finding of Effect
Target 31	EW 2 Submarine ECR	Adverse effect, potential for AMM
Target 32	EW 2 Submarine ECR	Adverse effect, potential for AMM
Target 33	EW 1 Submarine ECR	Adverse effect, potential for AMM
Target 34	EW 1 Submarine ECR	Adverse effect, potential for AMM
Target 35	EW 1 Submarine ECR	Adverse effect, potential for AMM
Target 36	EW 1 Submarine ECR	Adverse effect, potential for AMM
Target 37	Lease Area	Adverse effect, potential for AMM
Target 38	Lease Area	Adverse effect, potential for AMM
Target 39	Lease Area	Adverse effect, potential for AMM
Target 40	Lease Area	Adverse effect, potential for AMM
Target 41	Lease Area	Adverse effect, potential for AMM
Target 42	Lease Area	Adverse effect, potential for AMM
Target 43	Lease Area	Adverse effect, potential for AMM
Target 44	Lease Area	Adverse effect, potential for AMM
Target 45	Lease Area	Adverse effect, potential for AMM
Target 46	Lease Area	Adverse effect, potential for AMM
Target 47	Lease Area	Adverse effect, potential for AMM
Target 48	Lease Area	Adverse effect, potential for AMM
Target 49	Lease Area	Adverse effect, potential for AMM
Target 50	Lease Area	Adverse effect, potential for AMM
Target 51	EW 1 Submarine ECR	Adverse effect, potential for AMM
Target 52	EW 1 Submarine ECR	Adverse effect, potential for AMM

Source: COP, Appendix F, Table V-4; Empire 2022.
AMM = avoidance, minimization, or mitigation; ECR = export cable route; EW = Empire Wind; ID = identification

A geoarchaeological analysis of ancient submerged landforms analyzed a total of 31 borings in an attempt to field verify the HRG data and develop a temporal framework across the preliminary APE. Indicators of pedogenesis recovered from the borings represent portions of the former sub-aerial surfaces associated

with the Paleo Hudson. Radiocarbon dating established that these surfaces predate the period for which there is scientific evidence of human occupation of North America. Subsequent vibracore and borehole samples returned similarly aged submerged surfaces and indicated that submerged surfaces associated with Holocene and Pleistocene paleochannels were sparse and poorly preserved.

The severity of Project effects would depend on the extent to which integral or significant components of the affected ancient submerged landform are disturbed, damaged, or destroyed, resulting in the loss of contributing elements to the historic property's eligibility for listing in the NRHP. Avoidance or minimization measures were recommended for ancient submerged landforms; these measures may include micro-siting facilities and work zones away from features and avoidance buffers or adjusting burial depth of cabling across features. If avoidance is not feasible, additional archaeological investigation is recommended. This may include refined HRG survey, archival/background research, or diver/remotely operated vehicle verification to determine the source(s) of the target and assess its integrity, significance, and eligibility for listing in the NRHP as a historic property. However, development of the final Project design is ongoing, and it is currently unclear whether Empire would be able to avoid effects on the identified ancient submerged landforms. As such, the undertaking is anticipated to have adverse effects on the 22 ancient submerged landforms identified within the marine APE. Adverse effects on these resources may potentially be avoided, minimized, or mitigated in the final Project design.

N.4.1.2. Assessment of Effects on Historic Properties in the Terrestrial APE

Cultural resource investigations completed for the Proposed Action identified no historic properties within the terrestrial APE (COP Volume 3, Appendix Y; Empire 2022). The Projects have been designed to avoid adverse effects on terrestrial archaeological resources by siting onshore Project components within previously disturbed areas and existing road right-of-way to the extent practicable. Based on this information, BOEM finds no effect on historic properties in the terrestrial APE.

However, as deemed necessary by New York SHPO, Empire has committed to conducting archaeological monitoring during construction in up to seven locations within the terrestrial APE for EW 2 that have been determined to have an elevated, moderate potential for presently undiscovered terrestrial archaeological resources (COP Volume 3, Appendix Y; Empire 2022). Potential terrestrial archaeological resources or human remains identified during Empire's construction monitoring process may be subject to adverse effects. Empire will develop and implement an Unanticipated Discoveries Plan to minimize or mitigate impacts on potential presently undiscovered terrestrial archaeological resources and human remains that could be affected by the undertaking (COP Volume 3, Appendix Y; Empire 2022). This plan will be shared with the consulting parties for their review and comment.

N.4.1.3. Assessment of Effects on Historic Properties in the Visual APE

Review of the offshore visual area identified 15 historic districts and 25 individual historic properties, and review of the onshore visual area identified one historic district and three individual historic properties. Of these, 16 historic properties would be adversely affected by visual impacts from the proposed Projects (COP Volume 3, Appendix Z; Empire 2022). The 16 adversely affected historic properties within the visual APE, described below, are those that retain maritime setting and where maritime setting contributes to the properties' NRHP eligibility. Each property continues to offer significant seaward views that support the integrity of its maritime setting. Those seaward views include vantage points with the potential for an open view from each property toward the offshore Project elements. Where BOEM found adverse visual effects on these historic properties, BOEM also determined that the undertaking would cause cumulative visual effects (BOEM 2022). Cumulative effects are additive effects; where BOEM has determined adverse effects would occur from Project actions on historic properties, BOEM then assessed if those effects would add to the potential adverse effects of other reasonably foreseeable actions and thereby result in cumulative effects.

N.4.1.3.1 West Bank Light Station, Staten Island, New York

This property is in Lower New York Bay, approximately 3 nm (5.6 kilometers) east of New Dorp Beach, Staten Island, New York and is approximately 27.8 miles (44.7 kilometers) from the Wind Farm Development Area. The light station, constructed in 1901, consists of a cast iron caisson expanding in a trumpet shape to form a gallery that supports an iron conical tower surmounted by a black lantern (COP Volume 3, Appendix Z; Empire 2022:37, 49).

The West Bank Light Station (NR No. 06001230) was listed in the NRHP in 2006 under Criterion A for its association with the federal program of coastal maritime history, and Criterion C as an excellent example of maritime-related architecture. The property is listed as part of the Light Stations of the United States multiple property submission. The property's period of significance is 1901–1971 (COP Volume 3, Appendix Z; Empire 2022:37–38).

The West Bank Light Station is near the entrance to New York Harbor with a relatively unobstructed view toward the Projects between Sandy Hook and Rockaway Point. The light station's significance as a historic aid to navigation is tied substantially to its setting, and the introduction of the Projects would likely affect this setting. An expansive and unimpeded ocean view is considered a character-defining feature of the property's significance under Criteria A and C. It was assessed that the Projects would diminish the significant characteristics of the property and result in an adverse effect on the West Bank Light Station (COP Volume 3, Appendix Z; Empire 2022:37–38).

As described in the *Empire Wind Cumulative Historic Resources Visual Effects Analysis*, the West Bank Light Station is 27.6 miles from the nearest WTG associated with the Projects and 49.8 miles from the nearest potential WTG location for other wind energy development activities. The total number of potentially visible WTGs from West Bank Light Station is 105. Of these, 105 theoretically visible WTGs (100 percent) would be from the proposed Projects. As such, BOEM determined the Projects would incrementally add to the cumulative visual effects on the West Bank Light Station when combined with the effects of other past, present, or reasonably foreseeable future actions (BOEM 2022).

N.4.1.3.2 Breezy Point Surf Club Historic District in Gateway National Recreation Area, Rockaway, Queens, New York (National Parks Service)

The property is in Rockaway, Queens, New York and is approximately 22.0 miles (35.4 kilometers) from the Wind Farm Development Area. The Breezy Point Surf Club was initially constructed in 1937, with additional facilities constructed during the 1950s. The property consists of two sets of cabanas—the original set of small, plain 1937 structures and the 1950s set close to the ocean—pool and sports facilities, a restaurant, and ocean beach near the western tip of the Rockaway Peninsula within the Gateway National Recreation Area (COP Volume 3, Appendix Z; Empire 2022:30, 49).

Owned by the National Park Service, the Breezy Point Surf Club Historic District (CRIS No. 08101.011499) is NRHP-eligible under Criterion A for its association with the development of seaside recreation and entertainment during the Great Depression, and under Criterion C as a nearly intact example of mid-twentieth-century beach club and cabana complex. The property's period of significance is 1937–1963 (COP Volume 3, Appendix Z; Empire 2022:30).

This property is on the Rockaway Peninsula and has had clear ocean views since it was constructed. The beach club's facilities provide expansive views of the Atlantic Ocean in one of New York City's last undeveloped locations. As an unimpeded ocean view and recreational use are considered character-defining features of the property's significance, it was assessed that the Projects would diminish the significant characteristics of the property and result in an adverse effect on the Breezy Point Surf Club Historic District (COP Volume 3, Appendix Z; Empire 2022:30).

As described in the *Empire Wind Cumulative Historic Resources Visual Effects Analysis*, the Breezy Point Surf Club Historic District is 23.1 miles from the nearest WTG associated with the Projects and 45.4 miles from the nearest potential WTG location for other wind energy development activities. The total number of potentially visible WTGs from the Breezy Point Surf Club Historic District is 102. Of these, 102 theoretically visible WTGs (100 percent) would be from the proposed Projects. As such, BOEM determined the Projects would incrementally add to the cumulative visual effects on the Breezy Point Surf Club Historic District when combined with the effects of other past, present, or reasonably foreseeable future actions (BOEM 2022).

N.4.1.3.3 Silver Gull Beach Club Historic District, Gateway National Recreation Area, Rockaway, Queens, New York (National Park Service)

The property is in Rockaway, Queens, New York and is approximately 22.0 miles (35.4 kilometers) from the Wind Farm Development Area. The Silver Gull Beach Club was constructed in 1962 and consists of adjoining rows of cabanas, a club house, pool, athletic facilities, and ocean beach on the Rockaway Peninsula within the Gateway National Recreation Area (COP Volume 3, Appendix Z; Empire 2022:30–32, 49).

Owned by the National Park Service, the Silver Gull Beach Club Historic District (CRIS No. 08101.012423) is NRHP-eligible under Criterion A for its association with the development of seaside recreation and entertainment in the post-Second World War period, and under Criterion C as a nearly intact example of oceanfront recreation architecture. The property's period of significance is 1962–1963 (COP Volume 3, Appendix Z; Empire 2022:30–31).

This property is on the Rockaway Peninsula and has had clear ocean views since it was constructed. The beach club's facilities provide expansive views of the Atlantic Ocean in one of New York City's last undeveloped locations. As an unimpeded ocean view is considered a character-defining feature of the property's significance, it was assessed that the Projects would diminish the significant characteristics of the property and result in an adverse effect on the Silver Gull Beach Club Historic District (COP Volume 3, Appendix Z; Empire 2022:30–31).

As described in the *Empire Wind Cumulative Historic Resources Visual Effects Analysis*, the Silver Gull Beach Club Historic District is 22.1 miles from the nearest WTG associated with the Projects and 44.4 miles from the nearest potential WTG location for other wind energy development activities. The total number of potentially visible WTGs from the Silver Gull Beach Club Historic District is 114. Of these, 114 theoretically visible WTGs (100 percent) would be from the proposed Projects. As such, BOEM determined the Projects would incrementally add to the cumulative visual effects on the Silver Gull Beach Club Historic District when combined with the effects of other past, present, or reasonably foreseeable future actions (BOEM 2022).

N.4.1.3.4 Jacob Riis Park Historic District, Gateway National Recreation Area, Rockaway, Queens, New York (National Park Service)

The property is on the Rockaway Peninsula and is approximately 20.7 miles (33.2 kilometers) from the Wind Farm Development Area. Jacob Riis Park was created in 1932, led by New York City Park Commissioner Robert Moses. The park features a beachfront and parklands for recreational activities and includes several buildings, such as the prominent main bathhouse, that feature Art Deco designs (COP Volume 3, Appendix Z; Empire 2022:32, 50).

Owned by the National Park Service, Jacob Riis Park (NR No. 81000081), which is in the Gateway National Recreation Area, was listed in the NRHP in 1981 under Criterion C as an excellent example of

Work Progress Administration park design during the 1930s. The district's period of significance is 1932–1937 (COP Volume 3, Appendix Z; Empire 2022:32–33).

This property is on the Rockaway Peninsula and has had clear ocean views since it was constructed. The park's focus, both in terms of purpose and orientation, is the unobstructed access and view of the ocean. It was assessed that the introduction of the Projects in the property's ocean viewshed would diminish the significant characteristics of the property and result in an adverse effect on the Jacob Riis Park Historic District (COP Volume 3, Appendix Z; Empire 2022:32–33, 50).

As described in the *Empire Wind Cumulative Historic Resources Visual Effects Analysis*, the Jacob Riis Park Historic District is 20.8 miles from the nearest WTG associated with the Projects and 43.1 miles from the nearest potential WTG location for other wind energy development activities. The total number of potentially visible WTGs from the Jacob Riis Park Historic District is 131. Of these, 131 theoretically visible WTGs (100 percent) would be from the proposed Projects. As such, BOEM determined the Projects would incrementally add to the cumulative visual effects on the Jacob Riis Park Historic District when combined with the effects of other past, present, or reasonably foreseeable future actions (BOEM 2022).

N.4.1.3.5 Jones Beach State Park/Jones Beach State Park, Causeway and Parkway System, Hempstead/Oyster Bay, New York

The property is at 1 Ocean Parkway in Hempstead/Oyster Bay, New York and is approximately 12.8 miles (20.6 kilometers) from the Wind Farm Development Area. Construction of the Jones Beach State Park began in 1925 under the leadership of New York City Parks Commissioner Robert Moses and continued through mid-1950s. The park includes ocean and bay fronts, landscaped roads and paths, a boardwalk, a building complex consisting of bathhouses, and service and recreational facilities. Moses envisioned the park as a combination of natural landscapes and the oceanside transportation network (COP Volume 3, Appendix Z; Empire 2022:41, 50).

The Jones Beach State Park/Jones Beach State Park, Causeway and Parkway System (NR No. 81000081) was listed in the NRHP in 2005 under Criterion A for its association with the development of public oceanside recreation facilities on Long Island, and under Criterion C for the Beaux Arts design and Art Deco motifs of its buildings and the overall design of the park as a beach-oriented development. The property's period of significance is 1925–1955 (COP Volume 3, Appendix Z; Empire 2022:41).

This property is on Jones Beach Island and has had clear ocean views since it was constructed. The focus of the park, both in terms of purpose and orientation, is the ocean access and views it offers. It was assessed that the Projects would diminish these significant characteristics of the property and result in an adverse effect on the Jones Beach State Park/Jones Beach State Park, Causeway and Parkway System (COP Volume 3, Appendix Z; Empire 2022:41–42).

As described in the *Empire Wind Cumulative Historic Resources Visual Effects Analysis*, the Jones Beach State Park is 15.0 miles from the nearest WTG associated with the Projects and 31.7 miles from the nearest potential WTG location for other wind energy development activities. The total number of potentially visible WTGs from Riviera Apartments is 211. Of these, 147 theoretically visible WTGs (70 percent) would be from the proposed Projects. As such, BOEM determined the Projects would incrementally add to the cumulative visual effects on Jones Beach State Park when combined with the effects of other past, present, or reasonably foreseeable future actions (BOEM 2022).

N.4.1.3.6 Robert Moses State Park, Babylon/Islip, New York

The property is at 600 Robert Moses State Parkway at the western end of Fire Island in New York and is approximately 20.6 miles (34.8 kilometers) from the Wind Farm Development Area. Robert Moses State

Park (originally named Fire Island State Park) was established in 1908 as the first state park on Long Island. The park originally featured several bathhouses, beachfront, and open parkland. Robert Moses State Park was accessible only by ferry or private boat until the construction of the Robert Moses Causeway in 1964 (COP Volume 3, Appendix Z; Empire 2022:42, 50).

Robert Moses State Park (CRIS No. 10305.001592) is NRHP-eligible as an historic district under Criterion A for its association with the development of Long Island's south shore as a recreation destination for urban and suburban residents, and under Criterion C for its recreation architecture. Robert Moses State Park's period of significance is 1908–1964 (COP Volume 3, Appendix Z; Empire 2022:42).

This property is on Fire Island and has had clear ocean views since it was established as a state park. The focus of the park, both in terms of purpose and orientation, is the ocean access and views it provides. It was assessed that the introduction of the Projects within the park's ocean viewshed would diminish these significant characteristics of the property and result in an adverse effect on the Robert Moses State Park (COP Volume 3, Appendix Z; Empire 2022:42).

As described in the *Empire Wind Cumulative Historic Resources Visual Effects Analysis*, the Robert Moses State Park is 20.6 miles from the nearest WTG associated with the Projects and 24.4 miles from the nearest potential WTG location for other wind energy development activities. The total number of potentially visible WTGs from Robert Moses State Park is 211. Of these, 147 theoretically visible WTGs (70 percent) would be from the proposed Projects. As such, BOEM determined the Projects would incrementally add to the cumulative visual effects on Robert Moses State Park when combined with the effects of other past, present, or reasonably foreseeable future actions (BOEM 2022).

N.4.1.3.7 Fire Island Lighthouse, Islip, New York

The property is on Fire Island within the Fire Island National Seashore and is approximately 21.7 miles (36.0 kilometers) from the Wind Farm Development Area. The extant lighthouse was constructed in 1858, replacing the first lighthouse at the site that had been constructed in 1826. The lighthouse is 150 feet in height and features a hollow central column of cast iron clad in brick and covered with a cement wash. The original lamp was a first-order Fresnel lens, which was lit by a succession of various fuels until the light was electrified in 1939 (COP Volume 3, Appendix Z; Empire 2022:36, 50).

The Fire Island Lighthouse (NR No. 81000082) was listed in the NRHP in 1981. The lighthouse is listed Criterion A for its association with the early federally sponsored program of maritime navigational aids and is significant in the areas of maritime history, transportation, communication, commerce, and military. The property is also listed under Criterion C as an excellent example of mid-nineteenth century maritime engineering and architecture, and under Criterion D for its potential to contain significant post-contact archaeological deposits. The district's period of significance is 1825–1960 (COP Volume 3, Appendix Z; Empire 2022:36).

The property is on Fire Island and has had unimpeded ocean views since it was constructed. Unobstructed sightlines out to the Atlantic Ocean are an important characteristic of the lighthouse's setting and purpose as an aid to maritime navigation. It was assessed that the Projects would diminish this significant characteristic of the property and result in an adverse effect on the Fire Island Lighthouse (COP Volume 3, Appendix Z; Empire 2022:36–37).

As described in the *Empire Wind Cumulative Historic Resources Visual Effects Analysis*, the Fire Island Lighthouse is 21.7 miles from the nearest WTG associated with the Projects and 24.2 miles from the nearest potential WTG location for other wind energy development activities. The total number of potentially visible WTGs from Fire Island Lighthouse is 258. Of these, 147 theoretically visible WTGs (57 percent) would be from the proposed Projects. As such, BOEM determined the Projects would

incrementally add to the cumulative visual effects on Fire Island Lighthouse when combined with the effects of other past, present, or reasonably foreseeable future actions (BOEM 2022).

N.4.1.3.8 Fire Island Lighthouse Historic District, Islip, New York

The property is on Fire Island within the Fire Island National Seashore and is approximately 21.7 miles (36.0 kilometers) from the Wind Farm Development Area. The extant lighthouse was constructed in 1858, replacing the first lighthouse at the site that had been constructed in 1826. In addition to the lighthouse and Keeper's House, the Fire Island Lighthouse Historic District is composed of 14 other contributing buildings, sites, and structures (COP Volume 3, Appendix Z; Empire 2022:36, 50).

The Fire Island Lighthouse Historic District (NR No. 09001288) was listed in the NRHP in 2009. The district is listed under Criterion A for its association with the early federally sponsored program of maritime navigational aids and is significant in the areas of maritime history, transportation, communication, commerce, and military. The property is also listed under Criterion C as an excellent example of mid-nineteenth century maritime engineering and architecture, and under Criterion D for its potential to contain significant post-contact archaeological deposits. The district's period of significance is 1825–1960 (COP Volume 3, Appendix Z; Empire 2022:36).

The property is on Fire Island and has had unimpeded ocean views since it was constructed. Unobstructed sightlines out to the Atlantic Ocean are an important characteristic of the lighthouse's setting and purpose as an aid to maritime navigation. It was assessed that the Projects would diminish this significant characteristic of the property and result in an adverse effect on the Fire Island Lighthouse Historic District (COP Volume 3, Appendix Z; Empire 2022:36–37).

As described in the *Empire Wind Cumulative Historic Resources Visual Effects Analysis*, the Fire Island Lighthouse Historic District is 21.7 miles from the nearest WTG associated with the Projects and 24.2 miles from the nearest potential WTG location for other wind energy development activities. The total number of potentially visible WTGs from the Fire Island Lighthouse Historic is 211. Of these, 147 theoretically visible WTGs (70 percent) would be from the proposed Projects. As such, BOEM determined the Projects would incrementally add to the cumulative visual effects on the Fire Island Lighthouse Historic District when combined with the effects of other past, present, or reasonably foreseeable future actions (BOEM 2022).

N.4.1.3.9 Carrington House in Brook Haven, New York

The property is on Fire Island within the Fire Island National Seashore and is approximately 24.9 miles (40.1 kilometers) from the Wind Farm Development Area. Carrington House was constructed circa 1912. The Craftsman-style influenced bungalow is an early, intact example of resort community residences on Fire Island. Its Craftsman-style elements include its wood-shingle cladding and exposed rafter ends (COP Volume 3, Appendix Z; Empire 2022:37, 50).

Carrington House (National Register No. 13001057) was listed in the NRHP in 2014. The property is listed under Criterion A for its association with its owner's, theater director Frank Carrington, use of the residence as a salon for gay artists, actors, and writers during the mid-twentieth century. Carrington House is also listed under Criterion C as an intact example of beach bungalow architecture. The property's period of significance is 1912–1969, the period from its construction to the year Carrington deeded the property to the National Park Service (COP Volume 3, Appendix Z; Empire 2022:37).

The property is on Fire Island and has had unimpeded ocean views since it was constructed. As an unimpeded ocean view is considered a character-defining feature of the property's significance, it was assessed that the Projects would diminish the significant characteristics of the property and result in an adverse effect on the Carrington House (COP Volume 3, Appendix Z; Empire 2022:37).

As described in the *Empire Wind Cumulative Historic Resources Visual Effects Analysis*, the Carrington House is 26.1 miles from the nearest WTG associated with the Projects and 24.4 miles from the nearest potential WTG location for other wind energy development activities. The total number of potentially visible WTGs from the Carrington House is 211. Of these, 147 theoretically visible WTGs (70 percent) would be from the proposed Projects. As such, BOEM determined the Projects would incrementally add to the cumulative visual effects on the Carrington House when combined with the effects of other past, present, or reasonably foreseeable future actions (BOEM 2022).

N.4.1.3.10 Point O'Woods Historic District, Islip, New York

The property is located centrally on Fire Island and is approximately 24.0 miles (38.6 kilometers) from the Wind Farm Development Area. Point O'Woods was established in 1894 as a Methodist community by the Long Island Chautauqua Assembly Association. Point O'Woods includes 133 residential buildings, as well as additional community structures and maintenance facilities. Nearly all the buildings within the district feature Shingle style designs, popular among residents of shore communities in the late nineteenth and early twentieth centuries. It differs from other shore communities of the period in its overall design, which used curved roads and paths, rather than the more common rectangular grid plan (COP Volume 3, Appendix Z; Empire 2022:42, 50).

The Point O'Woods Historic District (CRIS No. 10302.003470) is NRHP-eligible under Criterion A for its association with the Chautauqua movement and development of private Methodist beach communities in the early twentieth century, and under Criterion C for its comprehensive and innovative design as a beach community. The district's period of significance is 1894 to circa 1962 (COP Volume 3, Appendix Z; Empire 2022:42-43).

The property is on Fire Island and has had clear ocean views since it was constructed. Ocean access and views were important considerations in the siting and establishment of the Point O'Woods community. It was assessed that the introduction of the Projects into the ocean viewshed of the community may diminish this significant characteristic of the property and result in an adverse effect on the Point O'Woods Historic District (COP Volume 3, Appendix Z; Empire 2022:42–43).

As described in the *Empire Wind Cumulative Historic Resources Visual Effects Analysis*, the Point O'Woods Historic District is 24.2 miles from the nearest WTG associated with the Projects and 24.2 miles from the nearest potential WTG location for other wind energy development activities. The total number of potentially visible WTGs from the Point O'Woods Historic District is 211. Of these, 147 theoretically visible WTGs (70 percent) would be from the proposed Projects. As such, BOEM determined the Projects would incrementally add to the cumulative visual effects on the Point O'Woods Historic District when combined with the effects of other past, present, or reasonably foreseeable future actions (BOEM 2022).

N.4.1.3.11 Romer Shoal Light Station, Lower New York Bay, New Jersey

The property is offshore within Lower New York Bay and is approximately 25.7 miles (41.3 kilometers) from the Wind Farm Development Area. Romer Shoal Light Station was built in 1898 as a maritime navigational aid at the entry to New York Harbor. The light station consists of a 30-foot-diameter cast iron cylindrical caisson filled with rock and concrete that supports a four-story cast iron tower. A circular watch room surrounded by a galley and surmounted by a lantern sits atop the tower. The Romer Shoal Light Station was originally lit by a fourth-order Fresnel lens but has been automated since 1966 (COP Volume 3, Appendix Z; Empire 2022:43, 50).

Romer Shoal Light Station (NR No. 06001304) was listed in the NRHP in 2006 under Criterion A for its association with the late nineteenth century federal program to provide maritime navigational aids in the

United States and locally to provide safe access to New York Harbor, and under Criterion C as an intact example of maritime engineering and architecture at the turn of the twentieth century. The light station's period of significance is 1898–1966 (COP Volume 3, Appendix Z; Empire 2022:43).

The property is offshore within Lower New York Bay and has had unimpeded ocean views since it was constructed. Unobstructed sightlines out to the Atlantic Ocean are an important characteristic of the lighthouse's setting and purpose as an aid to maritime navigation. It was assessed that the Projects would diminish this significant characteristic of the property and result in an adverse effect on Romer Shoal Light Station (COP Volume 3, Appendix Z; Empire 2022:43–44).

As described in the *Empire Wind Cumulative Historic Resources Visual Effects Analysis*, the Romer Shoal Light Station is 25.3 miles from the nearest WTG associated with the Projects and 47.4 miles from the nearest potential WTG location for other wind energy development activities. The total number of potentially visible WTGs from Romer Shoal Light Station is 130. Of these, 130 theoretically visible WTGs (100 percent) would be from the proposed Projects. As such, BOEM determined the Projects would incrementally add to the cumulative visual effects on Romer Shoal Light Station when combined with the effects of other past, present, or reasonably foreseeable future actions (BOEM 2022).

N.4.1.3.12 Sandy Hook Light, Gateway National Recreation Area, Middleton, New Jersey (National Park Service)

The property is on the Sandy Hook peninsula and is approximately 24.0 miles (38.6 kilometers) from the Wind Farm Development Area. Constructed in 1764, Sandy Hook Light is the oldest extant lighthouse in in the United States. The lighthouse's tower is 103 feet in height and consists of an octagonal brick structure that tapers from a base diameter of 29 feet to 15 feet at the top. The lantern and catwalk are accessed by an interior cast iron staircase (COP Volume 3, Appendix Z; Empire 2022:34, 50).

Owned by the National Park Service, Sandy Hook Light (NR No. 66000468), which is in the Gateway National Recreation Area, was listed in the NRHP in 1966 under Criterion A for its association with the colonial program to construct maritime navigational aids along the eastern seaboard. The lighthouse's period of significance is 1764–1799. The property was designated as an NHL in 1964 (COP Volume 3, Appendix Z; Empire 2022:34).

The property is on the Sandy Hook peninsula and has had unobstructed ocean views since it was constructed. Clear sightlines out to the Atlantic Ocean are an important characteristic of Sandy Hook Light's setting and purpose as an aid to maritime navigation. It was assessed that the Projects would diminish this significant characteristic of the property and result in an adverse effect on Sandy Hook Light (COP Volume 3, Appendix Z; Empire 2022:34).

As described in the *Empire Wind Cumulative Historic Resources Visual Effects Analysis*, Sandy Hook Light is 24.3 miles from the nearest WTG associated with the Projects and 46.1 miles from the nearest potential WTG location for other wind energy development activities. The total number of potentially visible WTGs from Sandy Hook Light is 154. Of these, 147 theoretically visible WTGs (95 percent) would be from the proposed Projects. As such, BOEM determined the Projects would incrementally add to the cumulative visual effects on Sandy Hook Light when combined with the effects of other past, present, or reasonably foreseeable future actions (BOEM 2022).

N.4.1.3.13 Fort Hancock, U.S. Life Saving Station in Gateway National Recreation Area, Highlands, New Jersey (National Park Service)

The property is on the Sandy Hook peninsula approximately 22.4 miles (36.3 kilometers) from the Wind Farm Development Area. Constructed in 1894, the station was one of the six original U.S. Life Saving Service stations in New Jersey. The property was designed in the Shingle style, but its railings and

framing principals exhibit Craftsman-style influences. The Life Saving Station was deactivated in 1949 and has served as a visitor center for the Gateway National Recreation Area since 1974 (COP Volume 3, Appendix Z; Empire 2022:35, 50).

Owned by the National Park Service, Fort Hancock, U.S. Life Saving Station (National Register No. 81000080), which is in the Gateway National Recreation Area, was listed in the NRHP in 1981 under Criterion A for its association with the earliest federally sponsored efforts to save life and property from coastal shipwrecks, and under Criterion C as an example of late-nineteenth-century New Jersey coastal utilitarian architecture. The property's period of significance is 1894–1949 (COP Volume 3, Appendix Z; Empire 2022:35).

The property is on the Sandy Hook peninsula and has had unobstructed ocean views since it was constructed. Clear sightlines out to the Atlantic Ocean are an important characteristic of Fort Hancock, U.S. Life Saving Station's setting and purpose as life-saving station. It was assessed that the Projects would diminish this significant characteristic of the property and result in an adverse effect on Fort Hancock, U.S. Life Saving Station (COP Volume 3, Appendix Z; Empire 2022:35).

As described in the *Empire Wind Cumulative Historic Resources Visual Effects Analysis*, Fort Hancock, U.S. Life Saving Station is 22.6 miles from the nearest WTG associated with the Projects and 35.3 miles from the nearest potential WTG location for other wind energy development activities. The total number of potentially visible WTGs from Fort Hancock, U.S. Life Saving Station is 106. Of these, 106 theoretically visible WTGs (100 percent) would be from the proposed Projects. As such, BOEM determined the Projects would incrementally add to the cumulative visual effects on Fort Hancock, U.S. Life Saving Station when combined with the effects of other past, present, or reasonably foreseeable future actions (BOEM 2022).

N.4.1.3.14 Allenhurst Residential Historic District, Allenhurst, New Jersey

The property is in eastern Monmouth County, New Jersey and is approximately 24.3 miles (39.1 kilometers) from the Wind Farm Development Area. The Allenhurst Residential Historic District is composed of 290 residences, 202 outbuildings, a municipal building, a church, a restaurant, and the Allenhurst Beach Complex. Most of the buildings within the district were constructed around the turn of the twentieth century by the Coast Land Improvement Company. Architectural styles including Tudor Revival, Gothic Revival, Queen Anne, Prairie, Mission, Shingle, and Craftsman are exhibited within the district (COP Volume 3, Appendix Z; Empire 2022:45, 51).

The Allenhurst Residential Historic District (NR No. 10000353) is listed in the NRHP under Criterion C as an example of late nineteenth and early twentieth century community development that employs a number of the popular architectural styles of this period. The district's period of significance is 1895–1930 (COP Volume 3, Appendix Z; Empire 2022:45).

This property is on the eastern shoreline of Monmouth County and was constructed in part to provide residents with ocean access and views. The introduction of the Projects within the ocean viewshed of the district would likely alter this relationship between the Atlantic Ocean and the planned community and diminish the characteristics for which the historic district is significant. Therefore, it was assessed that the Projects would have an adverse effect on the Allenhurst Residential Historic District (COP Volume 3, Appendix Z; Empire 2022:45).

As described in the *Empire Wind Cumulative Historic Resources Visual Effects Analysis*, the Allenhurst Residential District is 25.0 miles from the nearest WTG associated with the Projects and 39.0 miles from the nearest potential WTG location for other wind energy development activities. The total number of potentially visible WTGs from the Allenhurst Residential District is 128. Of these, 114 theoretically

visible WTGs (90 percent) would be from the proposed Projects. As such, BOEM determined the Projects would incrementally add to the cumulative visual effects on the Allenhurst Residential District when combined with the effects of other past, present, or reasonably foreseeable future actions (BOEM 2022).

N.4.1.3.15 Ocean Grove Camp Meeting Association Historic District, Ocean Grove, New Jersey

The property is in Ocean Grove in western Monmouth County, New Jersey and is approximately 25.4 miles (40.9 kilometers) from the Wind Farm Development Area. The community of Ocean Grove was established in 1870 by the Methodist Church as a seaside resort, religious assembly, and spiritual haven for congregants. The Ocean Grove Camp Meeting Association Historic District is composed of almost 1,000 buildings, with nearly three-quarters designed in the Stick style. All properties within the district are owned by the Ocean Grove Camp Meeting Association (COP Volume 3, Appendix Z; Empire 2022:46, 51).

The Ocean Grove Camp Meeting Association Historic District (NR No. 76001170) was listed in the NRHP in 1976 under Criterion A for its association with the religious camp as a planned community, and under Criterion C for its Stick-style architecture and the nineteenth century acoustical science and ventilation system in its Great Auditorium. The district's period of significance is 1870–1894 (COP Volume 3, Appendix Z; Empire 2022:46).

This property is on eastern shoreline of Monmouth County and was constructed in part to provide residents with ocean access and views. The introduction of the Projects within the ocean viewshed of the district would likely alter this relationship between the Atlantic Ocean and the planned community and diminish the characteristics for which the historic district is significant. Therefore, it was assessed that the Projects would have an adverse effect on the Ocean Grove Camp Meeting Association Historic District (COP Volume 3, Appendix Z; Empire 2022:46).

As described in the *Empire Wind Cumulative Historic Resources Visual Effects Analysis*, the Ocean Grove Camp Meeting Association Historic District is 25.5 miles from the nearest WTG associated with the Projects and 37.4 miles from the nearest potential WTG location for other wind energy development activities. The total number of potentially visible WTGs from the Ocean Grove Camp Meeting Association Historic District is 141. Of these, 115 theoretically visible WTGs (82 percent) would be from the proposed Projects. As such, BOEM determined the Projects would incrementally add to the cumulative visual effects on the Ocean Grove Camp Meeting Association Historic District when combined with the effects of other past, present, or reasonably foreseeable future actions (BOEM 2022).

N.4.1.3.16 Water Witch (Monmouth Hills) Historic District, Middleton, New Jersey

The property is inland on the Atlantic Highlands in Monmouth County, New Jersey and is approximately 22.8 miles (36.6 kilometers) from the Wind Farm Development Area. The Water Witch Club Historic District contains what was known historically as the Water Witch Club, a late nineteenth century and early twentieth century romantically designed summer community. The district consists of a clubhouse/ casino; 21 summer cottages, all constructed between 1896 and 1909; and 28 contributing structures. These 28 contributing structures consist of the narrow gravel roadway system and a series of peanut stone (a distinctive local sandstone composite) structures including gateposts, retaining walls, walks, gutters, and staircases (COP Volume 3, Appendix Z; Empire 2022:47, 51; Tomkins 2004:3).

The Water Witch (Monmouth Hills) Historic District (NR No. 04000147) was listed in the NRHP in 2004 under Criterion A for its association with the development of the Atlantic Highlands as a professional-class summer community during the late nineteenth and early twentieth century; under Criterion B for its association with the life of Frederick P. Hill, a significant architect who designed and resided in

Monmouth Hills; and under Criterion C for its contributions to community planning, construction techniques, and architecture as a designed community featuring winding gravel roads, vegetated lots, and hills offering scenic views of the ocean. The district's period of significance is 1895–1930 (COP Volume 3, Appendix Z; Empire 2022:47; Tomkins 2004:26).

This property is on the eastern shoreline of Monmouth County and was constructed in part to provide residents with picturesque ocean views. The introduction of the Projects within the ocean viewshed of the district would likely alter this relationship between the Atlantic Ocean and the planned community and diminish the characteristics for which the historic district is significant. Therefore, it was assessed that the Projects would have an adverse effect on the Water Witch (Monmouth Hills) Historic District (COP Volume 3, Appendix Z; Empire 2022:47).

As described in the *Empire Wind Cumulative Historic Resources Visual Effects Analysis*, the Water Witch (Monmouth Hills) Historic District is 22.9 miles from the nearest WTG associated with the Projects and 43.8 miles from the nearest potential WTG location for other wind energy development activities. The total number of potentially visible WTGs from Water Witch (Monmouth Hills) Historic District is 239. Of these, 147 theoretically visible WTGs (62 percent) would be from the proposed Projects. As such, BOEM determined the Projects would incrementally add to the cumulative visual effects on the Water Witch (Monmouth Hills) Historic District when combined with the effects of other past, present, or reasonably foreseeable future actions (BOEM 2022).

N.4.2 Connected Action

This section assesses effects from the connected action on historic properties in the APE for the Empire Wind undertaking. Effects were previously assessed for the SBMT port infrastructure project; New York SHPO notified USACE of its concurrence on a finding of No Adverse Effect on historic properties from SBMT project activities (Attachment E, *New York SHPO Letter of Concurrence on Finding of No Adverse Effect on Historic Properties from South Brooklyn Marine Terminal Port Infrastructure Upgrades*). BOEM has reviewed that prior assessment and agrees with the USACE findings as follows.

Cultural resource investigations completed for the connected action identified no historic properties within the terrestrial APE (NYCEDC 2021). Land where ground disturbance associated with SBMT port improvement activities are proposed has been determined to have been previously disturbed or altered. As such, BOEM finds no historic properties affected from the connected action in the terrestrial APE.

Cultural resource investigations completed for the connected action identified no historic properties within the marine APE (NYCEDC 2021). Submerged areas where dredging associated with SBMT port improvement activities are proposed has been determined to have been previously disturbed or altered. As such, BOEM finds no historic properties affected from the connected action in the marine APE.

Review of the visual APE for the connected action identified five architectural resources that are historic properties: the Bush Terminal Historic District, the American Can Company building, Storehouse Number 2 (of the U.S. Navy Fleet Supply Base), the Gowanus Expressway Viaduct, and Intermediate School 136. NYCEDC (2021) recommended that the SBMT project would have no effect on three of these historic properties—the American Can Company building, the Gowanus Expressway Viaduct, and Intermediate School 136—because there would be no physical impact on these properties from the SBMT improvements and views from these properties to the SBMT are obstructed by intervening development. NYCEDC (2021) recommended that the SBMT project would have no adverse effect on two historic properties—the Bush Terminal Historic District and Storehouse Number 2. The port improvement activities would not physically affect these two properties and, while the SBMT improvements would be visible from the Bush Terminal Historic District and Storehouse Number 2, the visual alterations are consistent with and sustain the setting of the historic properties as part of a working waterfront.

As such, BOEM finds No Adverse Effect on historic properties in the APE from the connected action.

N.4.3 Summary of Adversely Affected Historic Properties

N.4.3.1. Proposed Action

N.4.3.1.1 Adverse Effects on Historic Properties in the Marine APE

The Projects would have adverse effects on 52 known historic properties within the marine APE: 30 marine archaeological resources and 22 ancient submerged landforms. Empire intends to prioritize avoidance of the 30 marine archaeological resources (Targets 01–30) and their associated recommended avoidance buffers. Empire's preferred method for addressing potential effects on ancient submerged landforms (Targets 31–52) is through avoidance. Avoidance of a historic property would result in no effect on the historic property. However, development of the final Project design is ongoing, and it is currently unclear whether Empire would be able to avoid adverse effects. Additionally, based upon the current layout for the Proposed Action presented in the COP, Targets 31–36 and 40–50 are not avoidable in their entirety. Therefore, BOEM has determined the undertaking would have adverse effects on historic properties within the marine APE.

N.4.3.1.2 Adverse Effects on Historic Properties in the Terrestrial APE

The Projects have been designed to avoid adverse effects on terrestrial archaeological resources by siting onshore Project components within previously disturbed areas and existing road right-of-way to the extent practicable. No known historic properties were identified within the terrestrial APE. Therefore, BOEM finds no effect on known terrestrial archaeological historic properties.

Empire is considering archaeological monitoring at seven locations for EW 2 based on the presence of upland terrain that may contain intact native soils below the fill cap and were evaluated to be sensitive for the presence of precontact period archaeological resources. If archaeological resources or human remains are identified during Project construction, operations, or decommissioning, the onsite construction supervisor would stop work immediately and follow the protocols outlined in the Unanticipated Discoveries Plan. Terrestrial archaeological resources discovered during construction could be historic properties eligible for the NRHP and may experience adverse effects from the undertaking.

N.4.3.1.3 Adverse Effects on Historic Properties in the Visual APE

Based on the information BOEM has available from the studies conducted to identify historic properties within the visual APE of the Projects and the assessment of effects upon those properties determined in consultation with the consulting parties, BOEM has found that the Projects would have a direct adverse visual effect on:

- West Bank Light Station in Staten Island, New York
- Breezy Point Surf Club Historic District, Gateway National Recreation Area (National Park Service unit) in Rockaway, Queens, New York
- Silver Gull Beach Club Historic District, Gateway National Recreation Area (National Park Service unit) in Rockaway, Queens, New York
- Jacob Riis Park Historic District, Gateway National Recreation Area (National Park Service unit) in Rockaway, Queens, New York
- Jones Beach State Park, Parkway and Causeway System, Hempstead/Oyster Bay, New York
- Robert Moses State Park in Babylon/Islip, New York

- Fire Island Lighthouse in Islip, New York
- Fire Island Light Station Historic District in Islip, New York
- Carrington House in Brook Haven, New York
- Point O'Woods Historic District in Islip, New York
- Romer Shoal Light Station in Lower New York Bay, New Jersey
- Sandy Hook Light, Gateway National Recreation Area (National Park Service unit) in Middleton, New Jersey
- Fort Hancock, U.S. Life Saving Station, Gateway National Recreation Area (National Park Service unit) in Highlands, New Jersey
- Allenhurst Residential Historic District in Allenhurst, New Jersey
- Ocean Grove Camp Meeting Association District in Ocean Grove, New Jersey
- Water Witch (Monmouth Hills) Historic District in Middleton, New Jersey

The undertaking would affect the character of the properties' settings that contributes to their historic significance by introducing visual elements that are out of character with the historic setting of the properties. BOEM did, however, determine that, due to the distance and open viewshed, the integrity of the properties would not be so diminished as to disqualify any of them for NRHP eligibility.

The adverse effects on the viewshed of the above-ground historic properties would occupy the space for approximately 35 years, but they are unavoidable for reasons discussed in *Assessment of Effects on Historic Properties in the Visual APE* (Section N.4.1.3). This application of the criteria of adverse effect and determination that the effects are direct are based on pertinent NRHP bulletins, subsequent clarification and guidance by the National Park Service and ACHP, and other documentation, including professionally prepared viewshed assessments and computer-simulated photographs.

N.4.3.2. Connected Action

No known historic properties were identified within the terrestrial APE or the marine APE for the connected action. Therefore, BOEM finds the SBMT project would have no historic properties affected. Within the visual APE, the SBMT project would have no effect on three historic properties and no adverse effect on two historic properties. BOEM agrees with USACE's finding of No Adverse Effect on historic properties from the SBMT port infrastructure improvement project, which received New York SHPO concurrence (Attachment E, *New York SHPO Letter of Concurrence on Finding of No Adverse Effect on Historic Properties from South Brooklyn Marine Terminal Port Infrastructure Upgrades*).

As such, BOEM finds No Adverse Effect on historic properties in the APE from the connected action.

N.5. National Historic Landmarks and the NHPA Section 106 Process

The National Park Service, which administers the NHL program for the Secretary of the Interior, describes NHLs and requirements for NHLs as follows:

> National Historic Landmarks (NHL) are designated by the Secretary under the authority of the Historic Sites Act of 1935, which authorizes the Secretary to identify historic and archaeological sites, buildings, and objects which "possess exceptional value as commemorating or illustrating the history of the United States" Section 110(f) of the NHPA requires that Federal agencies exercise a higher standard of care when considering undertakings that may directly and

> adversely affect NHLs. The law requires that agencies, "to the maximum extent possible, undertake such planning and actions as may be necessary to minimize harm to such landmark." In those cases when an agency's undertaking directly and adversely affects an NHL, or when Federal permits, licenses, grants, and other programs and projects under its jurisdiction or carried out by a state or local government pursuant to a Federal delegation or approval so affect an NHL, the agency should consider all prudent and feasible alternatives to avoid an adverse effect on the NHL.

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

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

The Historic Resources Visual Effects Assessment identified four NHLs in the visual APE for the Projects: Green-Wood Cemetery, Cyclone Roller Coaster, Fort Hancock and Sandy Hook Proving Ground Historic District, and Sandy Hook Light (COP Volume 3, Appendix Z; Empire 2022). BOEM has determined that only one of the four NHLs in the visual APE for the Projects, Sandy Hook Light (Gateway National Recreation Area, National Park Service unit), would be adversely affected by the Projects.

The Green-Wood Cemetery (NR No. 97000228) was established in 1838. The property is on 5th Avenue in Brooklyn, New York. The cemetery is one of the earliest and most elaborate remaining examples of rural or "garden" landscape cemeteries in the state. The cemetery landscape was designed by Davis Bates Douglass, with cemetery architecture by Richard Upjohn & Sons. The 478-acre (193.4-hectare) cemetery contains more than 600,000 burials, including notable individuals such as telegraphy inventor Samuel F.B. Morse, former New York Governor DeWitt Clinton, composer Leonard Bernstein, and painter Jean-Michel Basquiat. The Green-Wood Cemetery was listed in the NRHP in 1997 under Criterion C for Douglass' outstanding landscape design, the architecture of Upjohn & Sons, and the sculptural quality of its monuments. The Green-Wood Cemetery was designated an NHL in 2006. Although the proposed onshore substation and O&M facility would be partially visible from one of the highest topographic points of the cemetery, it would be a minor middleground element in the built environment of the Gowanus Bay shoreline. As such, BOEM finds there would be No Adverse Effect on Green-Wood Cemetery (COP Volume 3, Appendix Z; Empire 2022:46–47).

The Cyclone Roller Coaster (NR No. 91000907) was built in 1927. The property is at 834 Surf Avenue in Coney Island, Brooklyn, New York. The wooden roller coaster has a 3,000-foot track with a vertical drop of almost 100 feet. The Cyclone Roller Coaster was listed in the NRHP in 1991 under Criterion A for its association with the development of seaside recreation during the early twentieth century, and under Criterion C as an example of extreme engineering for a recreational purpose. The property's period of significance is 1927–1941. The Cyclone Roller Coaster was designated an NHL in 1991. While the offshore components of the Projects would be viewable from this property, ocean views were not an important consideration in the property's design and siting. It was assessed that the Project-related visual

effects would not diminish the significance of the character-defining criteria for which the property was listed in the NRHP. As such, BOEM finds there would be No Adverse Effect on the Cyclone Roller Coaster (COP Volume 3, Appendix Z; Empire 2022:27–28).

The Fort Hancock and Sandy Hook Proving Ground Historic District (NR No. 80002505) is on the Sandy Hook peninsula in Middletown Township, New Jersey. From 1874 to 1919, the 380-acre Sandy Hook Proving Ground was used by the U.S. Army as a weapon testing area, including the testing of innovations such as rifling smooth-bore cannon, breech-loading guns, rapid-fire guns, and armor-piercing shot. Fort Hancock was constructed in 1895 and the first garrison of artillerists were stationed there in 1898, as the fort became the principal fortification responsible for the defense of New York Harbor. The Fort Hancock and Sandy Hook Proving Ground Historic District was listed in the NRHP in 1980 under Criterion A as the key fortification guarding the approaches to New York Harbor and for its role in the development of weaponry used by the U.S. Coast Artillery and U.S. Field Artillery in the late nineteenth and early twentieth centuries. The district's period of significance is 1874–1919, when the weapon testing program was ended at Fort Hancock. The historic district was designated an NHL in 1982. While the Projects would be viewable from this property, views of the ocean were not a specific consideration in the property's design and siting. It was assessed that the Project-related visual effects would not diminish the significance of the character-defining criterion for which the property was listed in the NRHP. As such, BOEM finds there would be No Adverse Effect on the Fort Hancock and Sandy Hook Proving Ground Historic District (COP Volume 3, Appendix Z; Empire 2022:38).

Sandy Hook Light (NR No. 66000468) was constructed in 1764 and is the oldest extant lighthouse in the United States. The 103-foot lighthouse is tapering octagonal brick tower topped with a cast iron lantern and catwalk. Owned by the National Park Service, Sandy Hook Light, which is in Gateway National Recreation Area, was listed in the NRHP in 1966 under Criterion A for its association with the colonial program to construct maritime navigational aids along the eastern seaboard. The lighthouse's period of significance is 1764–1799. The property was designated as an NHL in 1964. Clear sightlines out to the Atlantic Ocean are an important characteristic of Sandy Hook Light's setting and purpose as an aid to maritime navigation. As the Projects would diminish this significant characteristic of the property, BOEM finds there would be an Adverse Effect on the Sandy Hook Light (COP Volume 3, Appendix Z; Empire 2022:38).

BOEM considered prudent and feasible alternatives to avoid adverse effects on the Sandy Hook Light NHL, applying *The Secretary of the Interior's Standards and Guidelines for Federal Agency Historic Preservation Programs Pursuant to the National Historic Preservation Act* (NPS 2013), which is presented by the National Park Service Federal Preservation Institute under Standard 4 as such:

> Where such alternatives appear to require undue cost or to compromise the undertaking's goals and objectives, the agency must balance those goals and objectives with the intent of section 110(f). In doing so, the agency should consider:
> (1) the magnitude of the undertaking's harm to the historical, archaeological and cultural qualities of the NHL,
> (2) the public interest in the NHL and in the undertaking as proposed, and,
> (3) the effect a mitigation action would have on meeting the goals and objectives of the undertaking.

BOEM considered seven alternatives to the Proposed Action. Among these, Alternative B considered removal of select WTG positions from development within the Lease Area for the purpose of reducing visual impacts in balance with the undertaking's goals and objectives. While the WTGs identified for removal under Alternative B are those closest to shore and removal could lessen the visual impact of the

wind farm on Sandy Hook Light, the overall visual impact of the wind farm would still result in an adverse effects on the NHL.

BOEM has planned and is taking action to minimize harm, as required by NHPA Section 110(f) at 36 CFR 800.10, to the Sandy Hook Light NHL. Descriptions of actions to minimize or mitigate adverse effects are summarized in Section N.6 and are discussed in greater detail in Attachment A, *Memorandum of Agreement*. Actions to minimize visual adverse effects on Sandy Hook Light include using non-reflective white and light gray paint on offshore structures (i.e., WTGs and OSS) and using navigational lighting that minimizes the visibility of the WTGs and OSS. Measures to mitigate adverse effects on Sandy Hook Light may include funding for structural survey of the property or other activities identified through consultation. Implementation of a mitigation measure to resolve visual adverse effects on Sandy Hook Light would be compensatory and consistent with the nature, scope, size, and magnitude of visual impacts, including cumulative visual impacts, caused by the undertaking.

In transmittal of this Finding of Adverse Effect document to the National Park Service, BOEM will specifically request National Park Service consulting party points of contact provide input from National Park Service's NHL Program pursuant to 36 CFR 800.10I, to which the Secretary of the Interior has delegated consultation authority, and will address this request to the NHL Program lead for the region.

N.6. Actions to Avoid, Minimize, or Mitigate Adverse Effects

BOEM will consult with federally recognized tribes, SHPOs, ACHP, and consulting parties to develop measures to avoid, minimize, or mitigate adverse effects for certain historic properties identified in the APE as adversely affected by the Projects. Specifically, BOEM's consultation will develop measures to avoid known terrestrial archaeological historic properties and marine historic properties (i.e., marine archaeological resources and ancient submerged landforms) and minimize visual effects on architectural historic properties. BOEM will also consult to develop mitigation measures that would be triggered in cases where avoidance of known ancient submerged landforms is not feasible. The Projects' unanticipated discovery plan will include a consultation process to determine appropriate mitigation in cases where there is unanticipated discovery of a previously unknown terrestrial or marine archaeological resource that is not currently found to be subject to adverse effects from the Projects.

As part of the NRHP Section 106 process, Empire has committed to APMs as conditions for approval of issuance of BOEM's permit (Tetra Tech 2021b), including:

1. If avoidance of historic properties in the marine APE is not feasible, minimizing adverse effects by micro-siting Project components through recommended avoidance buffers while remaining outside of the historic properties' perimeters. Empire could propose a combination of onsite and offsite mitigation that would be applied to each marine historic property where adverse effects cannot be avoided or minimized. A marine archaeological resource treatment plan would be developed in consultation with the appropriate consulting parties with a nexus to the Projects.
2. Implementing the Unanticipated Marine Archaeological Resources Discoveries Plan (COP Volume 3, Appendix X; Empire 2022) to minimize or mitigate impacts on presently undiscovered marine cultural resources that could potentially be affected by Project construction. Implementation of the Unanticipated Marine Archaeological Resources Discoveries Plan would reduce potential impacts on undiscovered archaeological resources to a minor level by preventing further physical impacts on the archaeological resources encountered during construction.
3. As required by BOEM and deemed necessary by New York SHPO, conducting archaeological monitoring during construction in three locations on Barnum Island for EW 2 that have been previously determined to have a moderate potential for undiscovered archaeological resources. Archaeological monitoring would reduce potential impacts on undiscovered archaeological resources

to a minor level by preventing further physical impacts on the archaeological resources encountered during construction. If archaeological resources or human remains are identified during Project construction, operations, or decommissioning, the onsite construction supervisor would stop work immediately and follow the protocols outlined in the Unanticipated Discoveries Plan. Terrestrial archaeological resources discovered during construction could be historic properties eligible for the NRHP and may experience adverse effects from the undertaking.

4. Developing and implementing an Unanticipated Discoveries Plan to minimize or mitigate impacts on presently undiscovered terrestrial archaeological resources that could potentially be affected by Project construction. Implementation of an Unanticipated Discoveries Plan would reduce potential impacts on undiscovered archaeological resources to a minor level by preventing further physical impacts on the archaeological resources encountered during construction.
5. Using non-reflective white and light gray paint on offshore structures (i.e., WTGs and OSS) to minimize their contrast with the sky in most atmospheric conditions.
6. Using navigational lighting that minimizes the visibility of the WTGs and OSS without compromising safety. This strategy may include limiting the amount of lighting and time duration to the minimum allowable by FAA and USCG, such as the implementation of an ADLS.
7. Funding mitigation measures to resolve adverse effects on the West Bank Light Station in Staten Island, New York; Breezy Point Surf Club Historic District, Gateway National Recreation Area (National Park Service unit) in Rockaway, Queens, New York; Silver Gull Beach Club Historic District, Gateway National Recreation Area (National Park Service unit) in Rockaway, Queens, New York; Jacob Riis Park Historic District, Gateway National Recreation Area (National Park Service unit) in Rockaway, Queens, New York; Jones Beach State Park, Parkway and Causeway System, Hempstead/Oyster Bay, New York; Robert Moses State Park in Babylon/Islip, New York; Fire Island Lighthouse in Islip, New York; Fire Island Light Station Historic District in Islip, New York; Carrington House in Brook Haven, New York; Point O'Woods Historic District in Islip, New York; Romer Shoal Light Station in Lower New York Bay, New Jersey; Sandy Hook Light, Gateway National Recreation Area (National Park Service unit) in Middleton, New Jersey; Fort Hancock, U.S. Life Saving Station, Gateway National Recreation Area (National Park Service unit) in Highlands, New Jersey; Allenhurst Residential Historic District in Allenhurst, New Jersey; Ocean Grove Camp Meeting Association District in Ocean Grove, New Jersey; and Water Witch (Monmouth Hills) Historic District in Middleton, New Jersey. These measures are further described in Appendix H, Table H-1.

The NHPA Section 106 consultation process is ongoing for the Projects, and will culminate in a Memorandum of Agreement (Attachment A) detailing avoidance, minimization, and mitigation measures to resolve adverse effects on historic properties. BOEM will continue to consult in good faith with the New York and New Jersey SHPOs and other consulting parties to resolve adverse effects.

N.7. Phased Identification

Information pertaining to identification of historic properties within portions of the offshore visual APE will not be available until after the Final EIS. Section 106 regulations at 36 CFR 800.4 (b)(2) provide for phased identification of historic properties. Typically, phased identification is implemented for projects where alternatives under consideration consist of corridors or large land areas, or where access to properties is restricted. Phasing Section 106 adjusts the standard Section 106 timeline so that identification and evaluation of historic properties may be completed after completing environmental review of the project, but before project implementation occurs. The Historic Resources Visual Effects Assessment report will be updated following completion of additional survey prior to the ROD and execution of the Memorandum of Agreement consistent with the *Empire Offshore Wind: Empire Wind*

Projects (EW 1 and EW 2), Section 106 Phased Identification Plan (Tetra Tech 2022). Phased identification survey efforts within the offshore visual APE will be focused in locations within 0.5 mile of the shoreline in New Jersey and elevated viewpoints in New York where viewshed modeling has identified potential for visibility to the Projects. BOEM will use the Memorandum of Agreement to establish commitments for phased identification and evaluation of historic properties within the offshore visual APE in accordance with BOEM's existing *Guidelines for Providing Archaeological and Historic Property Information Pursuant to Title 30 Code of Federal Regulations Part 585*, ensuring potential historic properties are identified, effects assessed, and adverse effects resolved prior to construction; reviewing the sufficiency of these report updates as phased identification and evaluation of historic properties; amending the APE; and consulting on the post-ROD finding of effects. See Attachment A.

The Memorandum of Agreement will specify the Section 106 consultation process for phased identification (see Attachment A, Stipulation IV). Empire Wind will be required to complete surveys for portions of the offshore visual APE that require phased identification. BOEM will review the results of these surveys and, after its final agreement that these surveys and survey results are sufficient, BOEM will make a finding of effect. If BOEM identifies no additional historic properties or determines that no historic properties are adversely affected, BOEM, with the assistance of Empire Wind, will notify and consult with the signatories, invited signatories, and consulting parties. BOEM and Empire Wind will allow the signatories, invited signatories, and consulting parties 30 calendar days to review and comment on the proposed change, BOEM's determination, and the documents. After the 30-calendar review period has concluded and no comments require additional consultation, Empire Wind will notify the signatories and consulting parties that BOEM has received concurrence from the New Jersey SHPO regarding the finding of effect and, if it received any comments, provide a summary of the comments and BOEM's responses. BOEM will review the results of these surveys and, after its final agreement that these surveys and survey results are sufficient, BOEM will make a finding of effect. If BOEM identifies no additional historic properties or determines that no historic properties are adversely affected, BOEM, with the assistance of Empire Wind, will notify and consult with the signatories, invited signatories, and consulting parties. BOEM and Empire Wind will allow the signatories, invited signatories, and consulting parties 30 calendar days to review and comment on the proposed change, BOEM's determination, and the documents. After the 30-calendar-day review period has concluded and no comments require additional consultation, Empire Wind will notify the signatories and consulting parties that BOEM has received concurrence from the New Jersey SHPO regarding the finding of effect and, if it received any comments, provide a summary of the comments and BOEM's responses. BOEM, with the assistance of Empire Wind, will conduct any consultation meetings if requested by the signatories or consulting parties.

If BOEM determines new adverse effects on historic properties will occur based on the results of the phased identification surveys, BOEM with the assistance of Empire Wind will notify and consult with the signatories, invited signatories, and consulting parties regarding BOEM's finding and the proposed measures to resolve the adverse effect(s) including the development of a new treatment plan(s) following the consultation process set forth in the Memorandum of Agreement. Empire Wind will notify all signatories, invited signatories, and consulting parties about the results of the surveys and copies of the survey reports, BOEM's determination, and the proposed resolution measures for the adverse effect(s). The signatories, invited signatories, and consulting parties will have 30 calendar days to review and comment on the survey reports, the results of the survey reports, the adverse effect finding, and the proposed resolution of adverse effect(s), including a draft treatment plan(s). BOEM, with the assistance of Empire Wind, will conduct additional consultation meetings, if necessary, during consultation on the adverse effect finding and during drafting and finalization of the treatment plan(s). BOEM, with the assistance of Empire Wind, will respond to the comments and make necessary edits to the documents. Empire Wind will send the revised draft final documents to the other signatories, invited signatories, and consulting parties for review and comment during a 30-calendar-day review and comment period. With this same submittal of draft final documents, Empire Wind will provide a summary of all the comments

received on the documents and BOEM's responses. BOEM, with the assistance of Empire Wind, will respond to the comments on the draft final documents and make necessary edits to the documents. Empire Wind will notify all the signatories, invited signatories, and consulting parties and will provide the final document(s) including the final treatment plan(s) and a summary of comments and BOEM's responses to comments, if it receives any on the draft final documents, after BOEM has received concurrence from the New Jersey SHPO and New York SHPO on the finding of new adverse effect(s), and BOEM has accepted the final treatment plan(s).

The approach will be in accordance with BOEM's existing *Guidelines for Providing Archaeological and Historic Property Information Pursuant to Title 30 Code of Federal Regulations Part 585*, and ensure potential historic properties are identified, effects assessed, and adverse effects resolved prior to construction. If BOEM determines new adverse effects on historic properties will occur based on the results of the phased identification surveys, BOEM with the assistance of Empire Wind will notify and consult with the signatories, invited signatories, and consulting parties regarding BOEM's finding and the proposed measures to resolve the adverse effect(s) including the development of a new treatment plan(s) following the consultation process set forth in the Memorandum of Agreement. Empire Wind will notify all signatories, invited signatories, and consulting parties about the results of the surveys and copies of the survey reports, BOEM's determination, and the proposed resolution measures for the adverse effect(s). The signatories, invited signatories, and consulting parties will have 30 calendar days to review and comment on the survey reports, the results of the survey reports, the adverse effect finding, and the proposed resolution of adverse effect(s), including a draft treatment plan(s). BOEM, with the assistance of Empire Wind, will conduct additional consultation meetings, if necessary, during consultation on the adverse effect finding and during drafting and finalization of the treatment plan(s). BOEM, with the assistance of Empire Wind, will respond to the comments and make necessary edits to the documents. Empire Wind will send the revised draft final documents to the other signatories, invited signatories, and consulting parties for review and comment during a 30-calendar-day review and comment period. With this same submittal of draft final documents, Empire Wind will provide a summary of all the comments received on the documents and BOEM's responses. BOEM, with the assistance of Empire Wind, will respond to the comments on the draft final documents and make necessary edits to the documents. Empire Wind will notify all the signatories, invited signatories, and consulting parties and will provide the final document(s) including the final treatment plan(s) and a summary of comments and BOEM's responses to comments, if it receives any on the draft final documents, after BOEM has received concurrence from the New Jersey SHPO and New York SHPO on the finding of new adverse effect(s), and BOEM has accepted the final treatment plan(s).

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ATTACHMENT A
MEMORANDUM OF AGREEMENT

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DRAFT MEMORANDUM OF AGREEMENT
AMONG THE BUREAU OF OCEAN ENERGY MANAGEMENT,
THE NEW JERSEY STATE HISTORIC PRESERVATION OFFICER,
THE NEW YORK STATE HISTORIC PRESERVATION OFFICER,
AND THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING THE EMPIRE WIND OFFSHORE WIND FARM PROJECTS

WHEREAS, the Bureau of Ocean Energy Management (BOEM) plans to authorize construction and operation of the Empire Wind Offshore Wind Farm Projects (Projects), which consist of the EW 1 and EW 2, pursuant to Section 8(p)(1)(C) of the Outer Continental Shelf (OCS) Lands Act (43 U.S.C. 1337(p)(1)(C)), as amended by the Energy Policy Act of 2005 (Public Law No. 109-58) and in accordance with Renewable Energy Regulations at 30 Code of Federal Regulations (CFR) Part 585; and

WHEREAS, BOEM determined that the Projects constitute an undertaking subject to Section 106 of the National Historic Preservation Act (NHPA), as amended (54 USC 306108), and its implementing regulations (36 CFR 800), and consistent with the Programmatic Agreement (PA) regarding the review of OCS renewable energy activities offshore New Jersey and New York (*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*); and

WHEREAS, BOEM plans to approve with conditions the Construction and Operations Plan (COP) submitted by Empire Offshore Wind, LLC (Empire); and

WHEREAS, BOEM determined the construction, operation, maintenance, and eventual decommissioning of the Projects, planned for up to 147 offshore Wind Turbine Generators (WTGs), up to two offshore substations, three onshore substations, offshore and onshore export cables, could potentially adversely affect historic properties as defined under 36 CFR 800.16(l); and

WHEREAS, BOEM is preparing an Environmental Impact Statement (EIS) for the Projects pursuant to the National Environmental Policy Act (42 USC 4321 et seq.) (NEPA) and elected to use the NEPA substitution process with its Section 106 consultation pursuant to 36 CFR 800.8(c); and

WHEREAS, BOEM notified in advance the New Jersey State Historic Preservation Officer (SHPO), New York SHPO, and the Advisory Council on Historic Preservation (ACHP) on April 29, 2021 of their decision to use NEPA substitution and followed the standards for developing environmental documents to comply with the Section 106 consultation for this Project pursuant to 36 CFR 800.8(c), and ACHP responded with acknowledgement on May 12, 2021; and

WHEREAS, in accordance with 36 CFR 800.3, BOEM invited New Jersey SHPO and New York SHPO to consult on the Project on April 29, 2021, and New Jersey SHPO accepted on May 26, 2021, and New York SHPO accepted on May 5, 2021; and

WHEREAS, in accordance with 36 CFR 800.3, BOEM invited ACHP to consult on the Project on April 29, 2021, and ACHP accepted on May 12, 2021; and

WHEREAS, the Project is within a commercial lease area subject to the previous NHPA Section 106 review by BOEM regarding the issuance of the commercial lease and approval of site assessment activities. Both Section 106 reviews for the lease issuance and the approval of the site assessment plan were conducted pursuant to the PA and concluded with No Historic Properties Affected on December 16, 2016.

WHEREAS, consistent with 36 CFR 800.16(d) and BOEM's *Guidelines for Providing Archaeological and Historic Property Information Pursuant to 30 CFR Part 585* (May 27, 2020), BOEM defined the area of potential effects (APE) for the undertaking as the depth and breadth of the seabed potentially impacted by any bottom-disturbing activities, constituting the marine archaeological resources portion of the APE (marine APE); the depth and breadth of terrestrial areas potentially impacted by any ground disturbing activities, constituting the terrestrial archaeological resources portion of the APE (terrestrial APE); the viewshed from which offshore or onshore renewable energy structures would be visible, constituting the viewshed portion of the APE (viewshed APE); and any temporary or permanent construction or staging areas that may fall into any of the aforementioned offshore or onshore portions of the APE (see Attachment 1 APE Maps); and

WHEREAS, BOEM identified 15 historic districts and 25 aboveground historic properties in the offshore Project components' portion of the viewshed APE and one historic district and three historic properties in the onshore Project components' portion of the viewshed APE; thirty submerged historic properties and twenty-two ancient submerged landforms and features (ASLFs) in the marine APE; and no historic properties in the terrestrial APE; and

WHEREAS, BOEM identified three National Historic Landmarks (NHLs) in the offshore Project components' portion of the viewshed APE, Cyclone Roller Coaster, Fort Hancock and Sandy Hook Proving Ground Historic District, and Sandy Hook Light and one NHL is the onshore Project components' portion of the viewshed APE, Green-Wood Cemetery; and

WHEREAS, within the range of Project alternatives analyzed in the EIS, BOEM determined that eight historic districts and eight individual historic properties would be subject to visual adverse effects from WTGs, thirty submerged cultural properties (Targets 01-30) may be potentially adversely affected by physical disturbance from export cable construction within the avoidance buffers of these resources, twenty-two ASLFs may be potentially adversely affected by physical disturbance in the lease area and from export cable construction, and no historic properties in the terrestrial APE would be adversely affected with implementation of the undertaking; and

WHEREAS, BOEM determined there would be no visual adverse effect to two of the three NHLs in the offshore viewshed APE, Cyclone Roller Coaster and Fort Hancock and Sandy Hook Proving Ground Historic District, because ocean views are not character-defining features of these historic properties, and BOEM determined there would be no visual adverse effect to the one NHL in the onshore viewshed APE, Green-Wood Cemetery, because proposed onshore substation and O&M Base would be partially visible from one of the highest topographic points of the cemetery but would be a minor middleground element in the built environment of the Gowanus Bay shoreline, and BOEM determined there would be an visual adverse effect to one NHL in the offshore viewshed APE, Sandy Hook Light; and

WHEREAS, BOEM determined that the implementation of the avoidance measures identified in this MOA will avoid adverse effects to seven historic districts and 17 aboveground historic properties in the offshore viewshed APE, to one historic district and three historic properties in the onshore viewshed APE; and

WHEREAS, BOEM determined all of the ASLFs identified in the marine APE are eligible for the National Register of Historic Places (NRHP) under Criteria A and D and determined, under each of the Project alternatives analyzed in the EIS, that the undertaking will adversely affect the following 22 ASLFs: Targets 31 through 52; and

WHEREAS, BOEM determined the undertaking will adversely affect the all 30 marine archaeological resources identified in the marine APE: Targets 1 through 30; and

WHEREAS, under each of the Project alternatives analyzed in the EIS, BOEM determined the Project would visually adversely affect these three historic districts and three aboveground historic properties in New Jersey: Allenhurst Residential Historic District, Allenhurst; Ocean Grove Camp Meeting Association District, Ocean Grove; Water Witch (Monmouth Hills) Historic District, Middleton; Romer Shoal Light, Lower New York Bay; Sandy Hook Light, Gateway National Recreation Area (National Parks Service unit), Middleton, Fort Hancock, U.S. Life Saving Station in Gateway National Recreation Area (National Park Service), Highlands; and five historic districts and five aboveground historic properties in New York: Breezy Point Surf Club Historic District, Gateway National Recreation Area (National Parks Service unit), Rockaway, Queens, New York; Silver Gull Beach Historic District, Gateway National Recreation Area (National Parks Service unit), Rockaway; Jacob Riis Park Historic District, Gateway National Recreation Area (National Parks Service unit) Rockaway; Fire Island Lighthouse and Historic District, Fire Island National Seashore (National Parks Service unit), Islip; Point of O'Woods Historic District, Islip; West Bank Light Station, Staten Island; Jones Beach State Park, Parkway and Causeway System, Hempstead/Oyster Bay; Robert Moses State Park, Babylon; Fire Island Lighthouse, Fire Island National Seashore (National Parks Service unit), Islip; Carrington House, Fire Island National Seashore (National Parks Service unit), Brook Haven; and

WHEREAS, New Jersey SHPO concurred with BOEM's finding of adverse effect on [insert date of SHPO's concurrence] and New York SHPO concurred with BOEM's finding of adverse effect on [insert date of SHPO's concurrence]; and

WHEREAS, throughout this document the term 'Tribe,' has the same meaning as 'Indian Tribe,' as defined at 36 CFR 800.16(m); and

WHEREAS, BOEM invited the following federally recognized Tribes to consult on this Project: Absentee-Shawnee Tribe of Indians of Oklahoma, Eastern Shawnee Tribe of Oklahoma, Mohegan Tribe of Connecticut, Shawnee Tribe, the Narragansett Indian Tribe, and the Shinnecock Indian Nation; the Delaware Tribe of Indians, Delaware Nation, the Stockbridge-Munsee Community Band of Mohican Indians; and

WHEREAS, the Delaware Tribe of Indians, Delaware Nation, the Shinnecock Indian Nation, and the Wampanoag Tribe of Gay Head (Aquinnah) accepted BOEM's invitation to consult and BOEM invited these Tribes to sign this MOA as concurring parties; and

WHEREAS, in accordance with 36 CFR 800.3, BOEM invited other federal agencies, state and local governments, and additional consulting parties with a demonstrated interest in the undertaking to participate in this consultation, the list of those accepting participation and declining to participate by either written response or no response to direct invitations are listed in Attachment 2; and

WHEREAS, BOEM has consulted with Empire in its capacity as an applicant seeking federal approval of the COP, and, because Empire has responsibilities under the MOA, BOEM has invited the applicant to be an invited signatory to this MOA; and

WHEREAS, construction of the Project requires a Department of the Army permit from the United States Army Corps of Engineers (USACE) for activities that result in the discharge of dredged or fill material into jurisdictional wetlands and/or other waters of the United States pursuant to Section 404 of the Clean Water Act, and activities occurring in or affecting navigable waters of the United States pursuant to Section 10 of the Rivers and Harbors Act; and

WHEREAS, BOEM invited USACE to consult since USACE will be issuing permits for this Project under Section 404 of the Clean Water Act (33 USC 1344) and Section 10 of the Rivers and Harbors Act (33 USC 403); and

WHEREAS, the USACE designated BOEM as the Lead Federal Agency pursuant to 36 CFR 800.2(a)(2) to act on its behalf for purposes of compliance with Section 106 for this Project (in a letter dated [Month XX, 20XX], BOEM invited the USACE to sign this MOA as a concurring party, and the USACE accepted the invitation to sign this MOA as a concurring party; and

WHEREAS, USACE is the Lead Federal Agency, reviewed, and authorized a separate South Brooklyn Marine Terminal Port Improvement Project in Brooklyn, New York, which includes marine upgrades at the Empire Wind 1 O&M facility at the South Bay Marine Terminal (SMBT), is considered a Connected Action to the Empire Wind Offshore Wind Farm Project, and also reviewed by BOEM as part of this undertaking; and

WHEREAS, BOEM notified and invited the Secretary of the Interior (represented by the National Park Service (NPS) to consult regarding this Project pursuant to the Section 106 regulations, including consideration of the potential effects to the NHLs as required under NHPA Section 110(f) (54 USC 306107) and 36 CFR 800.10, the NPS accepted BOEM's invitation to consult, and BOEM invited the NPS to sign this MOA as a concurring party; and

WHEREAS, BOEM has consulted with the signatories, invited signatories, and consulting parties participating in the development of this MOA regarding the definition of the undertaking, the delineation of the APEs, the identification and evaluation of historic properties, the assessment of potential effects to the historic properties, and on measures to avoid minimize, and mitigate adverse effects to historic properties; and

WHEREAS, BOEM has planned and is taking action to minimize harm, as required by NHPA Section 110(f) at 36 CFR 800.10 to the one adversely effected NHL in the viewshed APE, Sandy Hook Light, as explained in BOEM's 2022 *Finding of Adverse Effect for the Empire Wind Offshore Wind Farm Construction and Operations Plan* (hereafter, the Finding of Effect, and dated [Month 2023]), such measures to include using non-reflective white and light gray paint on offshore structures and using navigational lighting that minimizes the visibility of the Project from this NHL; and

WHEREAS, pursuant to 36 CFR 800.6, BOEM invited Empire to sign as invited signatory and the consulting parties as listed in Attachment 2 to sign as concurring parties; however, the refusal of any consulting party to sign this MOA or otherwise concur does not invalidate or affect the effective date of this MOA, and consulting parties who choose not to sign this MOA will continue to receive information if requested and have an opportunity to participate in consultation as specified in this MOA; and

WHEREAS, the signatories agree, consistent with 36 CFR 800.6(b)(2), that adverse effects will be resolved in the manner set forth in this MOA; and

WHEREAS, BOEM sought and considered the views of the public regarding Section 106 for this Project through the NEPA process by holding virtual public scoping meetings when initiating the NEPA and NHPA Section 106 review on June 30, July 8 and 13, 2021 and virtual public hearings related to the Draft EIS on [Month Days], 2022; and

WHEREAS, BOEM made the first Draft MOA available to the public for review and comment from November 18, 2022, to January 17, 2022, and made an updated version of the Draft MOA available to the public from [Month XX, 2022], to [Month XX, 2022], using BOEM's Project website, and BOEM [did or did not receive any comments from the public]; and

NOW, THEREFORE, BOEM, the New Jersey SHPO, New York SHPO, and the ACHP agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the undertaking on historic properties.

STIPULATIONS

BOEM, with the assistance of Empire Wind, shall ensure that the following measures are carried out as conditions of its approval of the undertaking:

I. MEASURES TO AVOID ADVERSE EFFECTS TO IDENTIFIED HISTORIC PROPERTIES

A. Marine APE

1. BOEM will include the following avoidance measures for adverse effects within the marine APE as conditions of approval of the Empire Wind COP:

   i. Empire will avoid known historic submerged cultural resources, such as shipwrecks and debris fields, previously identified during marine archaeological surveys by a distance of no less than 50 meters from the known extent of the resource for placement of Project structures and when conducting seafloor-disturbing activities.

   ii. Empire will avoid potential submerged cultural resources, such as potential shipwrecks and potentially significant debris fields previously identified during marine archaeological surveys by a distance of no less than 300 meters from the known extent of the resource, unless the buffer would preclude the installation of facilities at their engineered locations, but in no event would the buffer be less than 100 meters from the known extent of the resource.

   iii. Empire will avoid ASLFs previously identified during marine archaeological resource assessments for the Project by a distance of no less than 50 meters from the known extent of the resource for placement of Project structures and when conducting seafloor-disturbing activities, to the extent practicable.

B. Viewshed APE

1. BOEM will include the following avoidance measures for adverse effects within the viewshed APE as conditions of approval of the Empire COP:

   i. To maintain avoidance of adverse effects to historic properties in the viewshed APE where BOEM determined no adverse effects or where no effects would occur, BOEM will require Empire to ensure Project structures are within the design envelope, sizes, scale, locations, lighting prescriptions, and distances that were used by BOEM to inform the definition of the APE for the Project and for determining effects in the Finding of Effect (see the Construction & Operations Plan: Empire Wind Offshore Wind Farm Project, May, 2022).

II. MEASURES TO MINIMIZE ADVERSE EFFECTS TO IDENTIFIED HISTORIC PROPERTIES

A. Viewshed APE

1. BOEM has undertaken planning and actions to minimize adverse effects to aboveground historic properties in the viewshed APE. BOEM will include these minimization measures for adverse effects within the viewshed APE as conditions of approval of the Empire Wind COP:

   i. Empire will use uniform WTG design, speed, height, and rotor diameter to reduce visual contrast and decrease visual clutter.

ii. Empire will use consistent and as far apart as possible, with maximum spacing in the dominant trawl tow direction where feasible, with minimum spacing of no less than 0.65 NM (1.2 km) to decrease visual clutter, aligning WTGs to allow for safe transit corridors.

iii. Empire will apply a paint color to the WTGs no lighter than RAL 9010 pure white and no darker than RAL 7035 light gray to help reduce the potential visibility of the turbines against the horizon during daylight hours.

iv. Empire will implement an aircraft detection lighting system (ADLS) to automatically activate lights when aircraft approach the wind farm. The WTGs and OSS would be lit and marked in accordance with FAA and USCG lighting standards and consistent with BOEM's *Guidelines for Lighting and Marking of Structures Supporting Renewable Energy Development* (April 28, 2021) to reduce light intrusion.

III. MEASURES TO MITIGATE ADVERSE EFFECTS TO IDENTIFIED HISTORIC PROPERTIES

A. Marine APE

1. Empire will encroach on the avoidance buffers for thirty (30) marine archaeological resources (Targets 1-30). To resolve the adverse effects to these resources, BOEM will include the conditions of approval of the Empire Wind Offshore Wind Farm COP and require Empire to fulfill the following as mitigation measures before construction. BOEM will require Empire to develop a treatment plan with more mitigation measures details and consultation specificity if New Jersey SHPO, New York SHPO, ACHP, and the consulting parties agree to these proposed mitigation measures for the potentially adversely affected historic properties:

   i. Phase IB identification/Phase II NRHP evaluation and site boundary delineation, including:

      a. Additional high-resolution geophysical (HRG) survey to further refine target boundaries (i.e. increased data density for the reassessment of target and dive planning).

      b. Identification, significance evaluation, and delineation of the target sources accomplished with a remotely operated vehicle or, subject to satisfaction of internal health safety and environment (HSE) requirements and protocols, surface-supplied diver investigations, depending upon HRG survey characteristics. This could include limited investigation.

      c. As part of this mitigation measure, the applicant and contractors will continue archival research in state and/or federal repositories.

   ii. Revisit avoidance recommendation and adjust avoidance buffer, if warranted, based on Phase IB/Phase II results and allow BOEM to make a final determination if the avoidance buffers need to be adjusted

   iii. Coordinate with BOEM regarding recommended NRHP eligibility, allow BOEM to make the final determination, and consult further with interested Consulting Parties [these consulting parties will be identified through future consultation on this MOA and associated treatment plan], if the properties are determined eligible for listing in the NRHP.

iv. If NRHP-eligible, BOEM, with the assistance of Empire, will consult with the New Jersey SHPO, ACHP, and interested Consulting Parties [these consulting parties will be identified through future consultation on this MOA and associated treatment plan] to develop a limited data recovery research design and alternative mitigation.

v. Subject to the satisfaction of internal HSE requirements and protocols, Phase III data recovery will be accomplished through surface-supplied diver excavation. Level of effort dependent on consultation but could include:

a. Limited excavation and data recovery of selected sections of the archaeological site.

b. Recovery and conservation of select diagnostic artifacts for potential use in an exhibit or other public outreach program. This would be based on the opportunity determined during excavation and mapping.

c. Alternative mitigation to offset full data recovery (offsite). Examples include a robust archival research project or HRG survey designed to locate vessel loss.

d. Coordination with BOEM on consultation with interested Consulting Parties [these consulting parties will be identified through future consultation on this MOA and associated treatment plan] to develop public outreach components (e.g., digital/media products, education materials, non-technical report, etc.).

e. Technical report for peer review and dissemination of data at professional conferences or for publication.

2. Empire cannot avoid twenty-two (22) ASLFs (Targets 31 through 52). To resolve the adverse effects to the twenty-two ASLFs, BOEM will include the following as conditions of approval of the Empire Wind Offshore Wind Farm COP and require fulfillment of the following as mitigation measures prior to construction. Empire Wind will fund mitigation measures in accordance with Attachment 3 (Historic Property Treatment Plan for the Empire Wind Offshore Wind Farm Ancient Submerged Landform Features Federal Waters on the Outer Continental Shelf):

i. Preconstruction Geoarchaeology. Empire will fulfill the following commitments in accordance with Attachment 3: collaborative review of existing geophysical and geotechnical data with Native American Tribes/Tribal Nations; selection of coring locations in consultation with Tribes/Tribal Nations; collection of two to three vibracores within each affected ASLF that has not been previously sampled, with a sampling focus on areas that will be disturbed by Project construction activities; written verification to BOEM that the samples collected are sufficient for the planned analyses and consistent with the agreed scope of work; collaborative laboratory analyses at a laboratory located in Rhode Island or New Jersey; screening of recovered sediments for debitage or micro-debitage associated with indigenous land uses; third-party laboratory analyses, including micro- and macro-faunal analyses, micro- and macro-botanical analyses, radiocarbon dating of organic subsamples, and chemical analyses for potential indirect evidence of indigenous occupations; temporary curation of archival core sections; draft reports for review by participating parties; final reporting; complete a NRHP Multiple Property Documentation Form (NPS 10-900-b) form for Targets 31-52; and public or professional presentations summarizing the results of the investigations, developed with the consent of the consulting Tribes/Tribal Nations.

ii. Source GIS and Story Maps. Empire will fulfill the following commitments in accordance with Attachment 3: consultation with the Tribes/Tribal Nations to determine the appropriate open-source GIS platform; review of candidate datasets and attributes for inclusion in the GIS; data integration; development of custom reports or queries to assist in future research or tribal maintenance of the GIS; work Sessions with Tribes/Tribal Nations to develop Story Map content; training session with Tribes/Tribal Nations to review GIS functionality; review of Draft Story Maps with Tribes/Tribal Nations; delivery of GIS to Tribes/Tribal Nations; and delivery of Final Story Maps.

iii. This mitigation measure will assess seafloor impacts of up to twenty-two ASLFs for the presence of archaeological materials, including but not limited to chipped stone tools, flakes, modified wooden implements, and bone. The post-construction seafloor assessment shall consist of a Qualified Marine Archaeologist (QMA) to conduct a diver visual inspection of the seafloor in the areas where previously identified ASLFS exist and where construction activities will permanently disturb and displace the ASLFs. The QMA, using either surface supply, Closed Circuit Rebreather, or SCUBA, will document the impacts immediately following the installation of any inter-array cables, Wind Turbine Generators (WTGs), service platforms, and Export Cables that impact the previously identified ASLFs. This inspection will cover not only the immediate physical impacts to the seafloor but also any berms created during trenching activities, anchoring activities, and scour or berms made during pile driving and installation of WTGs. Documentation of the impacted ASLFs shall include the use of standard archaeological methodologies. These methodologies may include but are not limited to establishing a permanent datum, mapping, photo, video, 3D photogrammetry, and collecting a limited number of artifacts. If archaeological materials are identified and recovered, a conservation and curation plan must be in place before recovering any artifacts. For position accuracy, all divers should be tracked using an Ultra- Short Base Line (USBL) positioning system

In the final report for each of these investigations, the QMA must note the seafloor conditions (visibility), environmental conditions (e.g., sandy, mud, shell hash bottom), sea state, and how much time has passed since the construction activities have concluded in the area of the ASLF. A series of as-laid or as-placed plats should show the location of the infrastructure in relation to the ASLF and should include both horizontal and vertical penetration into the ASLF. The maps should also include the location of any sites and artifacts identified as a result of the diver visual inspection. If sites are identified on state-owned submerged bottomlands, a copy of the notification to the state, a copy of the site file, and the site trinomial should be provided as part of the final report.
Finally, as part of the final report, the QMA shall include all dive logs, dive times, and other data associated with the diver visual inspection of the seafloor.

B. Terrestrial APE

1. BOEM will require archaeological monitoring during construction in three locations on Barnum Island for EW 2 that have been previously determined to have a moderate potential for undiscovered archaeological resources as a condition of approval for the Empire Wind Offshore Wind Farm COP. Archaeological monitoring would reduce potential impacts on undiscovered archaeological resources to a minor level by preventing further physical impacts on the archaeological resources encountered during construction. If archaeological resources or human remains are identified during Project construction, operations, or decommissioning, the onsite construction supervisor would stop work immediately and

follow the protocols outlined in the Empire Wind Terrestrial Post-Review Discovery Plan (Attachment 7).

C. Viewshed APE

1. BOEM will include the following as conditions of approval of the Empire Wind Offshore Wind Farm COP and as mitigation measures to resolve the adverse effects to the eight historic districts and six historic properties that will be visually adversely affected (West Bank Light Station, Staten Island, New York; Breezy Point Surf Club Historic District, Gateway National Recreation Area (National Park Service unit), Rockaway, Queens, New York; Silver Gull Beach Historic District, Gateway National Recreation Area (National Park Service unit), Rockaway, New York; Jacob Riis Park Historic District, Gateway National Recreation Area (National Park Service unit), Rockaway, New York; Jones Beach State Park, Parkway and Causeway System, Hempstead/Oyster Bay, New York; Robert Moses State Park, Babylon, New York; Fire Island Lighthouse, Fire Island National Seashore (National Park Service unit), Islip, New York; Fire Island Light Station Historic District, Fire Island National Seashore (National Park Service unit), Islip, New York; Carrington House, Fire Island National Seashore (National Park Service unit), Brook Haven, New York; Point O'Woods Historic District, Islip, New York; Romer Shoal Light, Lower New York Bay, New Jersey; Sandy Hook Light Gateway National Recreation Area (National Park Service unit), Middleton, New Jersey; Fort Hancock, U.S. Life Saving Station in Gateway National Recreation Area (Nation Park Service unit), Highlands, New Jersey, Allenhurst Residential Historic District, Allenhurst, New Jersey; Ocean Grove Camp Meeting Association District, Ocean Grove, New Jersey; Water Witch (Monmouth Hills) Historic District, Middleton, New Jersey). Empire will fund fulfillment mitigation measures in accordance with Attachment 4 (Historic Properties Treatment Plan for Above-Ground Properties Subject to Adverse Visual Effect) and the following:

   i. West Bank Light Station, Staten Island, New York. Mitigation of adverse effects to the West Bank Light Station includes funding from Empire for a structural survey of the resource to be conducted by a Secretary of the Interior-qualified historic architect, to identify preservation-related issues. This will include: collecting and reviewing materials and drawings relating to the construction and history of the property; drafting a historical report of the property; photographing the property using digital photography; compiling draft documentation for review and comment by interested Consulting Parties [these consulting parties will be identified through future consultation on this MOA and associated treatment plan]; developing final documentation, incorporating comments from the Consulting Parties; and upon acceptance of documentation by New York SHPO, distributing documentation packages to the New York SHPO and agreed-upon state and local repositories, as appropriate. From a list of priorities generated by a structural survey, Empire will have the ability to choose the project most appropriate to the resource.

   ii. Breezy Point Surf Club Historic District, Gateway National Recreation Area (National Park Service unit), Rockaway, New York. Mitigation of adverse effects to the Breezy Point Surf Club Historic District, Rockaway includes funding by Empire for preparation of a formal nomination of the historic district to the NRHP and for preparation of a HABS/HAER documentation of the proposed historic district.

   iii. Silver Gull Beach Historic District, Gateway National Recreation Area (National Park Service unit), Rockaway, New York. Mitigation of adverse effects to the Silver Gull Beach Historic District, Rockaway includes funding by Empire for preparation of a

formal nomination of the historic district to the NRHP and for preparation of a HABS/HAER documentation of the proposed historic district.

iv. Jacob Riis Park Historic District, Gateway National Recreation Area (National Park Service unit), Rockaway, New York. Mitigation of adverse effects to the Jacob Riis Park Historic District includes funding by Empire for Historic American Engineering Record/Historic American Landscape Survey (HAER/HALS) documentation of selected buildings and/or structures at Jacob Riis Park that have not been the subject of such documentation. This will include: collecting and reviewing materials and drawings relating to the construction and history of the property; drafting a historical report of the property; photographing the property using digital photography; compiling draft documentation for review and comment by interested Consulting Parties [these consulting parties will be identified through future consultation on this MOA and associated treatment plan]; developing final documentation, incorporating comments from the Consulting Parties; and upon acceptance of documentation by New York SHPO, distributing documentation packages to the New York SHPO and agreed-upon state and local repositories, as appropriate. Additionally, Empire will fund the creation of a website or documentation to add to existing park websites that provide information on the historic nature of the selected buildings and/or structures in the historic district to inform the general public and visitors of their historic importance and to sponsor the creation and installation of waysides (interpretive signage) at Jacob Riis Park.

v. Jones Beach State Park, Parkway and Causeway System, Hempstead/Oyster Bay, New York. Mitigation of adverse effects to the Jones Beach State Park includes funding by Empire for Historic American Buildings Survey (HABS)/HAER/HALS documentation of selected buildings and/or structures in those parks that have not been the subject of such documentation. This will include: collecting and reviewing materials and drawings relating to the construction and history of the property; drafting a historical report of the property; photographing the property using digital photography; compiling draft documentation for review and comment by interested Consulting Parties [these consulting parties will be identified through future consultation on this MOA and associated treatment plan]; developing final documentation, incorporating comments from the Consulting Parties; and upon acceptance of documentation by New York SHPO, distributing documentation packages to the New York SHPO and agreed-upon state and local repositories, as appropriate. Additionally, Empire will fund the creation of a website or documentation to add to existing park websites that provide information on the historic nature of the selected buildings and/or structures in the park to inform the general public and visitors of their historic importance and to sponsor the creation and installation of waysides (interpretive signage) at Jones Beach State Park.

vi. Robert Moses State Park, Babylon, New York. Mitigation of adverse effects to the Robert Moses State Park includes funding by Empire for preparation of Historic American Buildings Survey (HABS)/HAER/HALS documentation of selected buildings and/or structures in the park that have not been the subject of such documentation. This will include: collecting and reviewing materials and drawings relating to the construction and history of the property; drafting a historical report of the property; photographing the property using digital photography; compiling draft documentation for review and comment by interested Consulting Parties [these consulting parties will be identified through future consultation on this MOA and associated treatment plan]; developing final documentation, incorporating comments from the Consulting Parties; and upon acceptance of documentation by New York SHPO, distributing documentation packages

to the New York SHPO and agreed-upon state and local repositories, as appropriate. Additionally, Empire will fund the creation of a website or documentation to add to existing park websites that provide information on the historic nature of the selected buildings and/or structures in the park to inform the general public and visitors of their historic importance and to sponsor the creation and installation of waysides (interpretive signage) at Robert Moses State Park.

vii. Fire Island Lighthouse, Fire Island National Seashore (National Park Service unit), Islip, New York. Mitigation of adverse effects to the Fire Island Lighthouse includes funding by Empire for a structural survey of the resource to be conducted by a Secretary of the Interior-qualified historic architect, to identify preservation-related issues. This will include: collecting and reviewing materials and drawings relating to the construction and history of the property; drafting a historical report of the property; photographing the property using digital photography; compiling draft documentation for review and comment by interested Consulting Parties [these consulting parties will be identified through future consultation on this MOA and associated treatment plan]; develop final documentation, incorporating comments from the Consulting Parties; and upon acceptance of documentation by New Jersey SHPO, distribute documentation packages to the New Jersey SHPO and agreed-upon state and local repositories, as appropriate. From a list of priorities generated by a structural survey, Empire will have the ability to choose the project most appropriate to the resource.

viii. Fire Island Station Historic District, Fire Island National Seashore (National Park Service unit), Islip, New York. Mitigation of adverse effects to the Fire Island Light Station Historic District, Islip, New York includes funding by Empire for the creation of interpretive materials for the Fire Island Light Station Historic District. In consultation with NPS, these interpretive materials may contrast historic and contemporary conditions or otherwise preserve the record of the historic conditions of Fire Island Station Historic District.

ix. Carrington House, Brook Haven, Fire Island National Seashore (National Park Service unit), New York. Mitigation of adverse effects to the Carrington House includes funding by Empire for HABS Level II documentation, substituting digital photography for the HABS-standard large-format photography, to record the historic properties' significance for state and local repositories. This will include: collecting and reviewing materials and drawings relating to the construction and history of the property; drafting a historical report of the property; photographing the property using digital photography; compiling draft documentation for review and comment by interested Consulting Parties [these consulting parties will be identified through future consultation on this MOA and associated treatment plan]; developing final documentation, incorporating comments from the Consulting Parties; and upon acceptance of documentation by New Jersey SHPO, distributing documentation packages to the New Jersey SHPO and agreed-upon state and local repositories, as appropriate.

x. Point O'Woods Historic District, Islip, New York. Mitigation of adverse effects to the Point O'Woods Historic Districts includes funding by Empire to conduct background research into the historic appearance of the historic district during its period of significance, with a particular focus on the historic landscape. Research will include, but not be limited to, an inspection of documents maintained by local libraries, historical societies, state archives, and the administrative or municipal offices of the individual historic districts and the result of the research and submittals will be provided to these repositories for use in disseminating this historical information to the public. Empire will

fund development of the creation of walking tours highlighting the history of the area and will provide funding to make walking tour documentation such as scripts or recordings, available online to further promote accessibility. The tours would be developed in collaboration with local historical societies or educational institutions to and focus on the architecture and architects who designed the notable buildings as well as the intersections of tourism, environmentalism, and preservation. In locations where entities already have an existing system of robust tours, Empire will subsidize paid admission to these tours, making historical information more accessible to a broader public. Additionally, the Empire Wind will fund the restoration of historic landscape features, such as paths, hedges, plantings, and benches, to mitigate adverse effects on the historic district.

xi. Romer Shoal Light, Lower New York Bay, New Jersey. Mitigation of adverse effects to the Romer Shoal Light includes funding by Empire for a structural survey of the resource to be conducted by a Secretary of the Interior-qualified historic architect, to identify preservation-related issues. This will include: collecting and reviewing materials and drawings relating to the construction and history of the property; drafting a historical report of the property; photographing the property using digital photography; compiling draft documentation for review and comment by interested Consulting Parties [these consulting parties will be identified through future consultation on this MOA and associated treatment plan]; developing final documentation, incorporating comments from the Consulting Parties; and upon acceptance of documentation by New Jersey SHPO, distributing documentation packages to the New Jersey SHPO and agreed-upon state and local repositories, as appropriate. From a list of priorities generated by a structural survey, Empire will have the ability to choose the project most appropriate to the resource.

xii. Sandy Hook Light, Gateway National Recreation Area (National Park Service unit), Middleton, New Jersey. Mitigation of adverse effects to the Sandy Hook Light includes funding by Empire for a structural survey of the resource to be conducted by a Secretary of the Interior-qualified historic architect, to identify preservation-related issues. This will include: collecting and reviewing materials and drawings relating to the construction and history of the property; drafting a historical report of the property; photographing the property using digital photography; compiling draft documentation for review and comment by interested Consulting Parties [these consulting parties will be identified through future consultation on this MOA and associated treatment plan]; developing final documentation, incorporating comments from the Consulting Parties; and upon acceptance of documentation by New Jersey SHPO, distributing documentation packages to the New Jersey SHPO and agreed-upon state and local repositories, as appropriate. From a list of priorities generated by a structural survey, Empire will have the ability to choose the project most appropriate to the resource.

xiii. Fort Hancock, U.S. Life Saving Station, Gateway National Recreation Area (National Park Service unit), Highlands, New Jersey. Mitigation of adverse effects to the Fort Hancock, U.S. Life Saving Station includes funding by Empire for a structural survey of the resource to be conducted by a Secretary of the Interior-qualified historic architect, to identify preservation-related issues. This will include: collecting and reviewing materials and drawings relating to the construction and history of the property; drafting a historical report of the property; photographing the property using digital photography; compiling draft documentation for review and comment by interested Consulting Parties [these consulting parties will be identified through future consultation on this MOA and associated treatment plan]; developing final documentation, incorporating comments

from the Consulting Parties; and upon acceptance of documentation by New Jersey SHPO, distributing documentation packages to the New Jersey SHPO and agreed-upon state and local repositories, as appropriate. From a list of priorities generated by a structural survey, Empire will have the ability to choose the project most appropriate to the resource.

xiv. Allenhurst Residential Historic District, Allenhurst, New Jersey. Mitigation of adverse effects to the Allenhurst Residential Historic Districts includes funding by Empire to conduct background research into the historic appearance of the historic district during its period of significance, with a particular focus on the historic landscape. The research will include, but not be limited to, an inspection of documents maintained by local libraries, historical societies, state archives, and the administrative or municipal offices of the individual historic districts and the result of the research and submittals will be provided to these repositories for use in disseminating this historical information to the public. Empire will fund the development of walking tours highlighting the history of the area and will provide funding to make walking tour documentation such as scripts or recordings, available online to further promote accessibility. The tours would be developed in collaboration with local historical societies or educational institutions to and focus on the architecture and architects who designed the notable buildings as well as the intersections of tourism, environmentalism, and preservation. In locations where entities already have a system of robust tours, Empire will subsidize paid admission to these tours, making historical information more accessible to a broader public. Additionally, the Empire will fund the restoration of historic landscape features, such as paths, hedges, plantings, and benches, to mitigate adverse effects on the historic district.

xv. Ocean Grove Camp Meeting Association District, Ocean Grove, New Jersey. Mitigation of adverse effects on the Ocean Grove Camp Meeting Association District includes funding by Empire to conduct background research into the historic appearance of the historic district during its period of significance, with a particular focus on the historic landscape. The research will include, but not be limited to, an inspection of documents maintained by local libraries, historical societies, state archives, and the administrative or municipal offices of the individual historic districts and the result of the research and submittals will be provided to these repositories for use in disseminating this historical information to the public. Empire will also fund the development of the creation of walking tours highlighting the history of the area and will provide funding to make walking tour documentation such as scripts or recordings, available online to further promote accessibility. The tours would be developed in collaboration with local historical societies or educational institutions to focus on the architecture and architects who designed the notable buildings as well as the intersections of tourism, environmentalism, and preservation. In locations where entities already have a system of robust tours, Empire will subsidize paid admission to these tours, making historical information more accessible to a wider public. Finally, Empire will sponsor the design and construction of a recreational fitness path within the Ocean Grove Historic District, which would provide a nexus between preserving clean air, outdoor exercise, improved pedestrian safety, and Ocean Grove's historic mandate that spiritual harmony derives, in part, from direct experience of nature. Additionally, the Empire will fund the restoration of historic landscape features, such as paths, hedges, plantings, and benches, to mitigate adverse effects on the historic district.

xvi. Water Witch (Monmouth Hills) Historic District, Middleton, New Jersey. Mitigation of adverse effects to the Water Witch (Monmouth Hills) Historic Districts includes funding

by Empire to conduct background research into the historic appearance of the historic district during its period of significance, with a particular focus on the historic landscape. Research will include, but not be limited to, inspection of documents maintained by local libraries, historical societies, state archives, and the administrative or municipal offices of the individual historic districts and the result of the research and submittals will be provided to these repositories for use in disseminating this historical information to the public. Empire will also fund development of the creation of walking tours highlighting the history of the area and will provide funding to make walking tour documentation such as scripts or recordings, available online to further promote accessibility. The tours would be developed in collaboration with local historical societies or educational institutions to and focus on the architecture and architects who designed the notable buildings as well as the intersections of tourism, environmentalism, and preservation. In locations where entities already have an existing system of robust tours, Empire will subsidize paid admission to these tours, making historical information more accessible to a wider public. Additionally, the Empire will fund restoration of historic landscape features, such as paths, hedges, plantings, and benches, to mitigate adverse effects on the historic district.

IV. PHASED IDENTIFICATION

A. The final identification and evaluation of historic properties within the APE may occur after publication of the DEIS, but before the initiation of construction on the OCS lease. In this circumstance, the Signatories agree that the following describes how BOEM will conduct phased identification and evaluation of historic architectural resources, pursuant to 36 CFR § 800.4(b)(2) and consistent with the Section 106 Phased Identification Plan (see Attachment 5):

1. For identification of historic properties within the portions of the visual APE, supplemental technical studies will be conducted by Empire Wind in accordance with state guidelines and recommendations presented in BOEM's most recent *Guidelines*. The developer will coordinate with the New York and New Jersey SHPOs prior to the initiation of any such identification efforts in their respective states.

    i. BOEM will require that identification efforts be documented in a technical report that address the identification of historic properties and include an evaluation of effects due to the Project.

    ii. BOEM will require that identification efforts for historic architectural resources in the state of New Jersey be documented in a supplemental architectural survey report, consistent with NJ SHPO guidelines.

    iii. BOEM will require that preparation of a supplemental Historic Architectural Visual Effects Assessment that includes effects recommendations due to the Project on historic properties identified in the supplemental architectural survey report.

2. BOEM will consult on the results of historic property identification surveys for any portions of the APE that were not addressed in the pre-approval consultations.

3. BOEM will treat all identified potential historic properties as eligible for inclusion in the NRHP unless BOEM determines, and the SHPOs agrees, that a property is ineligible, pursuant to 36 CFR § 800.4(c).

4. If effects on identified historic properties cannot be avoided, BOEM will evaluate the NRHP eligibility of the potentially affected properties, in accordance with 36 CFR § 800.4.

5. If BOEM identifies no additional historic properties or determines that no historic properties are adversely affected due to these identification efforts, BOEM, with the assistance of Empire Wind, will notify and consult with the signatories, invited signatories, and consulting parties following the consultation process set forth here in this stipulation.

    i. Empire Wind will notify all the signatories, invited signatories, and consulting parties about the surveys and BOEM's determination by providing a written summary of the surveys including any maps, a summary of the surveys and/or research conducted to identify historic properties and assess effects, and copies of the surveys.

    ii. BOEM and Empire Wind will allow the signatories, invited signatories, and consulting parties 30 calendar days to review and comment on the survey reports, the results of the surveys, BOEM's determination, and the documents.

    iii. After the 30-calendar review period has concluded and no comments require additional consultation, Empire Wind will notify the signatories and consulting parties that the New Jersey SHPO and/or the New York SHPO has concurred with BOEM's determination, if they received any comments, provide a summary of the comments and BOEM's responses.

    iv. BOEM, with the assistance of Empire Wind, will conduct any consultation meetings if requested by the signatories or consulting parties.

    v. This MOA will not need to be amended if no additional historic properties are identified and/or adversely affected.

6. If BOEM determines new adverse effects to historic properties will occur due to result of these surveys, BOEM with the assistance of Empire Wind will notify and consult with the signatories, invited signatories, and consulting parties regarding BOEM's finding and the proposed measures to resolve the adverse effect(s) including the development of a new treatment plan(s) following the consultation process set forth here in this stipulation.

    i. Empire Wind will notify all signatories, invited signatories, and consulting parties about the surveys and BOEM's determination by providing a written summary of the results including any maps, a summary of the surveys and/or research conducted to identify historic properties and assess effects, copies of the surveys, BOEM's determination, and the proposed resolution measures for the adverse effect(s).

    ii. The signatories, invited signatories, and consulting parties will have 30 calendar days to review and comment on the documents including the adverse effect finding and the proposed resolution of adverse effect(s), including a draft treatment plan(s).

    iii. BOEM, with the assistance of Empire Wind, will conduct additional consultation meetings, if necessary, during consultation on the adverse effect finding and during drafting and finalization of the treatment plan(s).

    iv. BOEM, with the assistance of Empire Wind, will respond to the comments and make necessary edits to the documents.

    v. Empire Wind will send the revised draft final documents to the other signatories, invited signatories, and consulting parties for review and comment during a 30-calendar day review and comment period. With this same submittal of draft final documents, Empire

Wind will provide a summary of all the comments received on the documents and BOEM's responses.

vi. BOEM, with the assistance of Empire Wind, will respond to the comments on the draft final documents and make necessary edits to the documents

vii. Empire Wind will notify all the signatories, invited signatories, and consulting parties and provide the final document(s) including the final treatment plan(s) and a summary of comments and BOEM's responses to comments, if they receive any on the draft final documents, after BOEM has received concurrence from the New Jersey SHPO and/or New York SHPO on the finding of new adverse effect(s), and BOEM has accepted the final treatment plan(s).

viii. The MOA will not need to be amended after the treatment plan(s) is accepted by BOEM.

7. If a SHPO disagrees with BOEM's determination regarding whether an affected property is eligible for inclusion in the NRHP, or if the ACHP or the Secretary so request, the agency official will obtain a determination of eligibility from the Secretary pursuant to 36 CFR Part 63 (36 CFR § 800.4(c)(2)).

V. REVIEW PROCESS FOR DOCUMENTS

A. The following process will be used for any document, report, or plan produced in accordance with Stipulations of this MOA:

1. Draft Document
   i. Empire Wind shall provide the document to BOEM for technical review and approval
      a. BOEM has 15 calendar days to complete its technical review.
      b. If BOEM does not provide approval, it shall submit its comments back to Empire Wind, who will have 15 calendar days to address the comments.
   ii. BOEM, with the assistance of Empire Wind, shall provide the draft document to consulting parties, except the ACHP, for review and comment.
      a. Consulting parties shall have 30 calendar days to review and comment.
      b. BOEM, with the assistance of Empire Wind, shall coordinate a meeting with consulting parties to facilitate comments on the document if requested by a consulting party.
      c. BOEM shall consolidate comments received and provide them to Empire Wind within 15 calendar days of receiving comments from consulting parties.
      d. BOEM with the assistance of Empire Wind, will respond to the comments and make necessary edits to the documents.
2. **Draft Final Document**
   i. Empire Wind shall provide BOEM with the draft final document for technical review and approval
      a. BOEM has 15 calendar days to complete its technical review.
      b. If BOEM does not provide approval, it shall submit its comments back to Empire Wind, who will have 15 calendar days to address the comments.
   ii. BOEM, with the assistance of Empire Wind, shall provide the final draft document to consulting parties, except the ACHP, for review and comment.
      a. Consulting parties shall have 30 calendar days to review and comment.
      b. BOEM, with the assistance of Empire Wind, shall coordinate a meeting with consulting parties to facilitate comments on the document if requested by a consulting party.
      c. BOEM shall consolidate comments received and provide them to Empire Wind within 15 calendar days of receiving comments from consulting parties.

d. BOEM with the assistance of Empire Wind, will respond to the comments and make necessary edits to the documents.

3. **Final Document**
   i. Empire Wind shall provide BOEM with the final document approval
      a. BOEM has 15 calendar days to complete its technical review.
      b. If BOEM does not provide approval, it shall submit its comments back to Empire Wind, who will have 15 calendar days to address the comments.
      c. BOEM, with the assistance of Empire Wind, shall provide the final document to consulting parties, except the ACHP, within 30 calendar days of approving the final document. With this same submittal of final documents, Empire Wind will provide a summary of all the comments received on the documents and BOEM's responses.

VI. SUBMISSION OF DOCUMENTS

A. New Jersey SHPO, New York SHPO, ACHP, NPS, Tribes, and Consulting Parties

1. All submittals to the New Jersey SHPO, New York SHPO, ACHP, NPS, Tribes, and consulting parties will be submitted electronically unless a specific request is made for the submittal be provided in paper format.

VII. PROJECT MODIFICATIONS

A. If Empire Wind proposes any modifications to the Project that expands the Project beyond the Project Design Envelope included in the COP and/or occurs outside the defined APEs or the proposed modifications change BOEM's final Section 106 determinations and findings for this Project, Empire Wind shall notify and provide BOEM with information concerning the proposed modifications. BOEM will determine if these modifications require alteration of the conclusions reached in the Finding of Effect and, thus, will require additional consultation with the signatories, invited signatories and consulting parties. If BOEM determines additional consultation is required, Empire Wind will provide the signatories, invited signatories, and consulting parties with the information concerning the proposed changes, and they will have 30 calendar days from receipt of this information to comment on the proposed changes. BOEM shall take into account any comments from signatories, invited signatories, and consulting parties prior to agreeing to any proposed changes. Using the procedure below, BOEM will, as necessary, consult with the signatories, invited signatories, and consulting parties to identify and evaluate historic properties in any newly affected areas, assess the effects of the modification(s), and resolve any adverse effects.

1. If the Project is modified and BOEM identifies no additional historic properties or determines that no historic properties are adversely affected due to the modification, BOEM, with the assistance of Empire Wind, will notify and consult with the signatories, invited signatories, and consulting parties following the consultation process set forth in this Stipulation VII.A.1.

   i. Empire Wind will notify all the signatories, invited signatories, and consulting parties about this proposed change and BOEM's determination by providing a written summary of the project modification including any maps, a summary of any additional surveys and/or research conducted to identify historic properties and assess effects, and copies of the surveys.

   ii. BOEM and Empire Wind will allow the signatories, invited signatories, and consulting parties 30 calendar days to review and comment on the proposed change, BOEM's determination, and the documents.

iii. After the 30-calendar review period has concluded and no comments require additional consultation, Empire Wind will notify the signatories and consulting parties that BOEM has approved the project modification and, if they received any comments, provide a summary of the comments and BOEM's responses.

iv. BOEM, with the assistance of Empire Wind, will conduct any consultation meetings if requested by the signatories or consulting parties.

v. This MOA will not need to be amended if no additional historic properties are identified and/or adversely affected.

2. If BOEM determines new adverse effects to historic properties will occur due to a Project Modification(s), BOEM with the assistance of Empire Wind will notify and consult with the signatories, invited signatories, and consulting parties regarding BOEM's finding and the proposed measures to resolve the adverse effect(s) including the development of a new treatment plan(s) following the consultation process set forth in this Stipulation VII.A.2.

   i. Empire Wind will notify all signatories, invited signatories, and consulting parties about this proposed modification, BOEM's determination, and the proposed resolution measures for the adverse effect(s).

   ii. The signatories, invited signatories, and consulting parties will have 30 calendar days to review and comment on the adverse effect finding and the proposed resolution of adverse effect(s), including a draft treatment plan(s).

   iii. BOEM, with the assistance of Empire Wind, will conduct additional consultation meetings, if necessary, during consultation on the adverse effect finding and during drafting and finalization of the treatment plan(s).

   iv. BOEM, with the assistance of Empire Wind, will respond to the comments and make necessary edits to the documents.

   v. Empire Wind will send the revised draft final documents to the other signatories, invited signatories, and consulting parties for review and comment during a 30-calendar day review and comment period. With this same submittal of draft final documents, Empire Wind will provide a summary of all the comments received on the documents and BOEM's responses.

   vi. BOEM, with the assistance of Empire Wind, will respond to the comments on the draft final documents and make necessary edits to the documents.

   vii. Empire Wind will notify all the signatories, invited signatories, and consulting parties that BOEM has approved the project modification and will provide the final document(s) including the final treatment plan(s) and a summary of comments and BOEM's responses to comments, if they receive any on the draft final documents, after BOEM has received concurrence from the New Jersey SHPO on the finding of new adverse effect(s), BOEM has accepted the final treatment plan(s), and BOEM has approved the Project modification.

3. If any of the signatories, invited signatories, or consulting parties object to determinations, findings, or resolutions made pursuant to these measures (Stipulation VII.A.1 and 2), BOEM will resolve any such objections pursuant to the dispute resolution process set forth Stipulation XIII.

VIII. CURATION

A. Collections from federal lands or the OCS:

1. Any archaeological materials removed from federal lands or the OCS as a result of the actions required by this MOA shall be curated in accordance with 36 CFR 79, "Curation of Federally Owned and Administered Archaeological Collections," ACHP's "Recommended Approach for Consultation on Recovery of Significant Information from Archaeological Sites" published in the Federal Register (64 Fed. Reg. 27085-27087 (May 18, 1999)), or other provisions agreed to by the consulting parties and following applicable State guidelines. No excavation should be initiated before acceptance and approval of a curation plan**.**

B. Collections from state, local government, and private lands:

1. Archaeological materials from state or local government lands in the APE and the records and documentation associated with these materials shall be curated within the state of their origin at a repository preferred by the SHPO, or an approved and certified repository, in accordance with the standards and guidelines required by the New Jersey SHPO for materials collected in New Jersey or required by the New York SHPO for materials collected in New York. Lands as described here may include the seafloor in state waters. No excavation should be initiated before acceptance and approval of a curation plan.

2. Collections from private lands that would remain private property: In cases where archaeological survey and testing are conducted on private land, any recovered collections remain the property of the land owner. In such instances, BOEM and Empire Wind, in coordination with the New Jersey SHPO or the New York SHPO as appropriate based on which state these materials are located, and affected Tribe(s), will encourage land owners to donate the collection(s) to an appropriate public or Tribal entity. To the extent a private landowner requests that the materials be removed from the site, Empire Wind will seek to have the materials donated to the repository identified under Stipulation VII.B.1 through a written donation agreement developed in consultation with the consulting parties. BOEM, assisted by Empire Wind, will seek to have all materials from each state curated together in the same curation facility within the state of origin. In cases where the property owner wishes to transfer ownership of the collection(s) to a public or Tribal entity, BOEM and Empire Wind will ensure that recovered artifacts and related documentation are curated in a suitable repository as agreed to by BOEM, the appropriate SHPO, and affected Tribe(s), and following applicable State guidelines. To the extent feasible, the materials and records resulting from the actions required by this MOA for private lands, shall be curated in accordance with 36 CFR 79. No excavation should be initiated before acceptance and approval of a curation.

IX. PROFESSIONAL QUALIFICATIONS

A. Secretary's Standards for Archaeology and Historic Preservation. Empire will ensure that all work carried out pursuant to this MOA will meet the SOI Standards for Archaeology and Historic Preservation, 48 FR 44716 (September 29, 1983), taking into account the suggested approaches to new construction in the SOI's Standards for Rehabilitation.

B. SOI Professional Qualifications Standards. Empire will ensure that all work carried out pursuant to this MOA is performed by or under the direction supervision of historic preservation professionals who meet the SOI's Professional Qualifications Standards (48 FR 44738-44739). A

"qualified professional" is a person who meets the relevant standards outlined in such SOI's Standards. BOEM, or its designee, will ensure that consultants retained for services pursuant to the MOA meet these standards.

C. Investigations of ASLFs. Empire will ensure that the additional investigations of ASLFs will be conducted and reports and other materials produced by one or more qualified marine archaeologists and geological specialists who meet the SOI's Professional Qualifications Standards and has experience both in conducting High Resolution Geophysical (HRG) surveys and processing and interpreting the resulting data for archaeological potential, as well as collecting, subsampling, and analyzing cores.

D. Tribal Consultation Experience. Empire will ensure that all work carried out pursuant to this MOA that requires consultation with Tribes is performed by professionals who have demonstrated professional experience consulting with federally recognized Tribes.

X. DURATION

A. This MOA will expire at (1) the decommissioning of the Project in the lease area, as defined in Empire's lease with BOEM (Lease Number OCS-A 0512) or (2) 25-years from the date of COP approval, whichever occurs first. Prior to such time, BOEM may consult with the other signatories and invited signatories to reconsider the terms of the MOA and amend it in accordance with Amendment Stipulation (Stipulation XIV).

XI. POST-REVIEW DISCOVERIES

A. Implementation of Post-Review Discovery Plans. If properties are discovered that may be historically significant or have unanticipated effects on historic properties found, BOEM shall implement the post-review discovery plans found in Attachment 7 (Empire Wind Post-Review Discoveries Plan for Submerged Cultural Resources) and Attachment 8 (Empire Wind Terrestrial Post-Review Discovery Plan).

1. The signatories acknowledge and agree that it is possible that additional historic properties may be discovered during the implementation of the Project, despite the completion of a good faith effort to identify historic properties throughout the APEs.

B. All Post-Review Discoveries. In the event of a post-review discovery of a property or unanticipated effects to a historic property prior to or during construction, operation, maintenance, or decommissioning of the Project, Empire will implement the following actions which are consistent with the post-review discovery plan:

1. Immediately halt all ground- or seafloor-disturbing activities within the area of discovery;

2. Notify BOEM in writing via report within 72 hours of the discovery;

3. Keep the location of the discovery confidential and take no action that may adversely affect the discovered property until BOEM or its designee has made an evaluation and instructs Empire on how to proceed; and

4. Conduct any additional investigations as directed by BOEM or its designee to determine if the resource is eligible for listing in the NRHP (30 CFR 585.802(b)). BOEM will direct Empire Wind to complete additional investigations, as BOEM deems appropriate, if:

i. The site has been impacted by Empire Project activities, or

ii. impacts to the site from Empire Project activities cannot be avoided.

5. If investigations indicate that the resource is eligible for the NRHP, BOEM, with the assistance of Empire, will work with the other relevant signatories, invited signatories, and consulting parties to this MOA who have a demonstrated interest in the affected historic property and on the further avoidance, minimization or mitigation of adverse effects.

6. If there is any evidence that the discovery is from an indigenous society or appears to be a preserved burial site, Empire will contact the Tribes as identified in the notification lists included in the post-review discovery plans within 72 hours of the discovery with details of what is known about the discovery, and consult with the Tribes pursuant to the post review discovery plan.

7. If BOEM incurs costs in addressing the discovery, under Section 110(g) of the NHPA, BOEM may charge Empire reasonable costs for carrying out historic preservation responsibilities, pursuant to its delegated authority under the OCS Lands Act (30 CFR 585.802 (c-d)).

XII. MONITORING AND REPORTING

At the beginning of each calendar year by January 31, following the execution of this MOA until it expires or is terminated, Empire will prepare and, following BOEM's review and agreement to share this summary report, provide all signatories, invited signatories, and consulting parties to this MOA a summary report detailing work undertaken pursuant to the MOA. Such report shall include a description of how the stipulations relating to avoidance and minimization measures (Stipulations I and II) were implemented; any scheduling changes proposed; any problems encountered; and any disputes and objections received in BOEM's efforts to carry out the terms of this MOA. Empire can satisfy its reporting requirement under this stipulation by providing the relevant portions of the annual compliance certification required under 30 CFR 585.633.

XIII. DISPUTE RESOLUTION

A. Should any signatory, invited signatory, or consulting party to this MOA object at any time to any actions proposed or the manner in which the terms of this MOA are implemented, they must notify BOEM in writing of their objection. BOEM shall consult with such party to resolve the objection. If BOEM determines that such objection cannot be resolved, BOEM will:

1. Forward all documentation relevant to the dispute, including the BOEM's proposed resolution, to the ACHP. The ACHP shall provide BOEM with its advice on the resolution of the objection within 30 calendar days of receiving adequate documentation. Prior to reaching a final decision on the dispute, BOEM shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the ACHP, signatories, invited signatories, and/or consulting parties, and provide them with a copy of this written response. BOEM will make a final decision and proceed accordingly.

2. If the ACHP does not provide its advice regarding the dispute within the 30 calendar-day time period, BOEM may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, BOEM shall prepare a written response that takes into account any timely comments regarding the dispute from the signatories, invited signatories, or consulting parties to the MOA, and provide them and the ACHP with a copy of such written response.

B. BOEM's responsibility to carry out all other actions subject to the terms of this MOA that are not the subject of the dispute remain unchanged.

C. At any time during the implementation of the measures stipulated in this MOA, should a member of the public object in writing to the signatories regarding the manner in which the measures stipulated in this MOA are being implemented, that signatory will notify BOEM. BOEM shall review the objection and may notify the other signatories as appropriate, and respond to the objector.

XIV. AMENDMENTS

A. This MOA may be amended when such an amendment is agreed to in writing by all signatories and invited signatories. The amendment will be effective on the date a copy signed by all of the signatories and invited signatories is filed with the ACHP.

B. Revisions to any attachment may be proposed by any signatory or invited signatory by submitting a draft of the proposed revisions to all signatories and invited signatories with a notification to the consulting parties. The signatories and invited signatories will consult for no more than 30 calendar days (or another time period agreed upon by all signatories and invited signatories) to consider the proposed revisions to the attachment. If the signatories and invited signatories unanimously agree to revise the attachment, BOEM will provide a copy of the revised attachment to the other signatories, invited signatories, and consulting parties. Revisions to any attachment to this MOA will not require an amendment to the MOA.

XV. TERMINATION

If any signatory or invited signatory to this MOA determines that its terms will not or cannot be carried out, that party shall immediately consult with the other signatories, invited signatories, and consulting parties to attempt to develop an amendment per Stipulation XIV. If within 30 calendar days (or another time period agreed to by all signatories) an amendment cannot be reached, any signatory or invited signatory may terminate the MOA upon written notification to the other signatories.

Once the MOA is terminated, and prior to work continuing on the undertaking, BOEM must either(a) execute an MOA pursuant to 36 CFR 800.6 or (b) request, take into account, and respond to the comments of the ACHP under 36 CFR 800.7. BOEM shall notify the signatories and invited signatories as to the course of action it will pursue.

XVI. COORDINATION WITH OTHER FEDERAL AGENCIES

A. In the event that another federal agency not initially a party to or subject to this MOA receives an application for funding/license/permit for the undertaking as described in this MOA, that agency may fulfill its Section 106 responsibilities by stating in writing it concurs with the terms of this MOA and notifying the signatories and invited signatories that it intends to do so. Such federal agency may become a signatory, invited signatory, or a concurring party (collectively referred to as signing party) to the MOA as a means of complying with its responsibilities under Section 106 and based on its level of involvement in the undertaking. To become a signing party to the MOA, the agency official must provide written notice to the signatories and invited signatories that the agency agrees to the terms of the MOA, specifying the extent of the agency's intent to participate in the MOA. The participation of the agency is subject to approval by the signatories and invited signatories who must respond to the written notice within 30 calendar days or the approval will be considered implicit. Any necessary amendments to the MOA as a result will be considered in accordance with the Amendment Stipulation (Stipulation XIV).

B. Should the signatories and invited signatories approve the federal agency's request to be a signing party to this MOA, an amendment under Stipulation XIV will not be necessary if the federal agency's participation does not change the undertaking in a manner that would require any modifications to the stipulations set forth in this MOA. BOEM will document these conditions and involvement of the federal agency in a written notification to the signatories, invited signatories, and consulting parties, and include a copy of the federal agency's executed signature page, which will codify the addition of the federal agency as a signing party in lieu of an amendment.

XVII. ANTI-DEFICIENCY ACT

Pursuant to 31 USC 1341(a)(1), nothing in this MOA will be construed as binding the United States to expend in any one fiscal year any sum in excess of appropriations made by Congress for this purpose, or to involve the United States in any contract or obligation for the further expenditure of money in excess of such appropriations.

Execution of this MOA by BOEM, the New Jersey SHPO, New York SHPO, and the ACHP, and implementation of its terms evidence that BOEM has taken into account the effects of this undertaking on historic properties and afforded the ACHP an opportunity to comment.

[SIGNATURES COMMENCE ON THE FOLLOWING PAGE]

MEMORANDUM OF AGREEMENT
AMONG THE BUREAU OF OCEAN ENERGY MANAGEMENT,
THE NEW JERSEY STATE HISTORIC PRESERVATION OFFICER,
AND THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING THE EMPIRE WIND OFFSHORE WIND FARM PROJECT

Signatory:

Bureau of Ocean Energy Management (BOEM)

_____ Date:_____
Amanda Lefton
Director
Bureau of Ocean Energy Management

MEMORANDUM OF AGREEMENT
AMONG THE BUREAU OF OCEAN ENERGY MANAGEMENT,
THE NEW JERSEY STATE HISTORIC PRESERVATION OFFICER,
AND THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING THE EMPIRE WIND OFFSHORE WIND FARM PROJECT

Signatory:

New Jersey State Historic Preservation Officer (SHPO)

_____ Date:_____
Katherine J. Marcopul, Ph.D., CPM
Administrator and
Deputy State Historic Preservation Officer
New Jersey Department of Environmental Protection

MEMORANDUM OF AGREEMENT
AMONG THE BUREAU OF OCEAN ENERGY MANAGEMENT,
THE NEW JERSEY STATE HISTORIC PRESERVATION OFFICER,
AND THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING THE EMPIRE WIND OFFSHORE WIND FARM PROJECT

Signatory:

New York State Historic Preservation Officer (SHPO)

_____ Date:_____
Erik Kulleseid
Commissioner and
State Historic Preservation Officer
New York Office of Parks, Recreation and Historic Preservation

MEMORANDUM OF AGREEMENT
AMONG THE BUREAU OF OCEAN ENERGY MANAGEMENT,
THE NEW JERSEY STATE HISTORIC PRESERVATION OFFICER,
AND THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING THE EMPIRE WIND OFFSHORE WIND FARM PROJECT

Signatory:

Advisory Council on Historic Preservation (ACHP)

_____ Date:_____
Reid J. Nelson
Executive Director, Acting
Advisory Council on Historic Preservation

MEMORANDUM OF AGREEMENT
AMONG THE BUREAU OF OCEAN ENERGY MANAGEMENT,
THE NEW JERSEY STATE HISTORIC PRESERVATION OFFICER,
AND THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING THE EMPIRE WIND OFFSHORE WIND FARM PROJECT

Invited Signatory:

Empire Wind, LLC

_____ Date:_____
Scott Lundin
Head of U.S. Permitting and Environmental Affairs
Equinor Wind US, LLC (Empire Wind, LLC)

MEMORANDUM OF AGREEMENT
AMONG THE BUREAU OF OCEAN ENERGY MANAGEMENT,
THE NEW JERSEY STATE HISTORIC PRESERVATION OFFICER,
AND THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING THE EMPIRE WIND OFFSHORE WIND FARM PROJECT

Concurring Party:

The Delaware Tribe of Indians

_____ Date:_____
Brad KillsCrow
Chief
The Delaware Tribe of Indians

MEMORANDUM OF AGREEMENT
AMONG THE BUREAU OF OCEAN ENERGY MANAGEMENT,
THE NEW JERSEY STATE HISTORIC PRESERVATION OFFICER,
AND THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING THE EMPIRE WIND OFFSHORE WIND FARM PROJECT

Concurring Party:

The Delaware Nation

_____ Date:_____
Deborah Dotson
President of the Executive Committee
The Delaware Nation

MEMORANDUM OF AGREEMENT
AMONG THE BUREAU OF OCEAN ENERGY MANAGEMENT,
THE NEW JERSEY STATE HISTORIC PRESERVATION OFFICER,
AND THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING THE EMPIRE WIND OFFSHORE WIND FARM PROJECT

Concurring Party:

The Shinnecock Indian Nation

_____ Date:_____
Bryan Polite
Chairman
The Shinnecock Indian Nation

MEMORANDUM OF AGREEMENT
AMONG THE BUREAU OF OCEAN ENERGY MANAGEMENT,
THE NEW JERSEY STATE HISTORIC PRESERVATION OFFICER,
AND THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING THE EMPIRE WIND OFFSHORE WIND FARM PROJECT

Concurring Party:

The Wampanoag Tribe of Gay Head (Aquinnah)

_____ Date:_____
Bettina Washington
Tribal Historic Preservation Officer
The Wampanoag Tribe of Gay Head (Aquinnah)

MEMORANDUM OF AGREEMENT
AMONG THE BUREAU OF OCEAN ENERGY MANAGEMENT,
THE NEW JERSEY STATE HISTORIC PRESERVATION OFFICER,
AND THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING THE EMPIRE WIND OFFSHORE WIND FARM PROJECT

Concurring Party:

Organization

_____ Date:_____

Name
Title
Organization

MEMORANDUM OF AGREEMENT
AMONG THE BUREAU OF OCEAN ENERGY MANAGEMENT,
THE NEW JERSEY STATE HISTORIC PRESERVATION OFFICER,
AND THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING THE EMPIRE WIND OFFSHORE WIND FARM PROJECT

LIST OF ATTACHMENTS TO THE MOA

ATTACHMENT 1 – APE MAPS

ATTACHMENT 2 – LISTS OF INVITED AND PARTICIPATING CONSULTING PARTIES

ATTACHMENT 3 – EMPIRE WIND TREATMENT PLAN FOR ANCIENT SUBMERGED LANDFORM FEATURES

ATTACHMENT 4 – EMPIRE TREATMENT PLAN FOR ABOVE-GROUND HISTORIC PROPERTIES SUBJECT TO ADVERSE VISUAL EFFECT

ATTACHMENT 5 – SECTION 106 PHASED IDENTIFICATION PLAN

ATTACHMENT 6 – MONITORING AND POST-REVIEW DISCOVERIES PLAN FOR TERRESTRIAL ARCHAEOLOGICAL RESOURCES

ATTACHMENT 7 – POST-REVIEW DISCOVERIES PLAN FOR SUBMERGED ARCHAEOLOGICAL SITES, HISTORIC PROPERTIES, AND CULTURAL RESROUCES INCLUDING HUMAN REMAINS

ATTACHMENT 1 – APE MAPS

Marine Archaeological APE Figures

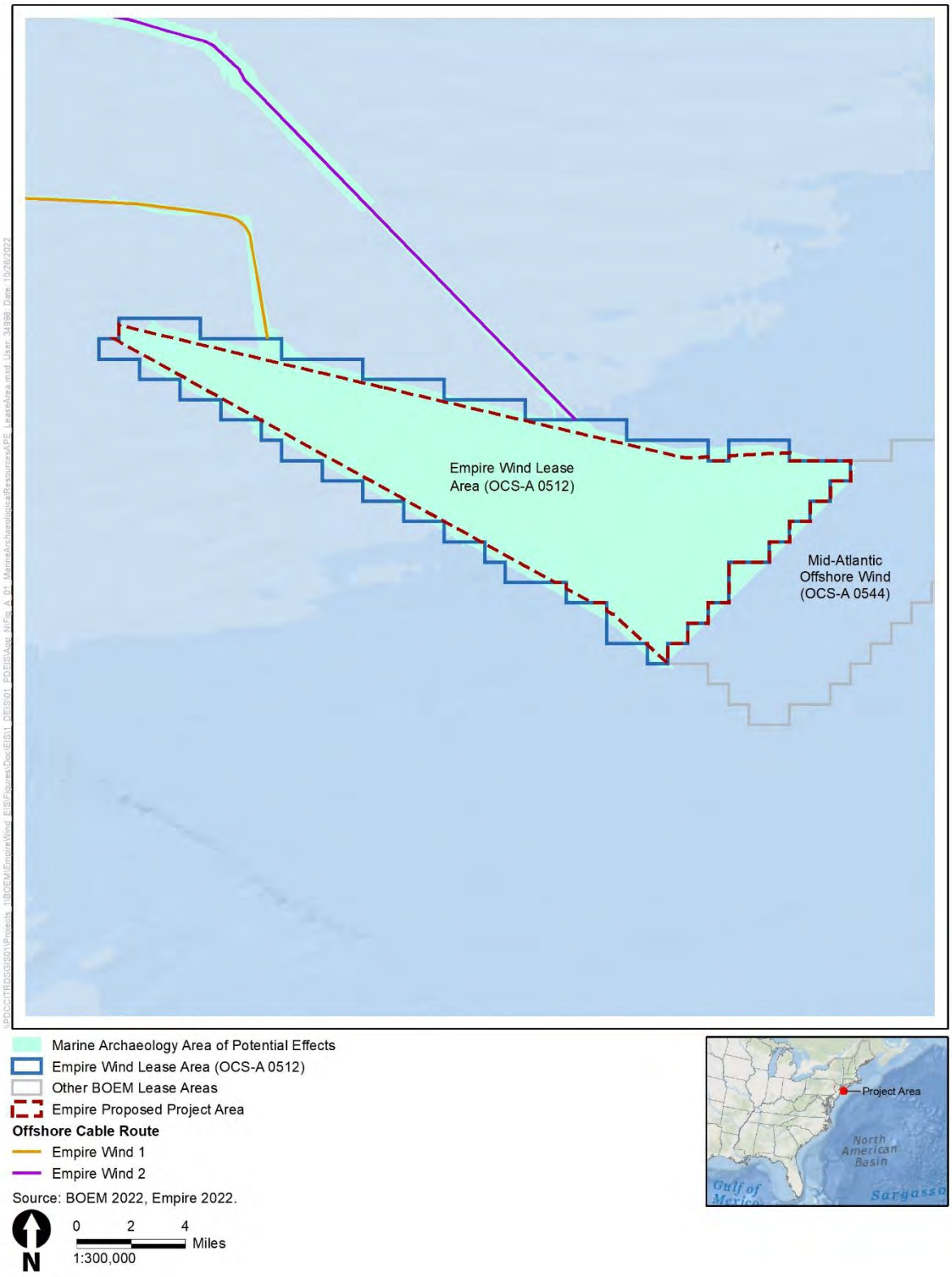

Figure 1 **Marine Archaeological Resources APE for Activities within the Lease Area**

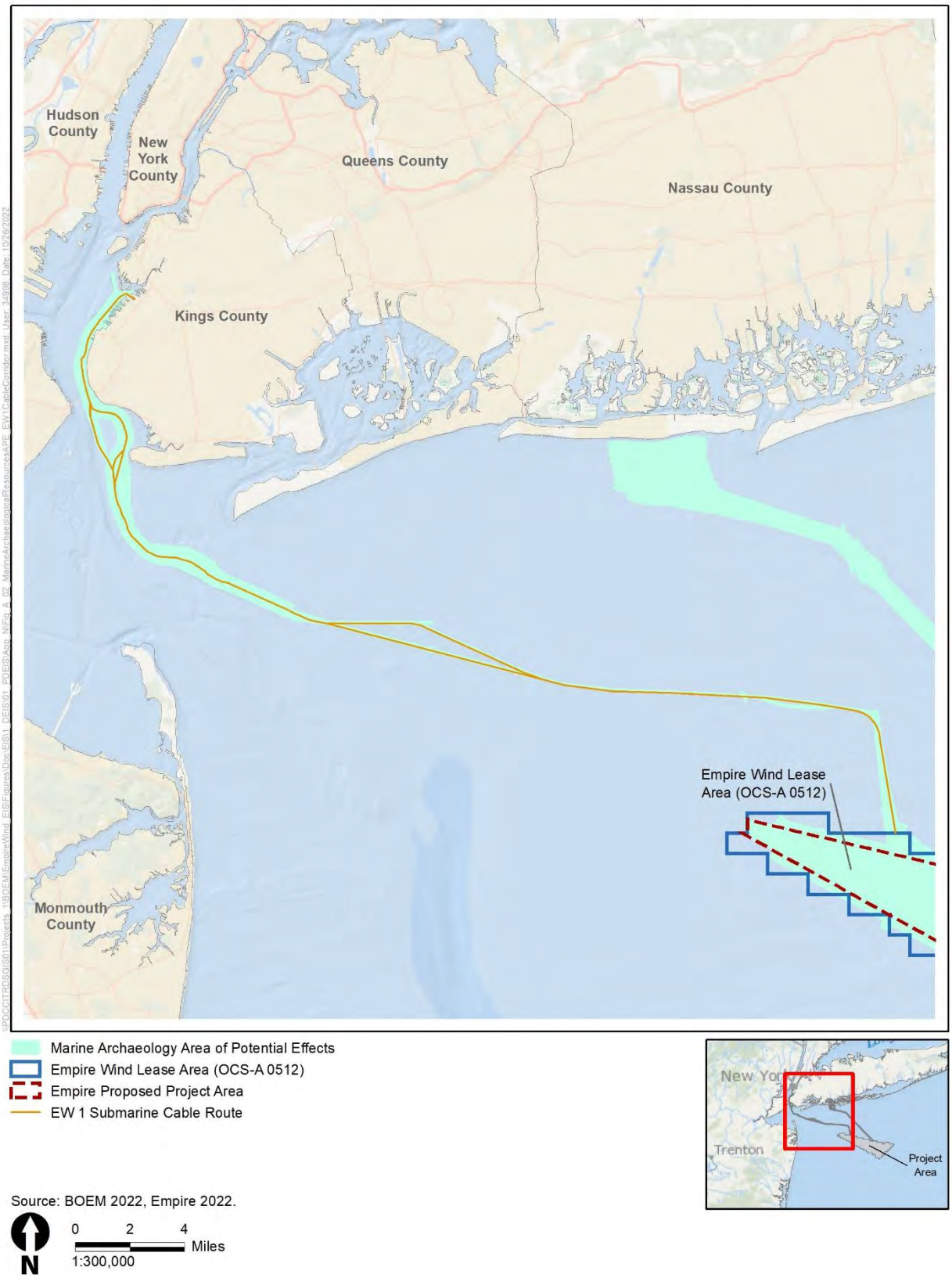

Figure 2 **Marine Archaeological Resources APE for Activities within the EW 1 Cable Route Corridor**

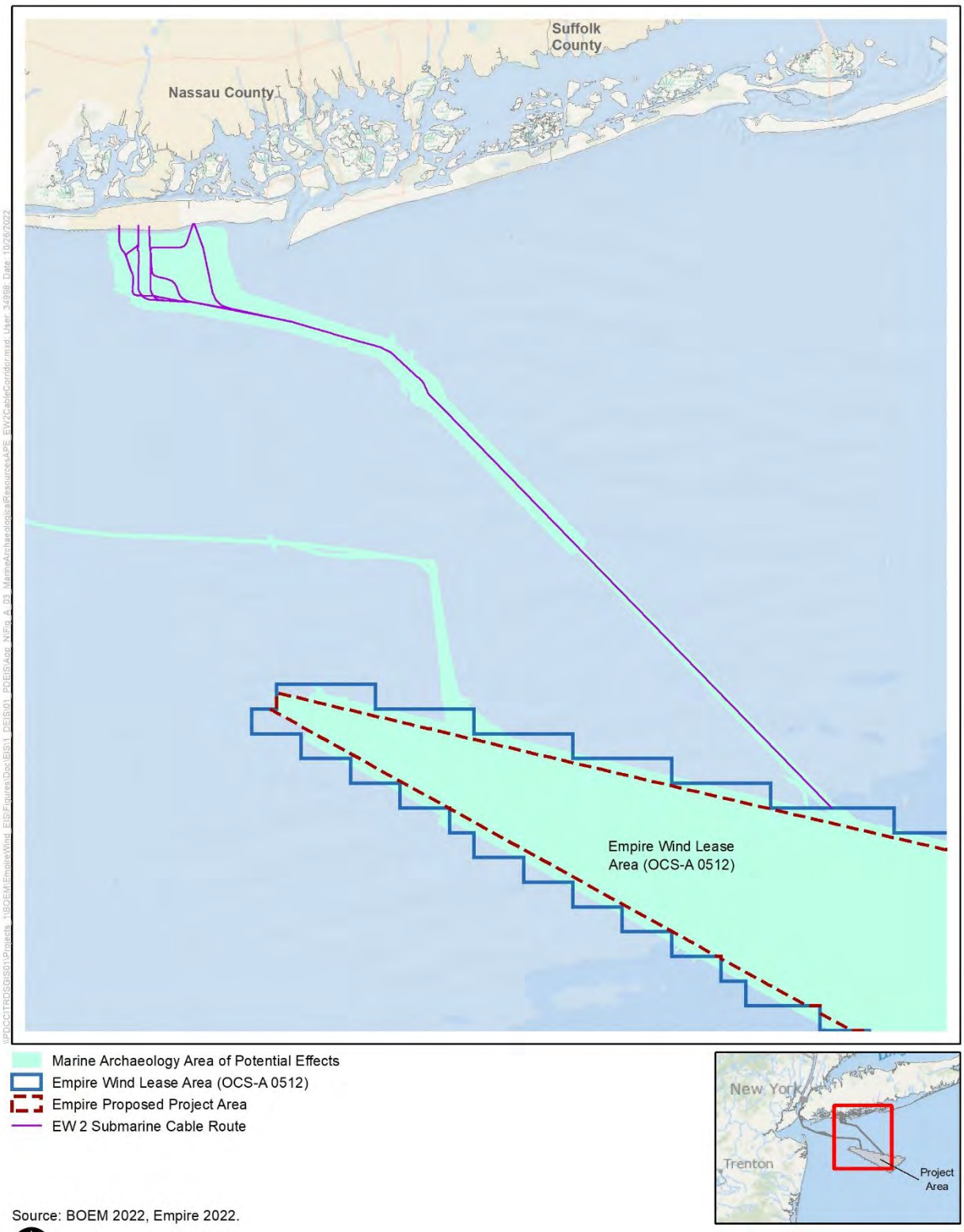

Figure 3 Marine Archaeological Resources APE for Activities within the EW 2 Cable Route Corridor

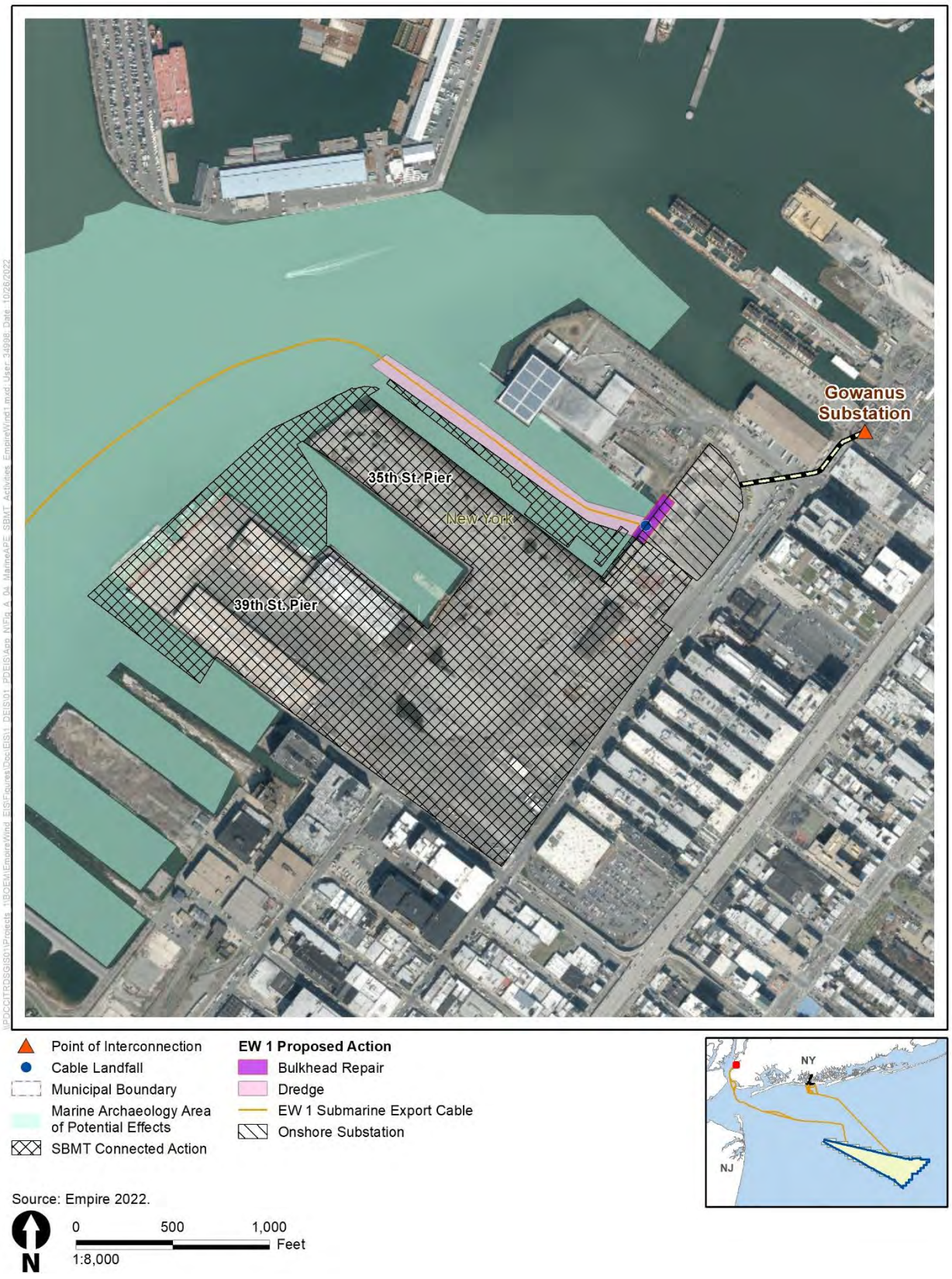

Figure 4 **Marine Archaeological Resources APE for Connected Action Activities**

Terrestrial Archaeological Resources APE Figures

Figure 5 EW 1 Terrestrial Archaeological Resources APE

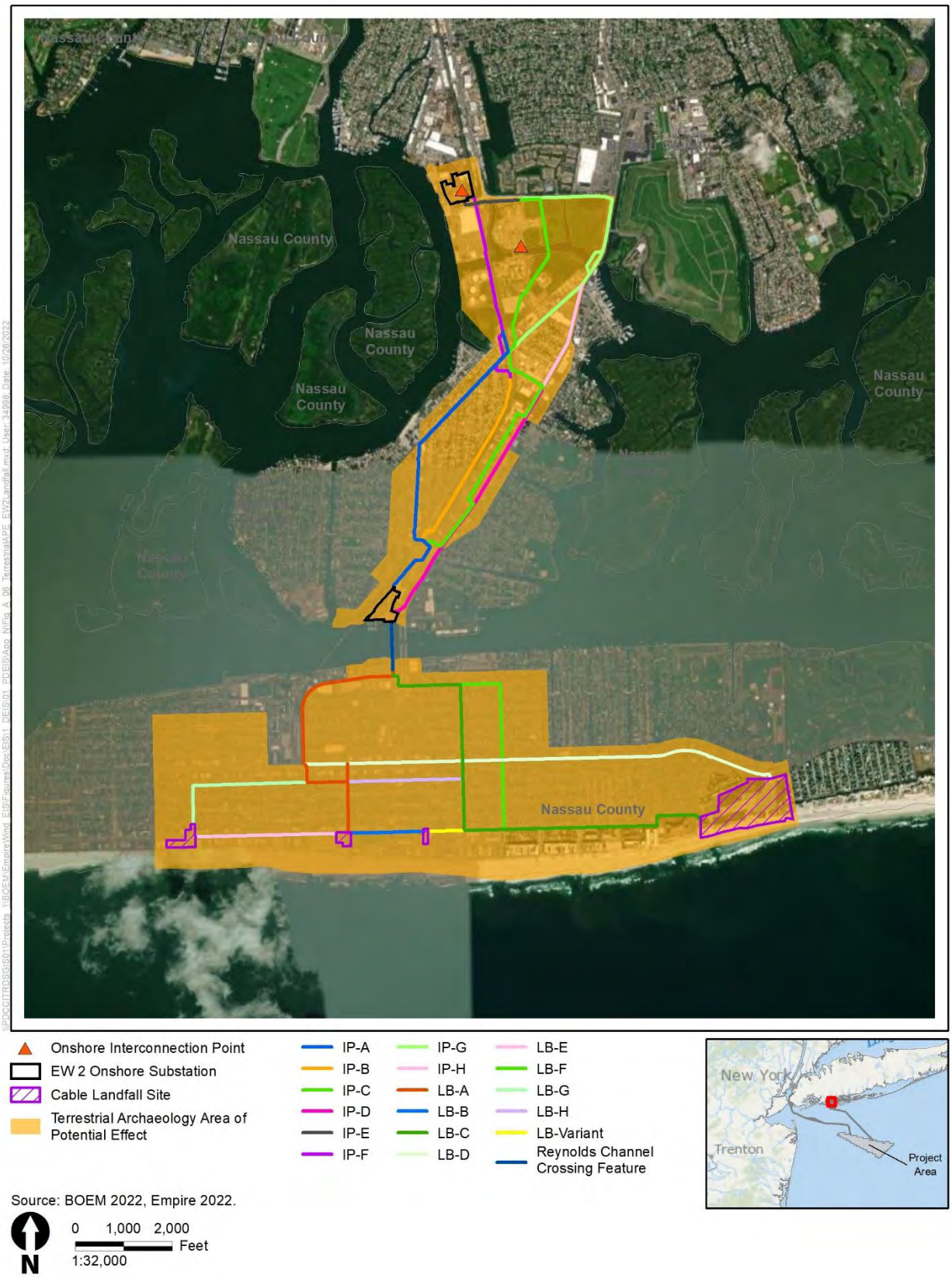

Figure 6 EW 2 Terrestrial Archaeological Resources APE

Offshore Visual APE Figures

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

0 1,000 2,000 Feet

1:24,000

Figure 7 - New Jersey Offshore Visual APE
Map 1 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

0 1,000 2,000 Feet

1:24,000

Figure 7 - New Jersey Offshore Visual APE
Map 2 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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1:24,000

Figure 7 - New Jersey Offshore Visual APE
Map 3 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

0 1,000 2,000 Feet

1:24,000

Figure 7 - New Jersey Offshore Visual APE
Map 4 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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1:24,000

Figure 7 - New Jersey Offshore Visual APE
Map 5 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 7 - New Jersey Offshore Visual APE
Map 6 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 7 - New Jersey Offshore Visual APE
Map 7 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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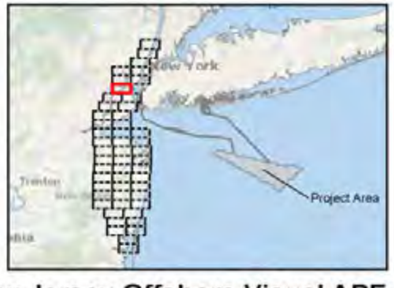
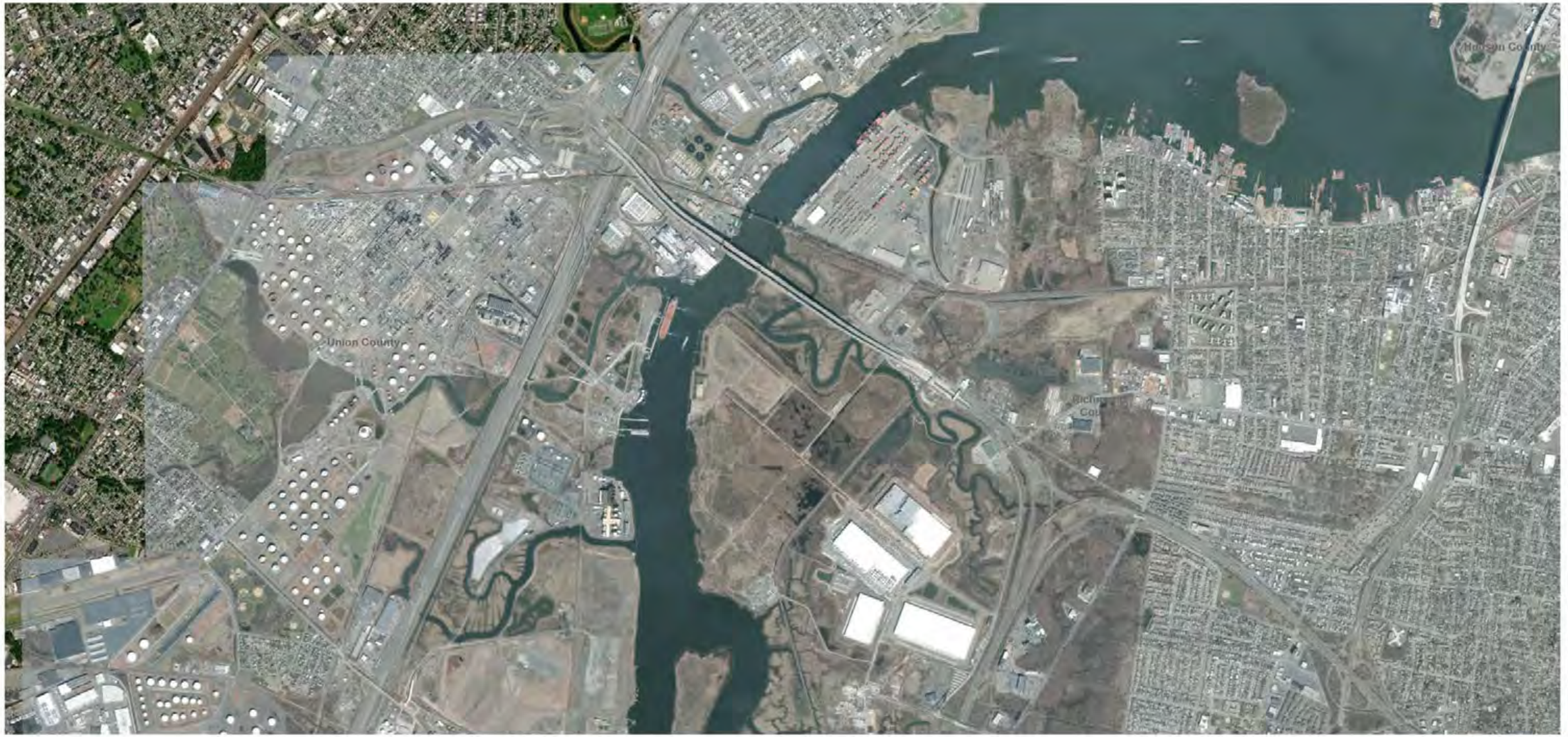


Figure 7 - New Jersey Offshore Visual APE
Map 8 of 51



Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 7 - New Jersey Offshore Visual APE
Map 9 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 7 - New Jersey Offshore Visual APE
Map 10 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 7 - New Jersey Offshore Visual APE
Map 11 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 7 - New Jersey Offshore Visual APE
Map 12 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 7 - New Jersey Offshore Visual APE
Map 13 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 7 - New Jersey Offshore Visual APE
Map 14 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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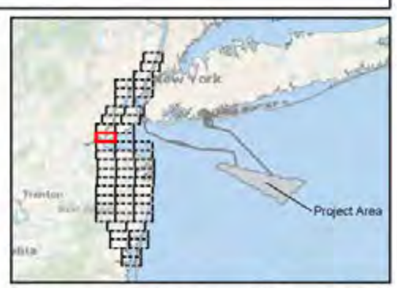

Figure 7 - New Jersey Offshore Visual APE
Map 15 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 7 - New Jersey Offshore Visual APE
Map 16 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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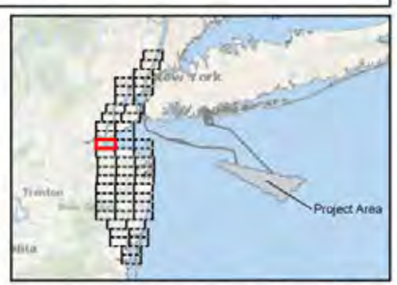

Figure 7 - New Jersey Offshore Visual APE
Map 17 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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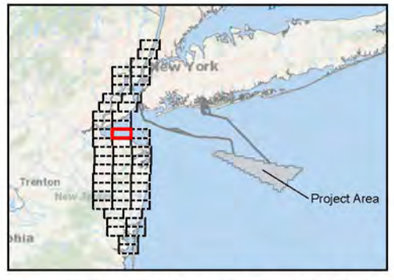

Figure 7 - New Jersey Offshore Visual APE
Map 18 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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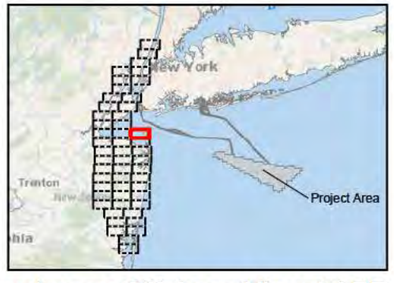

Figure 7 - New Jersey Offshore Visual APE
Map 19 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 7 - New Jersey Offshore Visual APE
Map 20 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 7 - New Jersey Offshore Visual APE
Map 21 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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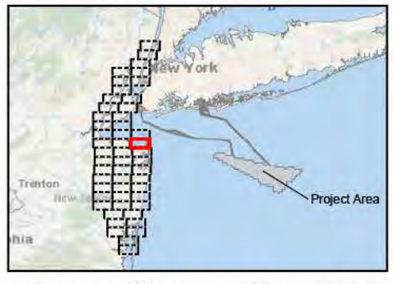

Figure 7 - New Jersey Offshore Visual APE
Map 22 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 7 - New Jersey Offshore Visual APE
Map 23 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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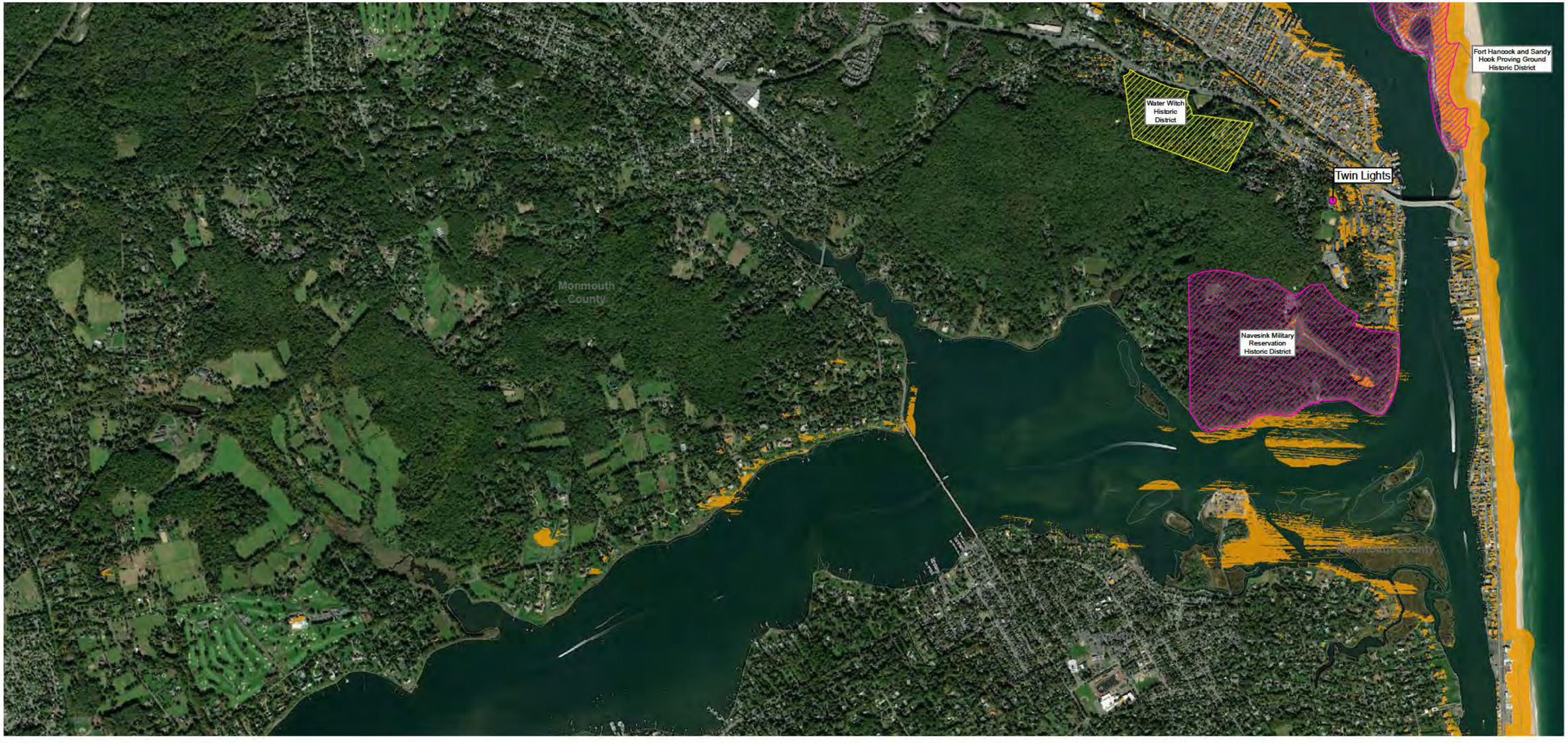
Figure 7 - New Jersey Offshore Visual APE
Map 24 of 51



Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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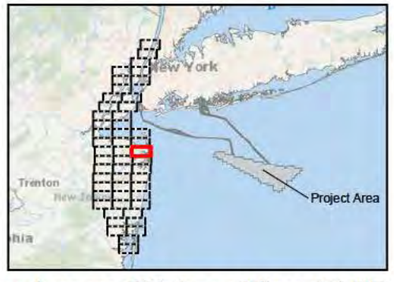

Figure 7 - New Jersey Offshore Visual APE
Map 25 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 7 - New Jersey Offshore Visual APE
Map 26 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 7 - New Jersey Offshore Visual APE
Map 27 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 7 - New Jersey Offshore Visual APE
Map 28 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 7 - New Jersey Offshore Visual APE
Map 29 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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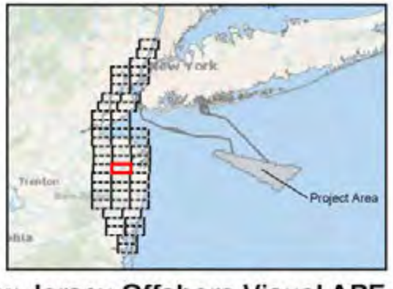
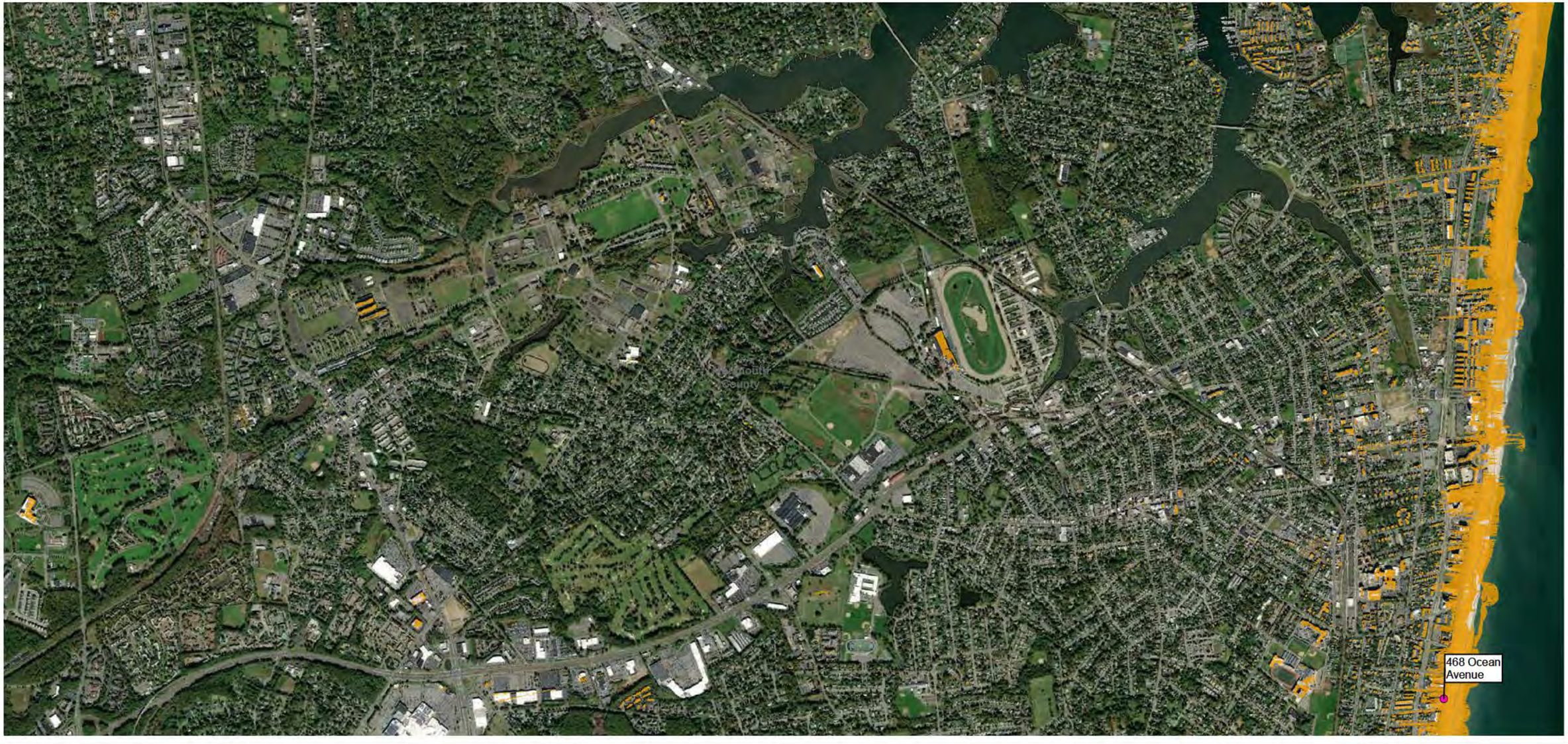


Figure 7 - New Jersey Offshore Visual APE
Map 30 of 51



Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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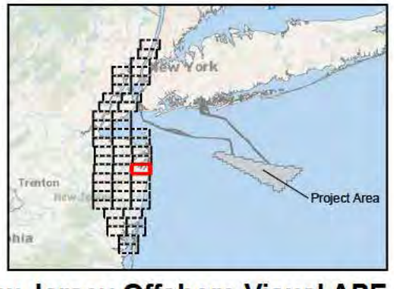

Figure 7 - New Jersey Offshore Visual APE
Map 31 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 7 - New Jersey Offshore Visual APE
Map 32 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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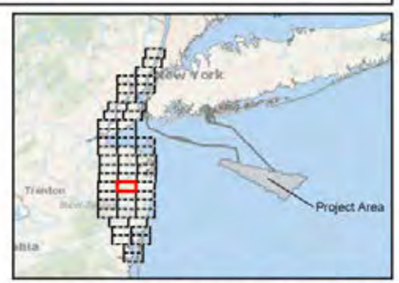
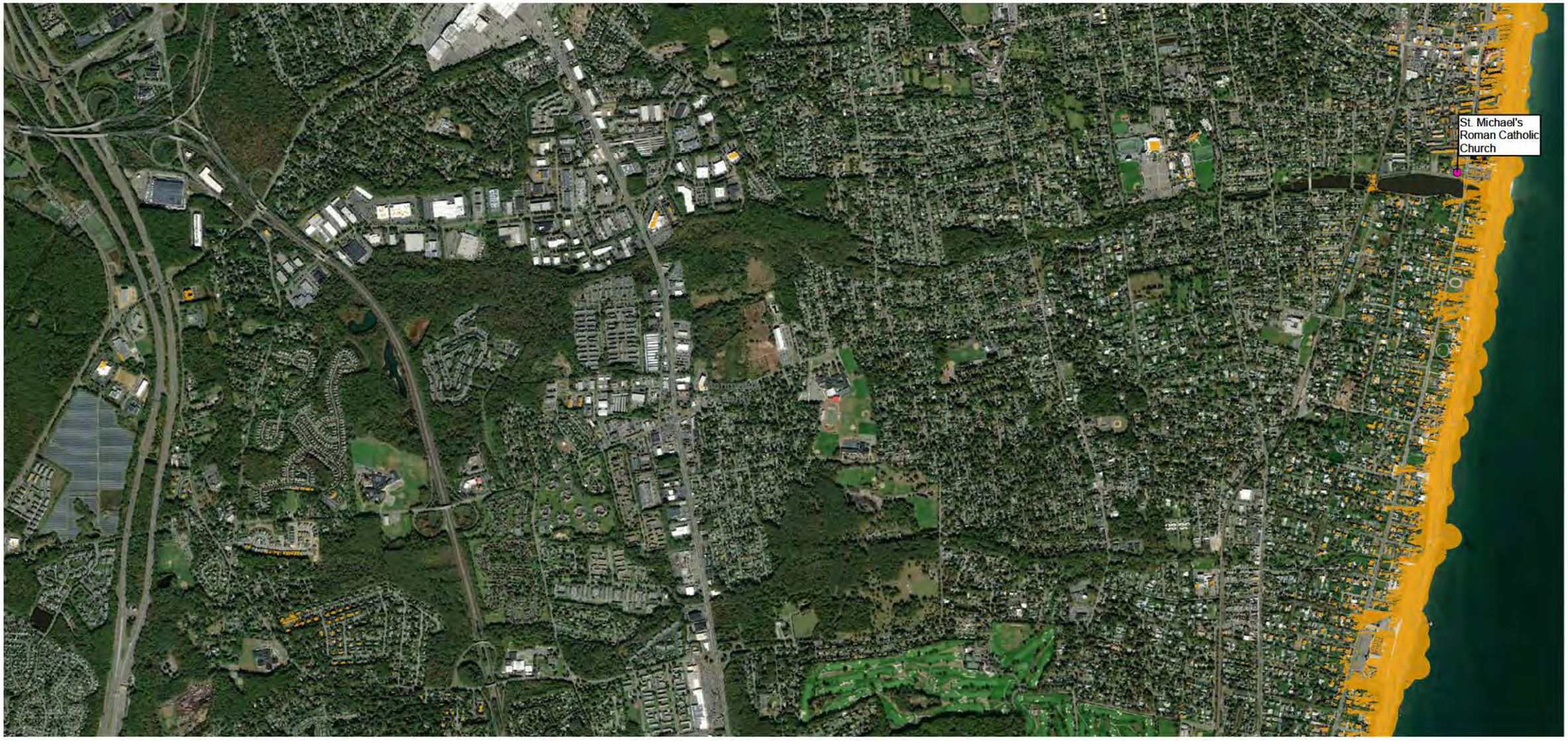


Figure 7 - New Jersey Offshore Visual APE
Map 33 of 51



Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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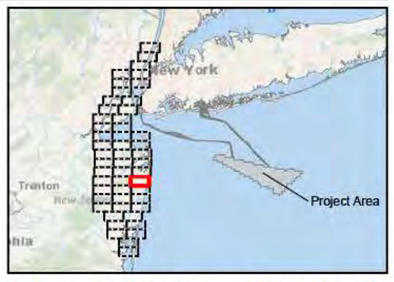

Figure 7 - New Jersey Offshore Visual APE
Map 34 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 7 - New Jersey Offshore Visual APE
Map 35 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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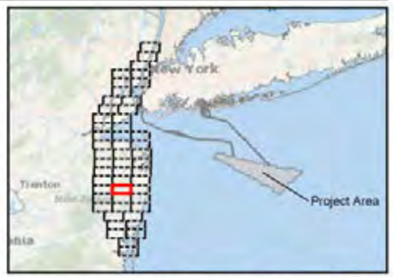
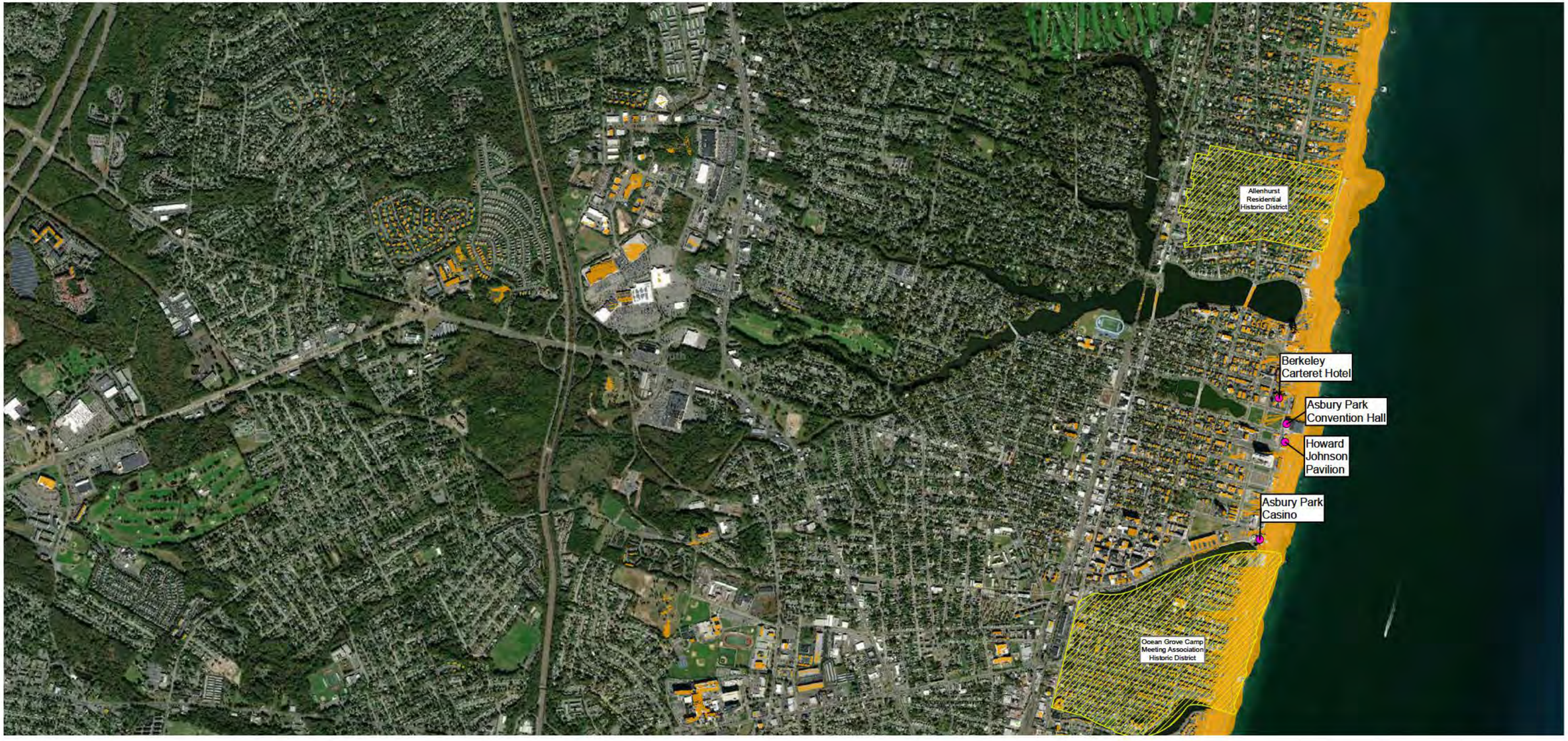


Figure 7 - New Jersey Offshore Visual APE
Map 36 of 51



Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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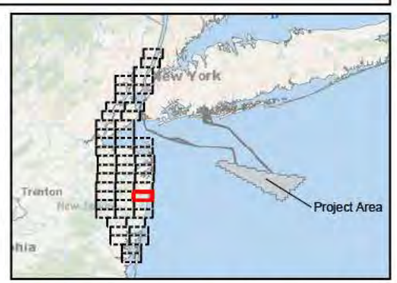

Figure 7 - New Jersey Offshore Visual APE
Map 37 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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1:24,000

Figure 7 - New Jersey Offshore Visual APE
Map 38 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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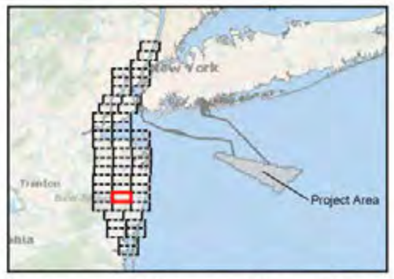

Figure 7 - New Jersey Offshore Visual APE
Map 39 of 51

Figure 7 - New Jersey Offshore Visual APE
Map 40 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 7 - New Jersey Offshore Visual APE
Map 41 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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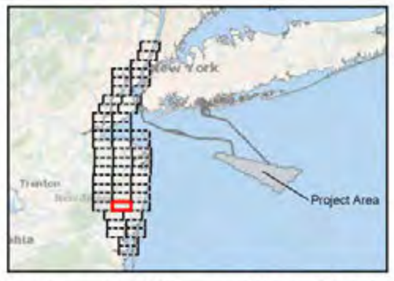
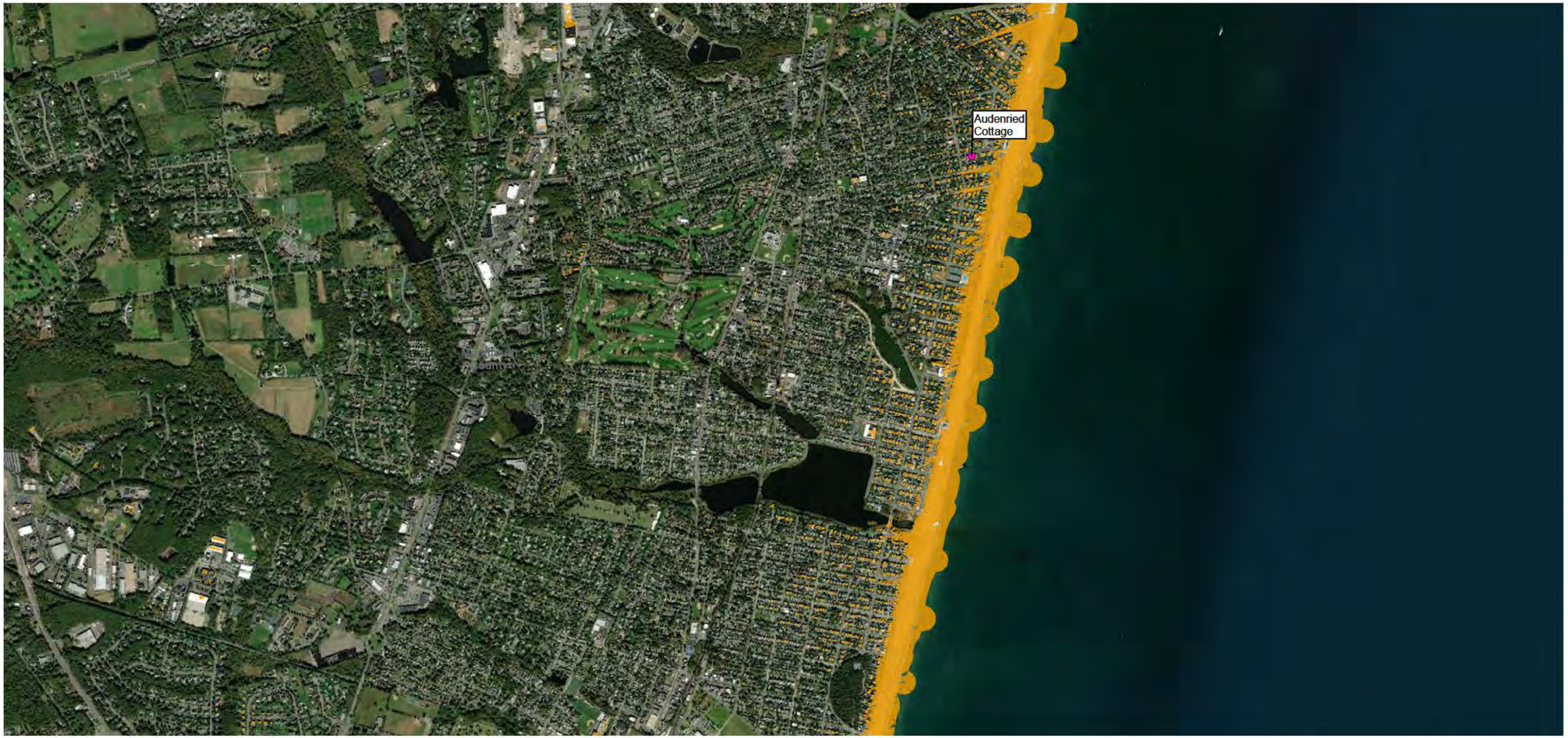


Figure 7 - New Jersey Offshore Visual APE
Map 42 of 51



Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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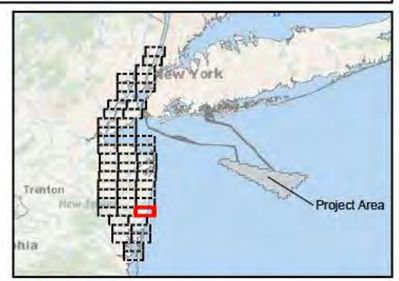

Figure 7 - New Jersey Offshore Visual APE
Map 43 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 7 - New Jersey Offshore Visual APE
Map 44 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 7 - New Jersey Offshore Visual APE
Map 45 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 7 - New Jersey Offshore Visual APE
Map 46 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 7 - New Jersey Offshore Visual APE
Map 47 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 7 - New Jersey Offshore Visual APE
Map 48 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 7 - New Jersey Offshore Visual APE
Map 49 of 51

Figure 7 - New Jersey Offshore Visual APE
Map 50 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 7 - New Jersey Offshore Visual APE
Map 51 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 1 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 2 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 3 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 8 - New York Offshore Visual APE
Map 4 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 5 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 6 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 7 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 8 - New York Offshore Visual APE
Map 8 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 9 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 10 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 11 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 12 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 13 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 14 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 15 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 16 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 17 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 18 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 19 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 20 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 21 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 22 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 8 - New York Offshore Visual APE
Map 23 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 8 - New York Offshore Visual APE
Map 24 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 8 - New York Offshore Visual APE
Map 25 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 8 - New York Offshore Visual APE
Map 26 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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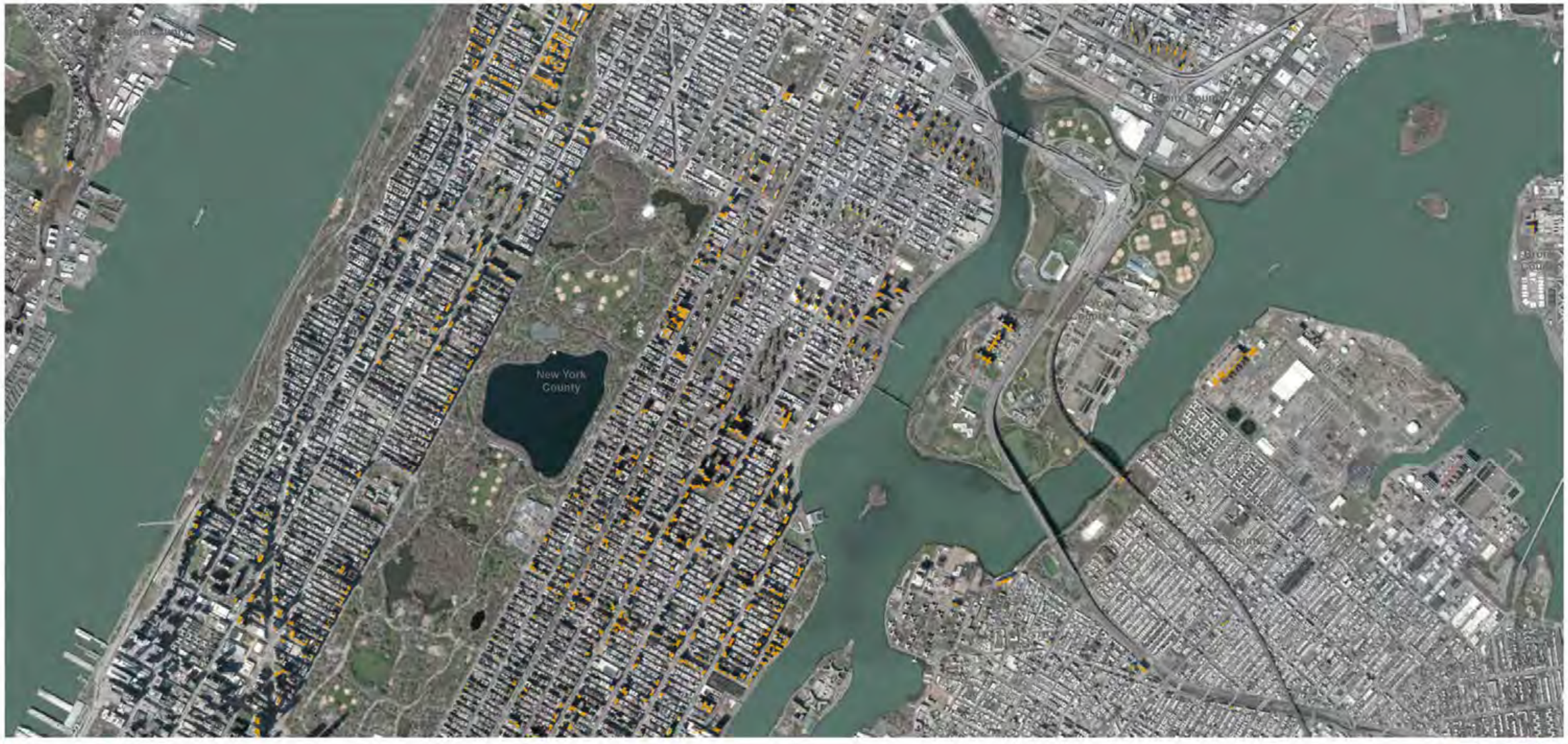
Figure 8 - New York Offshore Visual APE
Map 27 of 83



Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 8 - New York Offshore Visual APE
Map 28 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 29 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 8 - New York Offshore Visual APE
Map 30 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 8 - New York Offshore Visual APE
Map 31 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 8 - New York Offshore Visual APE
Map 32 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 8 - New York Offshore Visual APE
Map 33 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 34 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 35 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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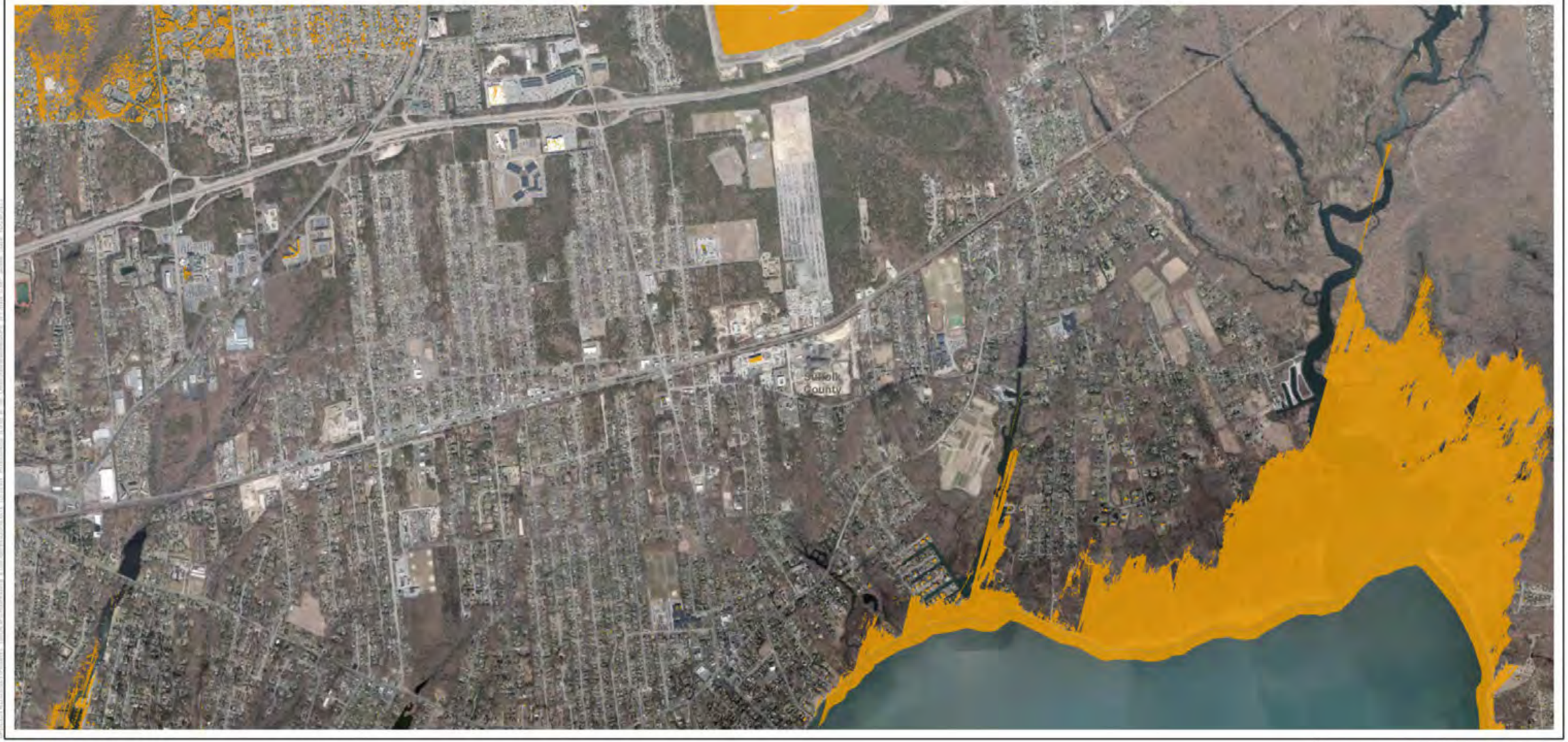
Figure 8 - New York Offshore Visual APE
Map 36 of 83



Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 37 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 38 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 39 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 40 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 41 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 8 - New York Offshore Visual APE
Map 42 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 8 - New York Offshore Visual APE
Map 43 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 8 - New York Offshore Visual APE
Map 44 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 45 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 8 - New York Offshore Visual APE
Map 46 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 47 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 48 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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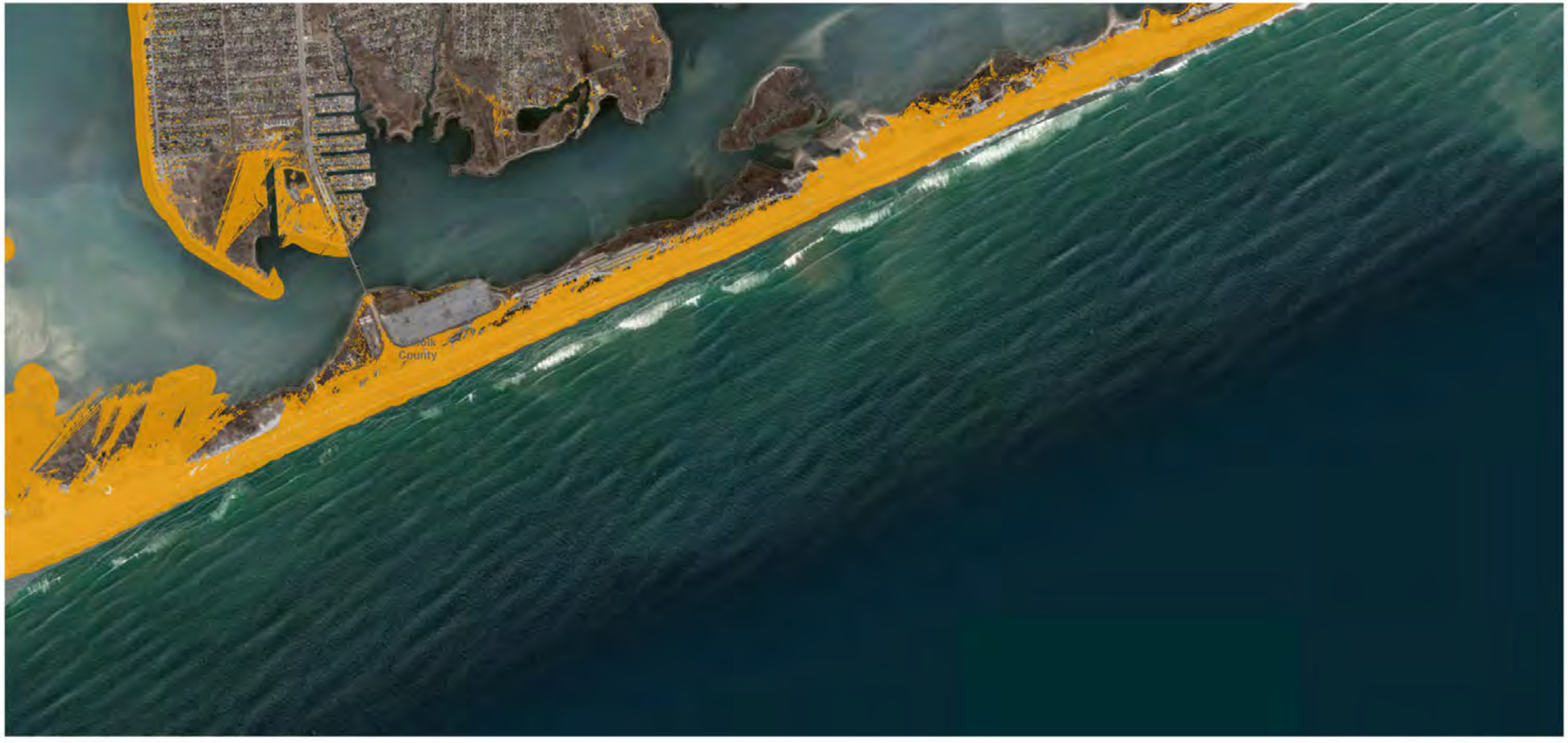
Figure 8 - New York Offshore Visual APE
Map 49 of 83



Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 8 - New York Offshore Visual APE
Map 50 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 51 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 52 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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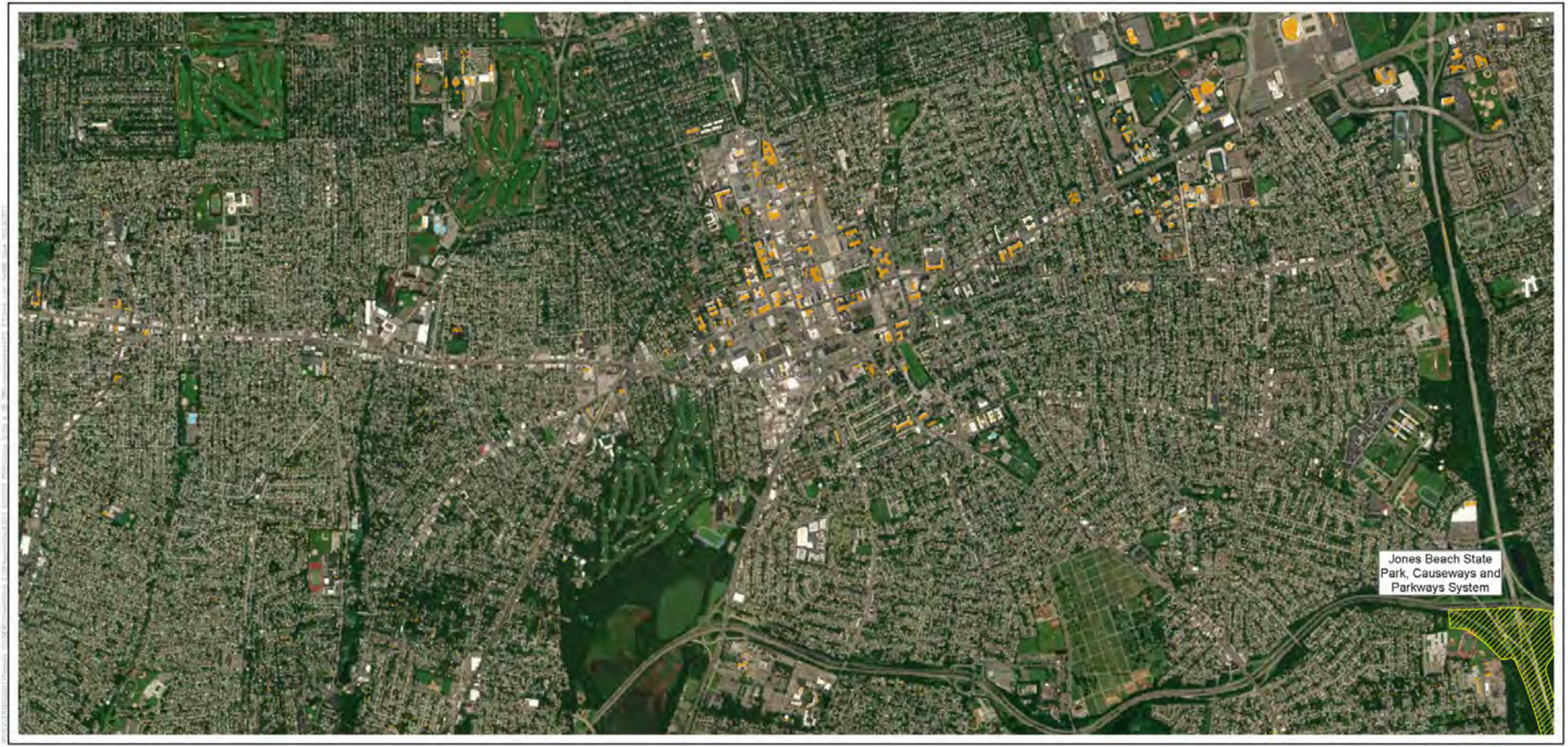
Figure 8 - New York Offshore Visual APE
Map 53 of 83



Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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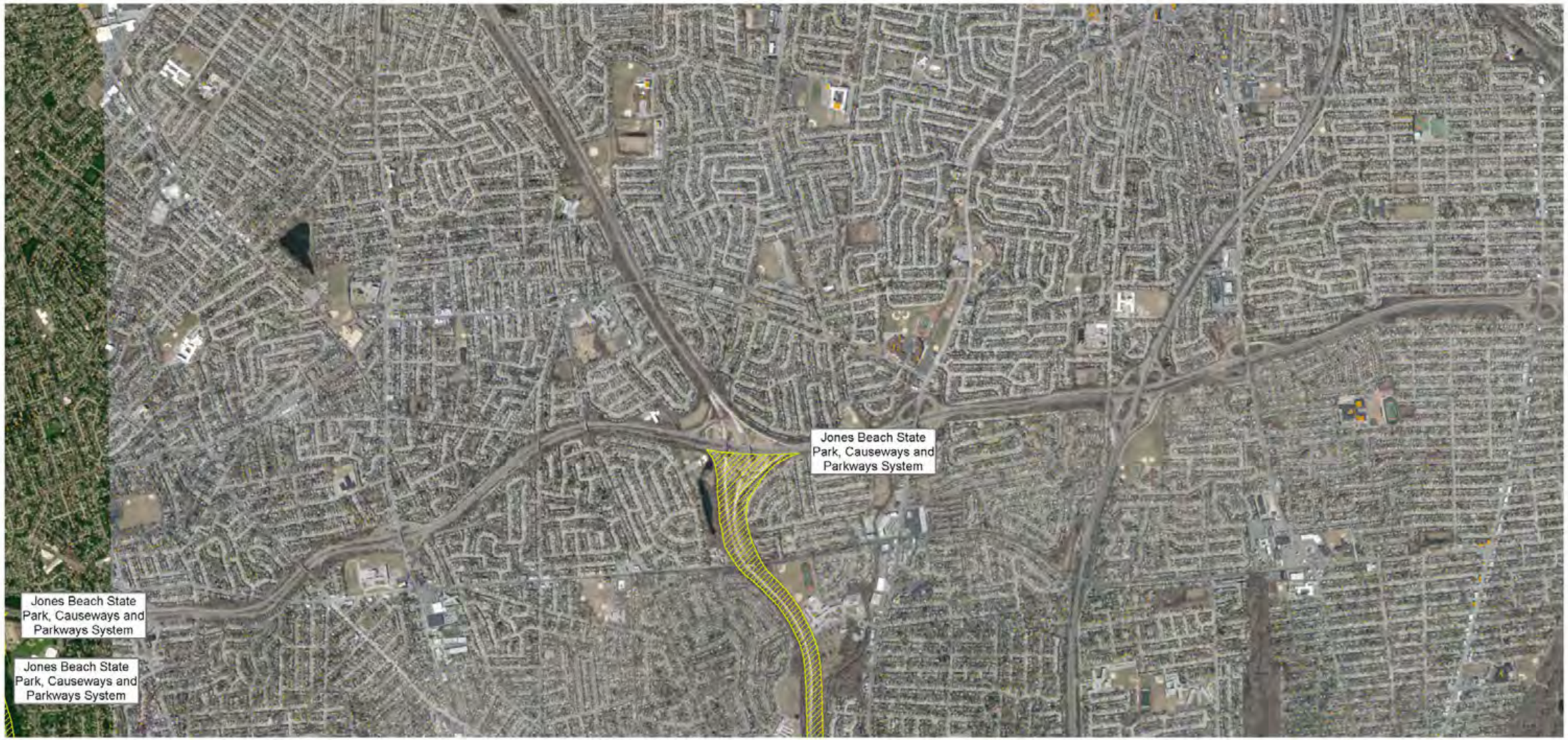
Figure 8 - New York Offshore Visual APE
Map 54 of 83



Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 55 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 56 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 8 - New York Offshore Visual APE
Map 57 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 8 - New York Offshore Visual APE
Map 58 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 8 - New York Offshore Visual APE
Map 59 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 8 - New York Offshore Visual APE
Map 60 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 61 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 62 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 8 - New York Offshore Visual APE
Map 63 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 64 of 83

Jones Beach State Park, Causeways and Parkways System

Jones Beach State Park, Causeways and Parkways System

Jones Beach State Park, Causeways and Parkways System

Jones Beach State Park, Causeways and Parkways System

Jones Beach State Park, Causeways and Parkways System

Nassau County

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 65 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

0 1,000 2,000 Feet

1:24,000

Figure 8 - New York Offshore Visual APE
Map 66 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

0 1,000 2,000 Feet

1:24,000

Figure 8 - New York Offshore Visual APE
Map 67 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

0 1,000 2,000 Feet

1:24,000

Figure 8 - New York Offshore Visual APE
Map 68 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

0 1,000 2,000 Feet

1:24,000

Figure 8 - New York Offshore Visual APE
Map 69 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

0 1,000 2,000 Feet

1:24,000

Figure 8 - New York Offshore Visual APE
Map 70 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

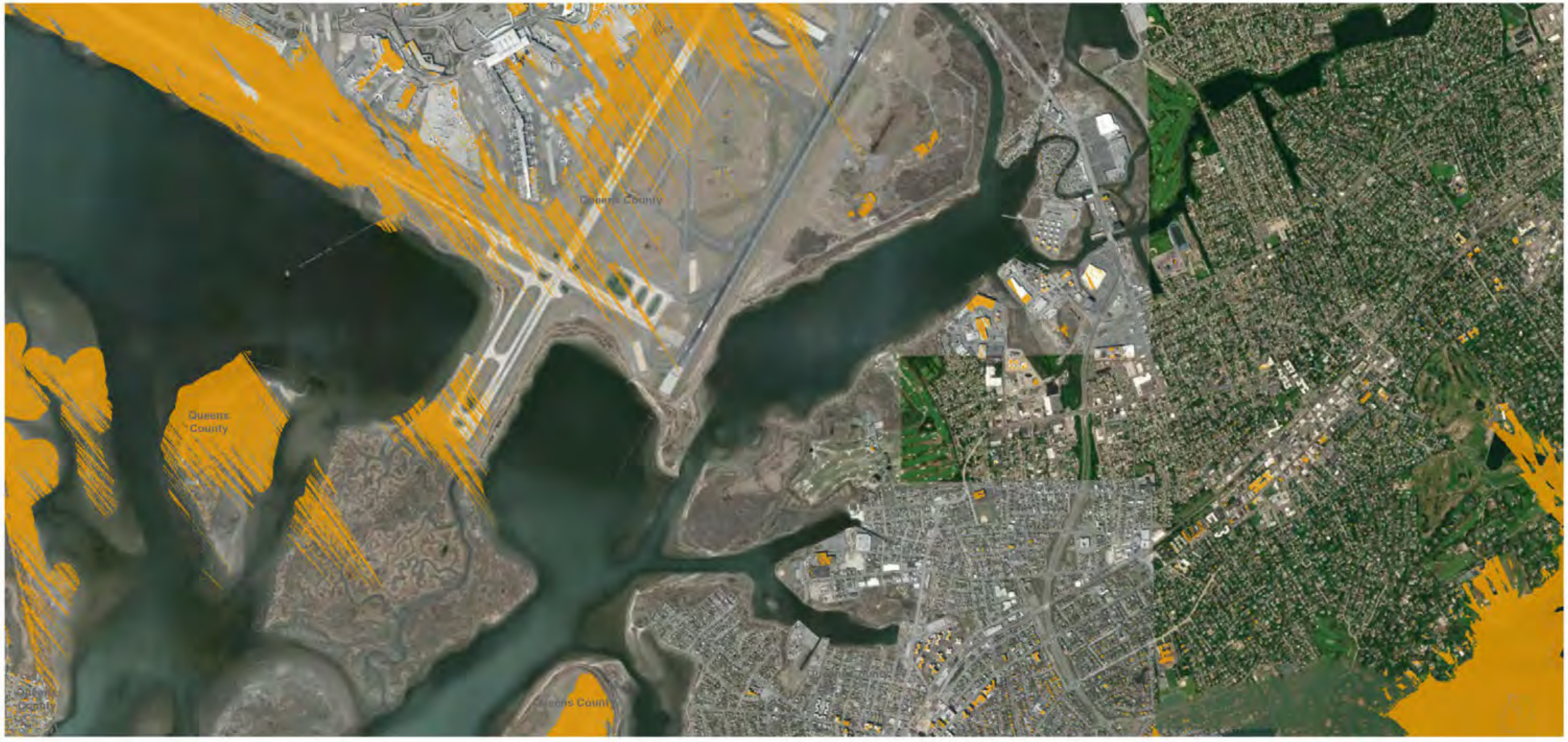
- Adverse Effect
- No Adverse Effect

N

0 1,000 2,000 Feet

1:24,000

Figure 8 - New York Offshore Visual APE
Map 71 of 83



Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

0 1,000 2,000 Feet

1:24,000

Figure 8 - New York Offshore Visual APE
Map 72 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

0 1,000 2,000 Feet

1:24,000

Figure 8 - New York Offshore Visual APE
Map 73 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

0 1,000 2,000 Feet

1:24,000

Figure 8 - New York Offshore Visual APE
Map 74 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

0 1,000 2,000 Feet

1:24,000

Figure 8 - New York Offshore Visual APE
Map 75 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

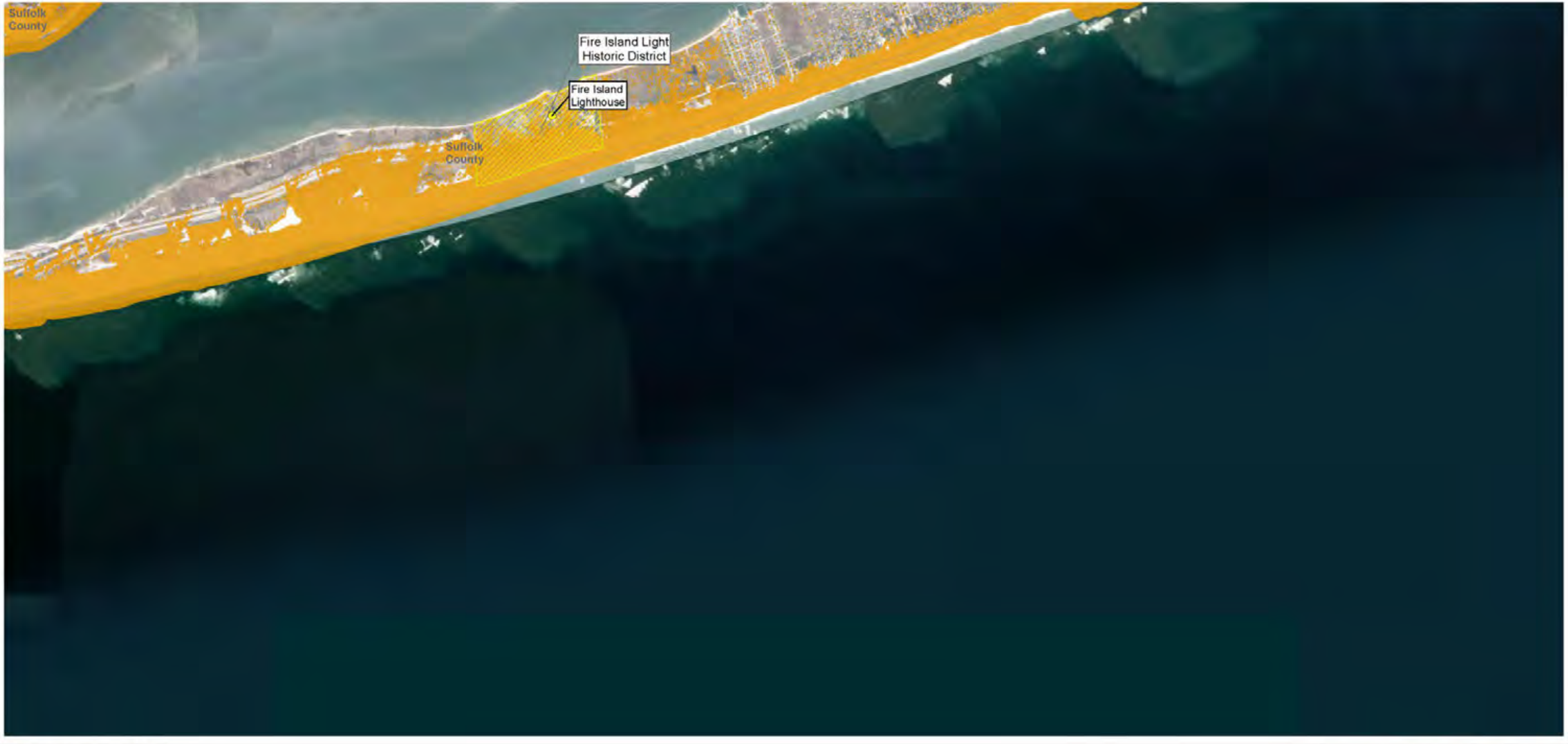
- Adverse Effect
- No Adverse Effect

N

0 1,000 2,000 Feet

1:24,000

Figure 8 - New York Offshore Visual APE
Map 76 of 83



Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

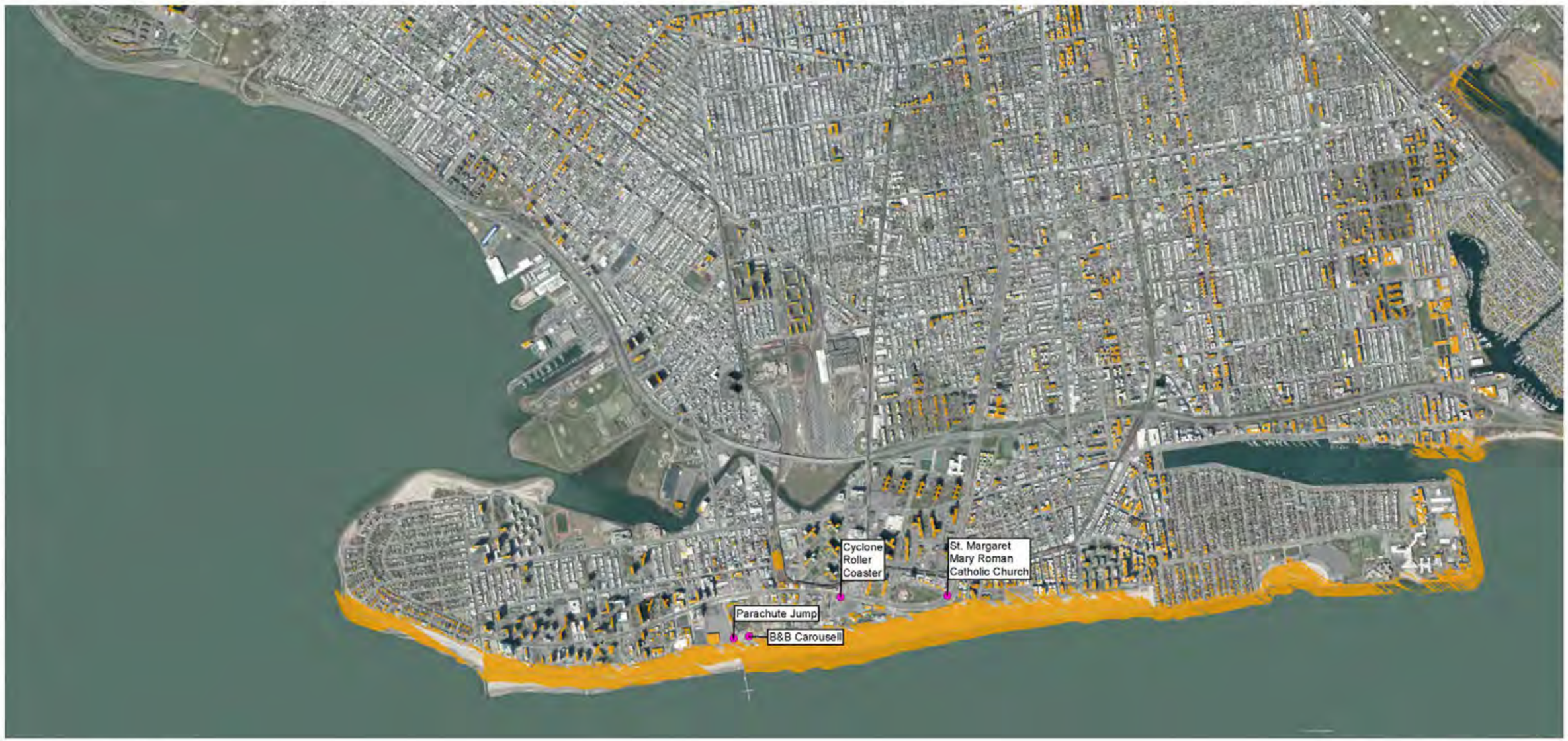
- Adverse Effect
- No Adverse Effect

N

0 1,000 2,000 Feet

1:24,000

Figure 8 - New York Offshore Visual APE
Map 77 of 83



Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

0 1,000 2,000 Feet

1:24,000

Figure 8 - New York Offshore Visual APE
Map 78 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

0 1,000 2,000 Feet

1:24,000

Figure 8 - New York Offshore Visual APE
Map 79 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

0 1,000 2,000 Feet

1:24,000

Figure 8 - New York Offshore Visual APE
Map 80 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

0 1,000 2,000 Feet

1:24,000

Figure 8 - New York Offshore Visual APE
Map 81 of 83

Jones Beach State Park, Causeways and Parkways System

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

0 1,000 2,000 Feet

1:24,000

Figure 8 - New York Offshore Visual APE
Map 82 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

0 1,000 2,000 Feet

1:24,000

Figure 8 - New York Offshore Visual APE
Map 83 of 83

Onshore Visual APE Figures

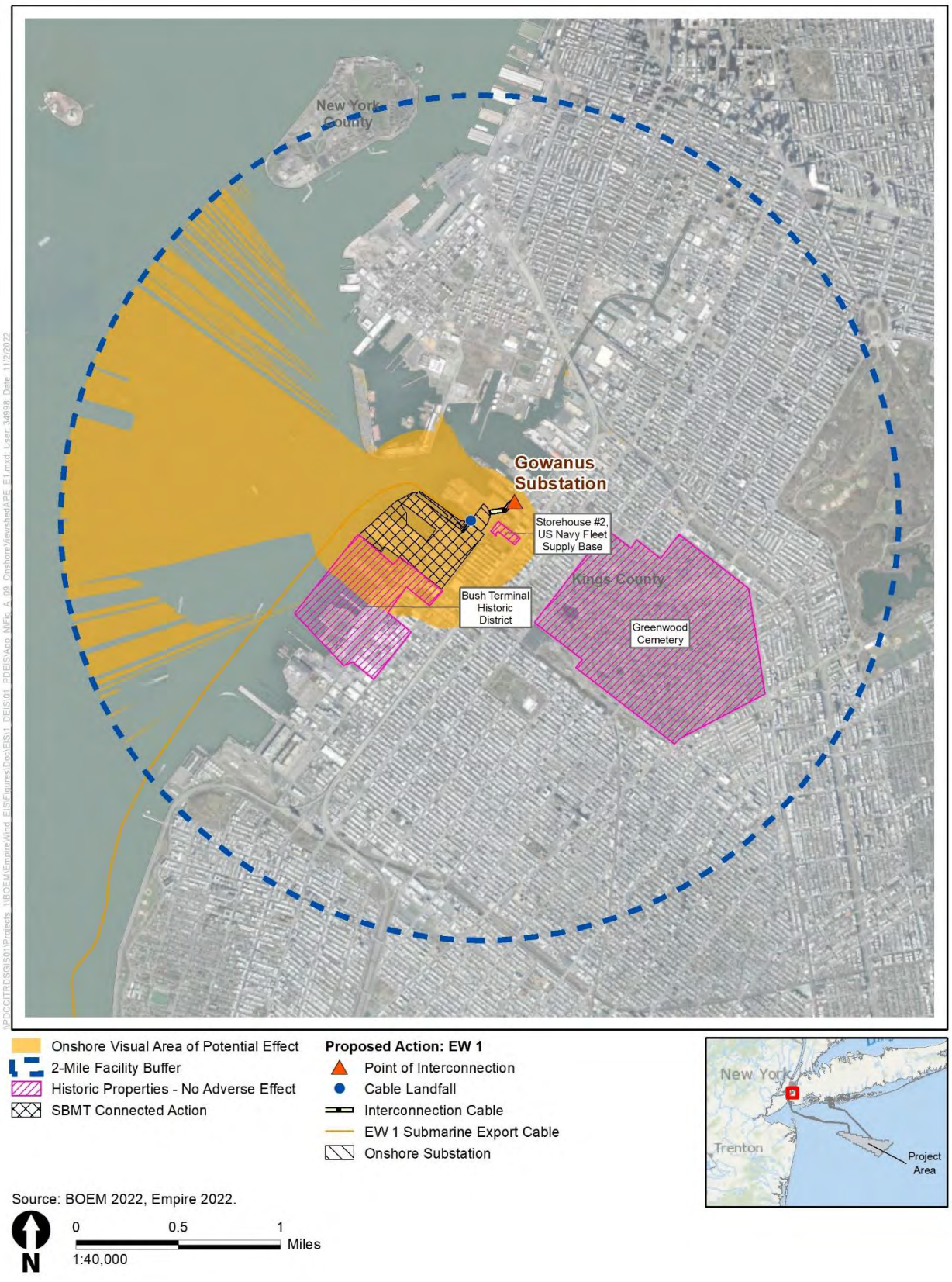


Figure 9 Onshore Visual APE for EW 1 Substation

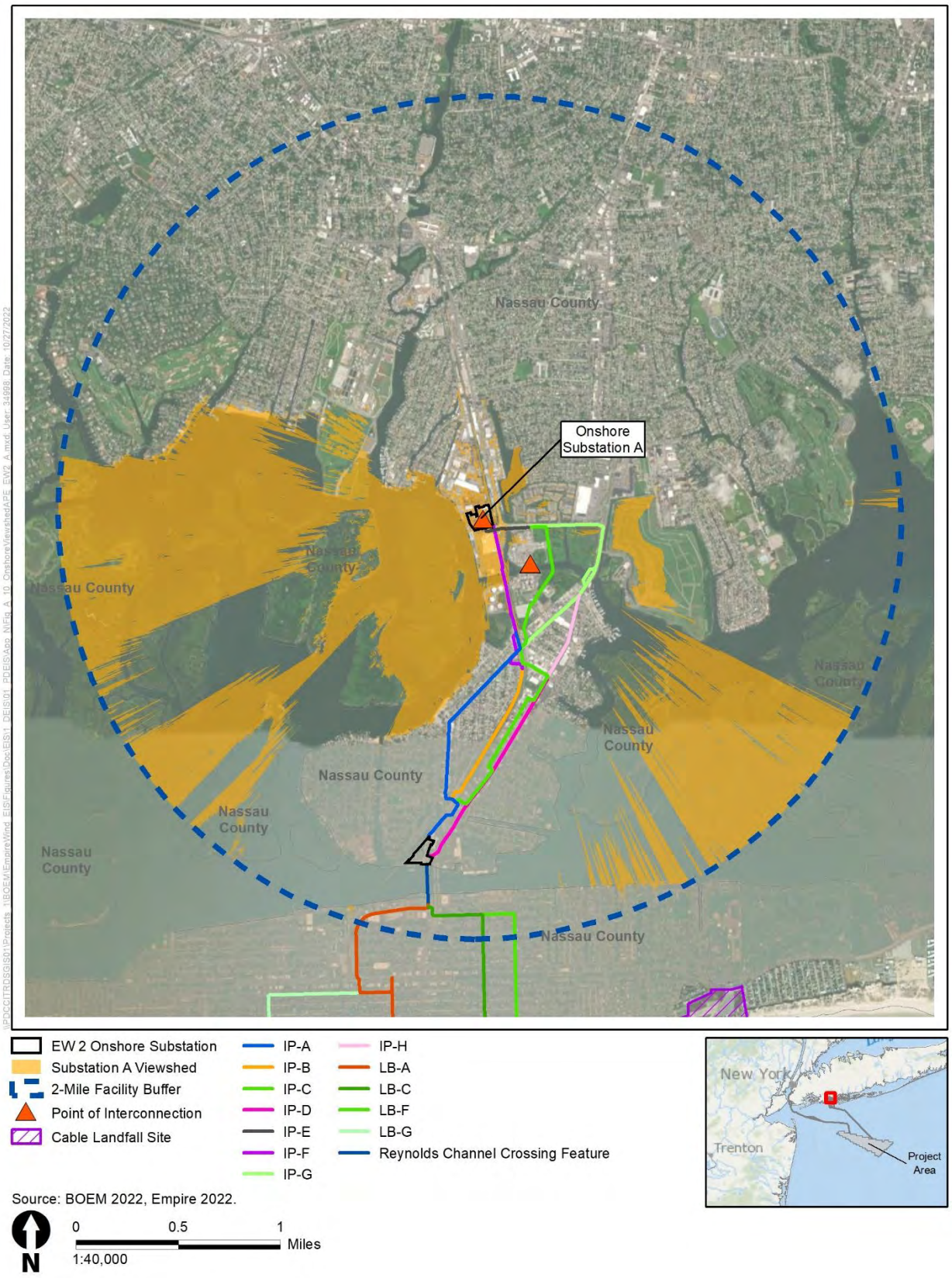


Figure 10 Onshore Visual APE for EW 2 Substation A

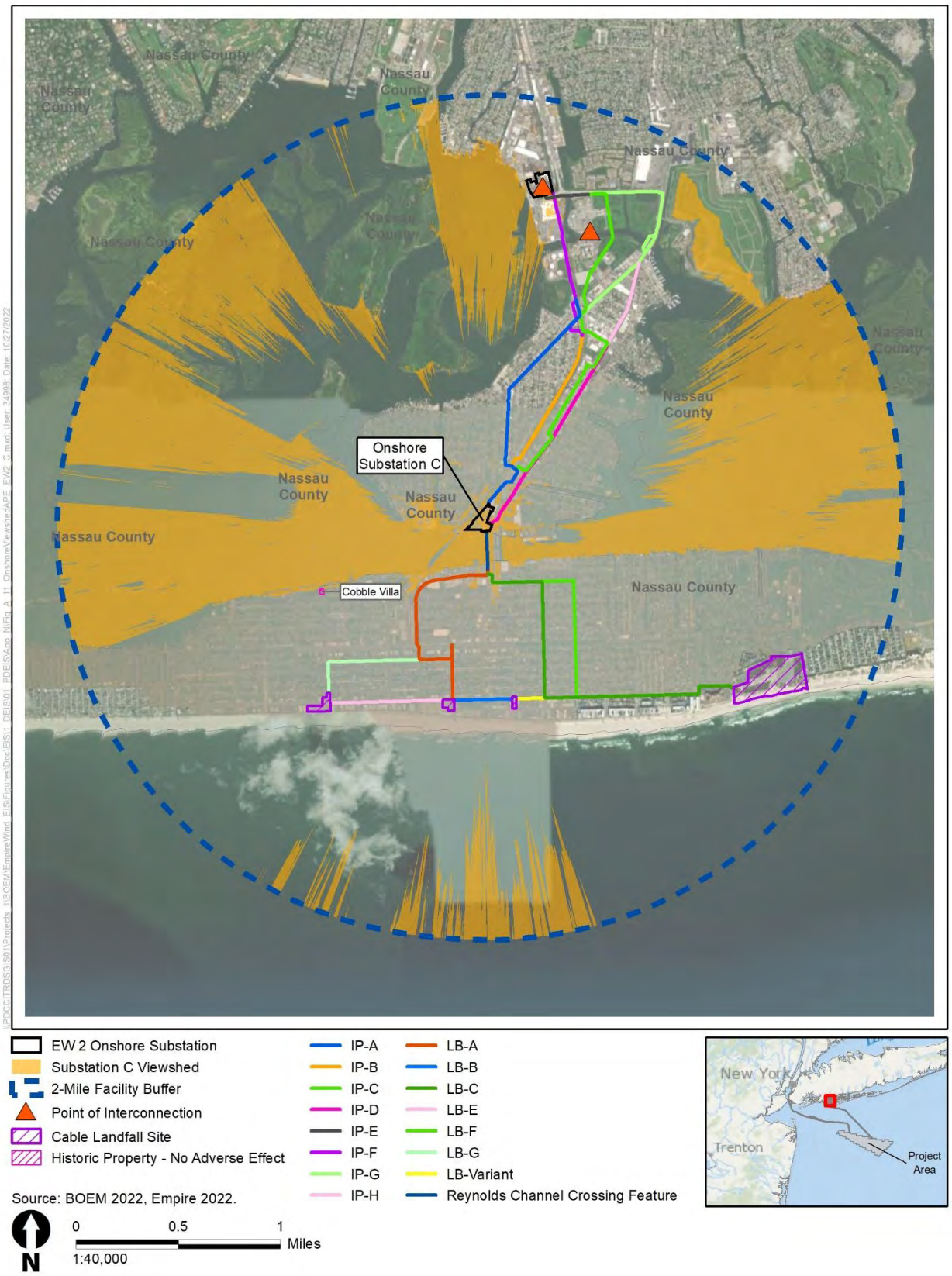


Figure 11 Onshore Visual APE for EW 2 Substation C

ATTACHMENT 2 – LISTS OF INVITED AND PARTICIPATING CONSULTING PARTIES

Table 1. Parties Invited to Participate in NHPA Section 106 Consultation

Participants in the Section 106 Process	Invited Consulting Parties
SHPOs and State Agencies	New Jersey Commission on Indian Affairs
	New Jersey Cultural Trust
	NJDEP, Historic Preservation Office
	New Jersey Division of Archives and Record Management
	New Jersey Historic Trust
	New Jersey Historical Commission
	New Jersey Office of Planning Advocacy
	New Jersey State Museum
	New Jersey State Parks, Forests and Historic Sites
	New York SHPO
	New York State Parks, Recreation and Historic Preservation
	New York State Parks, Recreation and Historic Preservation, Long Island State Parks, Region 9
	New York State Parks, Recreation and Historic Preservation, Region 9, Gilgo State Park
	New York State Parks, Recreation and Historic Preservation, Region 9, Jones Beach State Park
	New York State Parks, Recreation and Historic Preservation, Region 9, Robert Moses State Park
Federal Agencies	ACHP
	BSEE
	NOAA
	USACE
	USCG
	USEPA
	USFWS
	National Park Service
	National Park Service, Region 1
Federally Recognized Tribes	Absentee-Shawnee Tribe of Indians of Oklahoma
	Delaware Tribe of Indians
	Eastern Shawnee Tribe of Oklahoma
	Mohegan Tribe of Connecticut
	Shawnee Tribe
	Stockbridge-Munsee Community, Wisconsin/Band of Mohican Indians
	The Delaware Nation

Participants in the Section 106 Process	Invited Consulting Parties
	The Narragansett Indian Tribe
	The Shinnecock Indian Nation
Non-Federally Recognized Tribe	Nanticoke Indian Association, Inc.
	Nanticoke Lenni-Lenape Tribal Nation
	Powhatan Renape Nation
	Ramapough Lenape Indian Nation
	Ramapough Mountain Indians
	Lenape Indian Tribe of Delaware
Local Government	Aberdeen Township
	Allenhurst Borough
	Amityville Historical Society
	Asbury Park
	Atlantic Highlands Borough
	Avon-by-the-Sea Borough
	Belmar Borough
	Borough of Brooklyn
	Borough of Manhattan
	Borough of Queens
	Borough of Staten Island
	Borough of The Bronx
	Bradley Beach Borough
	Brick Township
	Bronx County
	City of Bayonne
	City of Bayonne Planning Board
	City of Hoboken
	City of Hoboken Historic Preservation Commission
	City of Jersey City
	City of Long Beach
	Deal Borough
	Highlands Borough
	Hudson County
	Incorporated Village of Lindenhurst
	Keyport Borough
	Kings County
	Lake Como Borough
	Loch Arbour Village

Participants in the Section 106 Process	Invited Consulting Parties
	Long Branch
	Manasquan Borough
	Middlesex County
	Middletown Township
	Monmouth Beach Borough
	Monmouth County
	Nassau County
	Neptune Township
	New York City
	New York City Department of Parks & Recreation
	New York City Landmarks Commission
	New York State Council of Parks
	Ocean County
	Old Bridge Township
	Queens County
	Richmond County
	Sea Bright Borough
	Sea Girt Borough
	Spring Lake Borough
	Suffolk County
	Town of Babylon
	Town of Brookhaven
	Town of Hempstead
	Town of Islip
	Town of Oyster Bay
	Union Beach Borough
	Village of Amityville
	Village of Bellport
	Village of Brightwaters
	Village of Mastic Beach
	Village of Patchogue
Nongovernmental Organizations or Groups	Alliance for Coney Island
	American Irish Historical Society
	American Jewish Historical Society
	Asbury Park Historical Society
	Atlantic Highlands Historical Society
	Bay Shore Historical Society

Participants in the Section 106 Process	Invited Consulting Parties
	Bayonne Community Museum, Inc.
	Bellport-Brookhaven Historical Society
	Belmar Historical Society
	Bradley Beach Historical Society
	Brick Township Historical Society
	Bronx County Historical Society
	Crossroads of the American Revolution in New Jersey
	East Islip Historical Society
	Equinor Wind US, LLC
	Friends of Asbury Park Environmental Shade Tree Commission
	Friends of Monmouth County Parks
	Friends of Sunset Park
	Greater Patchogue Historical Society
	Green-Wood Cemetery
	Hispanic Society of America
	Historic Districts Council
	Historic House Trust of New York City
	Historical Society for the Preservation of the Underground Railroad
	Historical Society of East Rockaway and Lynbrook
	Historical Society of Highlands
	Historical Society of Islip Hamlet
	Historical Society of Ocean Grove
	Hoboken Historical Museum
	Hudson County Historical Society
	Hudson County Register
	Huntington Historical Society
	Italian Historical Society of America (Brooklyn)
	Jersey City Landmarks Conservancy
	Keyport Historical Society
	Long Beach Historical and Preservation Society
	Long Branch Historical Museum Association
	Long Island Maritime Museum
	Malverne Historical and Preservation Society
	Mastic Peninsula Historical Society
	Matawan Historical Society
	Middletown Township Historical Society
	Monmouth County Historical Society

Participants in the Section 106 Process	Invited Consulting Parties
	Nassau County Historical Society
	Nassau Historical Society
	National Maritime Historical Society
	New Jersey Future
	New Jersey Historical Society
	New Jersey Lighthouse Society
	New Jersey Maritime Museum
	New York Central Historical Society
	New-York Historical Society
	Ocean County Historical Society
	Oyster Bay Historical Society
	Preservation Alliance of Spring Lake
	Preservation League of New York
	Preservation New Jersey
	Queens County Historical Society
	Queens Historical Society
	Richmond County Historical Society
	Romer Shoal Light
	Roosevelt Island Historical Society
	Sea Bright Historical Society
	Spring Lake Historical Society
	Squan Village Historical Society
	Staten Island Historical Society at Historic Richmond Town
	Suffolk County Historical Society
	The Archaeological Society of New Jersey
	The League of Historical Societies of New Jersey
	The Sandy Hook Foundation
	Thomas Warne Museum/Madison-Old Bridge Township Historical Society
	Twin Lights Historical Society
	Village of Babylon Historical Society
	West Islip Historical Society

Table 2. Consulting Parties Participating in Section 106 Consultation

Participants in the Section 106 Process	Participating Consulting Parties
SHPOs and State Agencies	NJDEP, Historic Preservation Office
	New Jersey Office of Planning Advocacy
	New York SHPO
	New York State Parks, Recreation and Historic Preservation
	New York State Parks, Recreation and Historic Preservation, Long Island State Parks Region 9
	New York State Parks, Recreation and Historic Preservation, Region 9, Gilgo State Park
	New York State Parks, Recreation and Historic Preservation, Region 9, Robert Moses State Park
Federal Agencies	ACHP
	National Park Service
Federally Recognized Tribes	Delaware Tribe of Indians
	The Delaware Nation
	The Shinnecock Indian Nation
	Wampanoag Tribe of Gay Head (Aquinnah)
Local Government	Atlantic Highlands Borough
	City of Long Beach
	Highlands Borough
	Lake Como Borough
	Long Branch
	Nassau County
	New York City Landmarks Commission
	Ocean County
	Sea Bright Borough
	Sea Girt Borough
	Suffolk County
	Town of Babylon
	Town of Hempstead
	Town of Islip
	Village of Amityville
	Village of Bellport
Nongovernmental Organizations or Groups	Bay Shore Historical Society
	Equinor Wind US, LLC
	Historical Society of Highlands
	Point O'Woods Association
	Romer Shoal Light
	The League of Historical Societies of New Jersey

Table 3. Parties Invited to Consult under Section 106 and that Did Not Participate in Consultation

Participants in the Section 106 Process	Invited Consulting Parties that Did Not Participate in Consultation
SHPOs and State Agencies	New Jersey Commission on Indian Affairs
	New Jersey Cultural Trust
	New Jersey Division of Archives and Record Management
	New Jersey Historic Trust
	New Jersey Historical Commission
	New Jersey State Museum
	New Jersey State Parks, Forests and Historic Sites
Federal Agencies	BSEE
	NOAA
	USACE
	USCG
	USEPA
	USFWS
	National Park Service, Region 1
Federally Recognized Tribes	Absentee-Shawnee Tribe of Indians of Oklahoma
	Eastern Shawnee Tribe of Oklahoma
	Mohegan Tribe of Connecticut
	Shawnee Tribe
	Stockbridge-Munsee Community, Wisconsin/Band of Mohican Indians
	The Narragansett Indian Tribe
Non-Federally Recognized Tribe	Nanticoke Indian Association, Inc.
	Nanticoke Lenni-Lenape Tribal Nation
	Powhatan Renape Nation
	Ramapough Lenape Indian Nation
	Ramapough Mountain Indians
	Lenape Indian Tribe of Delaware
Local Government	Aberdeen Township
	Allenhurst Borough
	Amityville Historical Society
	Asbury Park
	Avon-by-the-Sea Borough
	Belmar Borough
	Borough of Brooklyn
	Borough of Manhattan
	Borough of Queens
	Borough of Staten Island
	Borough of The Bronx
	Bradley Beach Borough
	Brick Township
	Bronx County
	City of Bayonne
	City of Bayonne Planning Board
	City of Hoboken
	City of Hoboken Historic Preservation Commission
	City of Jersey City

Participants in the Section 106 Process	Invited Consulting Parties that Did Not Participate in Consultation
	Deal Borough
	Hudson County
	Incorporated Village of Lindenhurst
	Keyport Borough
	Kings County
	Loch Arbour Village
	Manasquan Borough
	Middlesex County
	Middletown Township
	Monmouth Beach Borough
	Monmouth County
	Neptune Township
	New York City
	New York City Department of Parks & Recreation
	New York State Council of Parks
	Old Bridge Township
	Queens County
	Richmond County
	Spring Lake Borough
	Town of Brookhaven
	Town of Oyster Bay
	Union Beach Borough
	Village of Brightwaters
	Village of Mastic Beach
	Village of Patchogue
Nongovernmental Organizations or Groups	Alliance for Coney Island
	American Irish Historical Society
	American Jewish Historical Society
	Asbury Park Historical Society
	Atlantic Highlands Historical Society
	Bayonne Community Museum, Inc.
	Bellport-Brookhaven Historical Society
	Belmar Historical Society
	Bradley Beach Historical Society
	Brick Township Historical Society
	Bronx County Historical Society
	Crossroads of the American Revolution in New Jersey
	East Islip Historical Society
	Friends of Asbury Park Environmental Shade Tree Commission
	Friends of Monmouth County Parks
	Friends of Sunset Park
	Greater Patchogue Historical Society
	Green-Wood Cemetery
	Hispanic Society of America
	Historic Districts Council
	Historic House Trust of New York City
	Historical Society for the Preservation of the Underground Railroad

Participants in the Section 106 Process	Invited Consulting Parties that Did Not Participate in Consultation
	Historical Society of East Rockaway and Lynbrook
	Historical Society of Islip Hamlet
	Historical Society of Ocean Grove
	Hoboken Historical Museum
	Hudson County Historical Society
	Hudson County Register
	Huntington Historical Society
	Italian Historical Society of America (Brooklyn)
	Jersey City Landmarks Conservancy
	Keyport Historical Society
	Long Beach Historical and Preservation Society
	Long Branch Historical Museum Association
	Long Island Maritime Museum
	Malverne Historical and Preservation Society
	Mastic Peninsula Historical Society
	Matawan Historical Society
	Middletown Township Historical Society
	Monmouth County Historical Society
	Nassau County Historical Society
	Nassau Historical Society
	National Maritime Historical Society
	New Jersey Future
	New Jersey Historical Society
	New Jersey Lighthouse Society
	New Jersey Maritime Museum
	New York Central Historical Society
	New-York Historical Society
	Ocean County Historical Society
	Oyster Bay Historical Society
	Preservation Alliance of Spring Lake
	Preservation League of New York
	Preservation New Jersey
	Queens County Historical Society
	Queens Historical Society
	Richmond County Historical Society
	Roosevelt Island Historical Society
	Sea Bright Historical Society
	Spring Lake Historical Society
	Squan Village Historical Society
	Staten Island Historical Society at Historic Richmond Town
	Suffolk County Historical Society
	The Archaeological Society of New Jersey
	The Sandy Hook Foundation
	Thomas Warne Museum/Madison-Old Bridge Township Historical Society
	Twin Lights Historical Society
	Village of Babylon Historical Society
	West Islip Historical Society

ATTACHMENT 3 – EMPIRE WIND TREATMENT PLAN FOR ANCIENT SUBMERGED LANDFORM FEATURES

Empire Offshore Wind: Empire Wind Project (EW 1 and EW 2)

DRAFT
Marine Archaeological Resources Treatment Plan

Prepared for:

Empire Offshore Wind LLC
600 Washington Blvd, Suite 800
Stamford, Connecticut 06901

Prepared by:

3117 Edgewater Dr.
Orlando, FL 32804

November 2022

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EXECUTIVE SUMMARY

This marine archaeological resources treatment plan (MARTP) provides background data, historic property information, and detailed steps that will be implemented to carry out the potential cultural resources mitigation actions identified by the Bureau of Ocean Energy Management (BOEM) for the Empire Offshore Wind Project: Empire Wind 1 (EW 1) and Empire Wind 2 (EW 2) (Project). The mitigation actions, if required, will be developed in consultation with the New York State Historic Preservation Office (NY SHPO) and other National Historic Preservation Act (NHPA) Section 106 review consulting parties as elements of the Final Environmental Impact Statement (FEIS) and issued in accordance with 40 CFR parts 1500-1508, 36 CFR §§ 800.8, 800.10. This MARTP outlines the mitigation measures, implementation steps, and timeline for actions.

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ACRONYMS AND ABBREVIATIONS

ACHP	Advisory Council on Historic Preservation
APE	Area of Potential Effects
ASLF	Ancient submerged landform feature
BOEM	Bureau of Ocean Energy Management
COP	Construction and Operations Plan
CRIS	Cultural Resources Information System
dGPS	Digital global positioning system
Empire	Empire Offshore Wind LLC
EW 1	Empire Wind 1
EW 2	Empire Wind 2
FEIS	Final environmental impact statement
FoAE	Finding of Adverse Effect (FoAE)
HRVEA	Historic resources visual effects assessment
HRG	High-resolution geophysical
km	Kilometer
MARTP	marine archaeological resources treatment plan
mi	Mile
MOA	Memorandum of Agreement
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
nm	Nautical mile
NPS	National Park Service
NRHP	National Register of Historic Places
NYSOPRHP	New York State Office of Parks, Recreation & Historic Preservation
OCS	outer continental shelf
PAPE	preliminary area of potential effects
Project	The offshore wind project for OCS A-0512 proposed by Empire Offshore Wind LLC consisting of Empire Wind 1 (EW 1) and Empire Wind 2 (EW 2).
Project Area	The area associated with the build out of the Lease Area, including the Lease Area, submarine export cable routes, and onshore Project facility locations, including the onshore export and interconnection cables, the onshore substations, and the Operations and Maintenance Base.
PSL	Public Service Law
QMA	Qualified Marine Archaeologist
ROD	Record of Decision
SHPO	State Historic Preservation Office
SOI	Secreatary of the Interior
Tetra Tech	Tetra Tech, Inc.
TARA	Terrestrial archaeological resource assessment
USBL	Ultra-short baseline
USCG	United States Coast Guard

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1 INTRODUCTION

1.1 Project Overview

BOEM's responsibilities for the regulation of renewable energy projects on the outer continental shelf (OCS) derives from the Outer Continental Shelf Lands Act (see 43 U.S.C. 1337) and the Energy Policy Act of 2005 (PL 109-58). BOEM's procedures for the issuance and administration of leases for renewable energy production on the OCS are codified within Title 30 CFR Part 585. BOEM's potential approval or approval with modifications and conditions of Empire's Construction and Operations Plan (COP) for the Project constitutes a federal undertaking subject to Section 106 of the National Historic Preservation Act (NHPA) (54 U.S.C. § 306108). The Project undertaking will comprise the following offshore components: up to 147 wind turbines connected by a network of interarray cables, up to two offshore substations, and up to five submarine export cables to bring power to shore. The closest proposed wind turbine is approximately 12.2 nm (14 mi, 22 km) from the coast of New York on the Atlantic OCS. Two cables will be located within the EW 1 Submarine ECR, and three within the EW 2 Submarine ECR.

BOEM (2020) defines the Area of Potential Effects (APE) of offshore wind projects as the following:

- 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; and
- Any temporary or permanent construction or staging areas, both onshore and offshore.

To support BOEM's efforts to identify historic properties within the APE, Empire Wind conducted a terrestrial archaeological resource assessment (TARA), marine archaeological resource assessment (MARA), and an analysis of visual effects to historic and architectural properties. The present document focuses on marine archaeological resources identified within the Preliminary APE for the MARA (**Figure 1.1.1**). The results of these investigations can be found in the Empire Wind COP Volume 2C, Appendices X, Y, and Z. Based on a review of these documents and consultations with NHPA Section 106 consulting parties, BOEM has determined that the undertaking will result in adverse effects to historic properties. Information about BOEM's assessment of adverse effects can be found in BOEM's Finding of Adverse Effect (FoAE) for the Undertaking.

In the FoAE, BOEM determined that the Project undertaking will adversely affect 13 ancient-submerged landform features (ASLFs). BOEM is consulting with the Advisory Council on Historic Preservation (ACHP), New York State Office of Parks, Recreation & Historic Preservation (NYSOPRHP), federally recognized Native American Tribes, and other NHPA Section 106 consulting parties to identify ways to avoid, minimize, or mitigate adverse effects to historic properties. BOEM has decided to codify the resolution of adverse effects through an NHPA Section 106 memorandum of agreement (MOA) pursuant to 36 CFR 800.8(c)(4)(i)(B). As defined in 36 CFR § 800.6 (c), a project specific MOA records the terms and conditions agreed upon to resolve adverse effects of the undertaking (i.e., the approval, approval with modification, or disapproval of the Empire Wind COP). This MARTP provides background data, historic property information, and detailed measures to carry out the mitigation actions. The measures agreed upon by BOEM, the ACHP, and NYSOPRHP to resolve adverse effects to historic properties will be recorded in the MOA among BOEM, the NY State Historic Preservation Office (SHPO), and the ACHP regarding the Empire Offshore Wind Project.

Pursuant to the terms and conditions of the MOA, Empire will implement applicant-proposed environmental protection measures to avoid potential impacts to marine archaeological resources and will implement an Unanticipated Discoveries Plan for Submerged Archaeological Resources (see Appendix H of the MARA (COP Volume 2C Appendix X) in the event of an unanticipated discovery). Mitigation Measures implemented under this MARTP will be conducted in accordance with all agreed upon terms and conditions in the MOA and with

applicable local, state, and federal regulations and permitting requirements. Responsibilities for specific compliance actions are described in further detail in Section 7.2, Roles and Responsibilities.

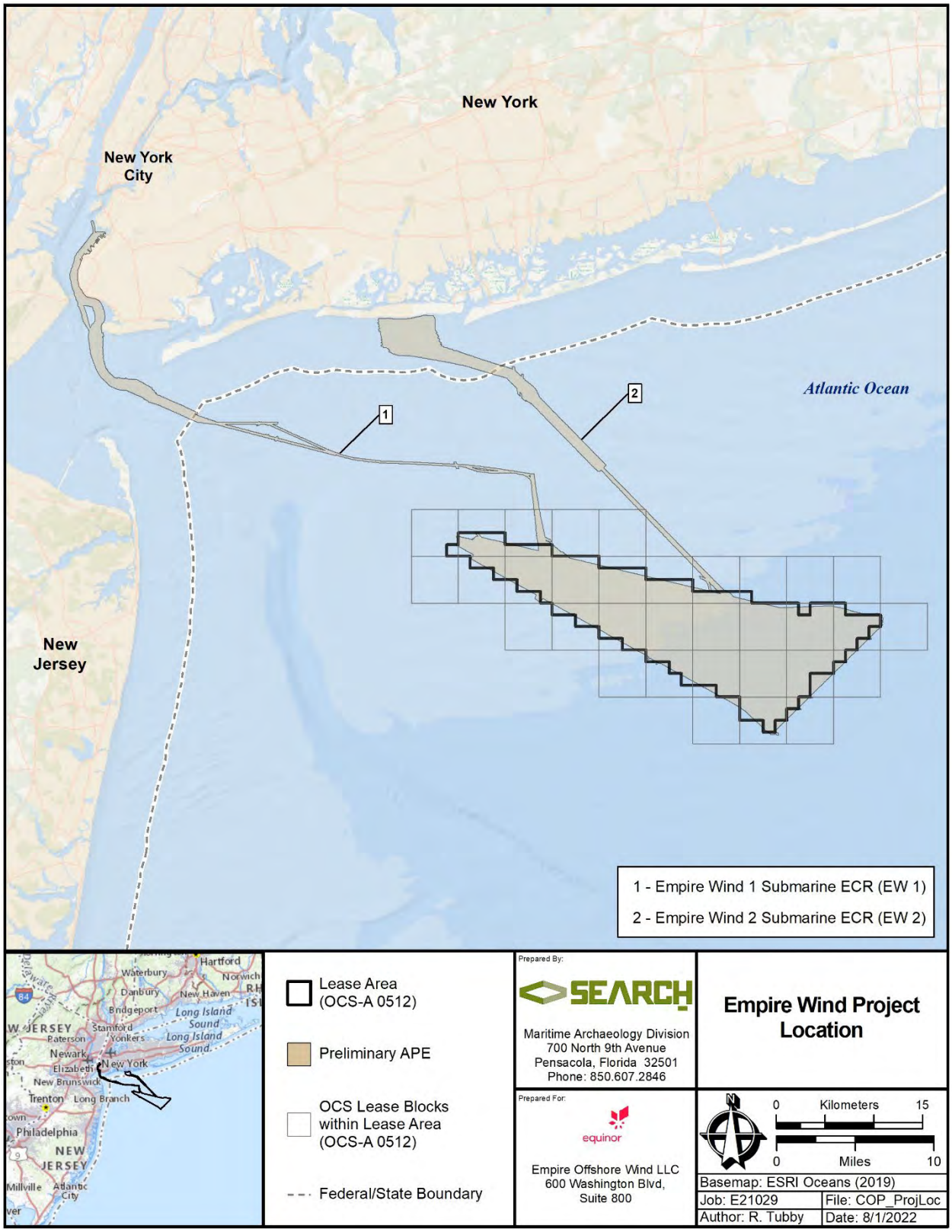

Figure 1.1.1. Empire Wind project location.

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2 REGULATORY FRAMEWORK

2.1 National Environmental Policy Act and the National Historic Preservation Act

This MARTP was developed based on coordination with BOEM and reflects consultations conducted by BOEM with multiple consulting parties, including the NY SHPO and Native American Tribes for whom identified historic properties may have traditional cultural and/or religious significance. The regulations at 36 CFR § 800.8 provide for use of the National Environmental Policy Act (NEPA) process to fulfill a federal agency's NHPA Section 106 review obligations in lieu of the procedures set forth in 36 CFR § 800.3 through 800.6. Under these provisions, issuance of a Record of Decision (ROD) and implementation of relevant conditions will resolve adverse effects to historic properties caused by the Undertaking. BOEM may also choose to develop an NHPA Section 106 (MOA) to resolve adverse effects to historic properties. As defined in 36 CFR § 800.6 (c), a project specific MOA will record the terms and conditions agreed upon to resolve adverse effects of the undertaking (i.e., the approval, approval with modification, or disapproval of the EW 1 and EW 2 COP). If BOEM chooses to approve the EW 1 and EW 2 COP or approve the COP with modifications, implementation of the NHPA Section 106 MOA will be in included in the ROD).

2.2 Participating NHPA Section 106 Consulting Parties

BOEM initiated consultation under Section 106 with invitations to potential consulting parties June 24, 2021], including the NY SHPO, NJ HPO and ACHP. BOEM invited the following federally recognized Tribes/Tribal Nations with historic and cultural ties to the project areas to participate in the Section 106 review as consulting parties:

- Delaware Tribe of Indians
- The Delaware Nation
- The Shinnecock Indian Nation

Wampanoag Tribe of Gay Head (Aquinnah)Empire Wind anticipates the above-listed parties and any subsequently identified parties will participate in the finalization of this MARTP through BOEM's Section 106 consultation process. After its initial invitation, BOEM hosted the following Section 106 consultation meetings with consulting parties on the following dates:

- NEPA Public Scoping Meetings on June 30, July 8, and July 13, 2021
- Section 106 Consulting Parties Meeting 1 – September 12, 2022
- Section 106 Consulting Parties Meeting 2 [date to be determined]

2.3 State Historic Preservation Laws/Regulations

Portions of the Project located within the State of New York are subject to the New York State Public Service Commission's review of the transmission facility located within the State of New York pursuant to Article VII of the New York Public Service Law (PSL) and the New York State Historic Preservation Act of 1980, Section 14.09 (New York's counterpart to the NHPA). The Submerged Lands Act (43 United States Code § 1301[c]) grants coastal states title to natural resources within their coastal submerged lands out to 2.6 nm (3.0 mi, 4.8 km). The Abandoned Shipwreck Act (43 United States Code § 2101) affirms the authority of state governments to claim and manage abandoned shipwrecks on state submerged lands. Section 233 of the State Education Law (Section 233, subsections 4 and 5, State Education Law L. 1947, c. 820; amended L. 1958, c121, eff. March 6,

1958) prohibits the disturbance of archaeological resources without prior approval from the New York State Museum, while the New York State Parks – Division for Historic Preservation is the agency that administers the program authorized by both the NHPA and New York State Historic Preservation Act of 1980.

2.4 Municipal Laws/Regulations, Preservation Easements & Restrictions (if applicable)

No applicable municipal laws or regulations, nor preservation easements or restrictions were identified relevant to the regulatory framework for the Project or development of the MARTP.

3 HISTORIC PROPERTY INFORMATION

3.1 Historic Properties

This MARTP addresses unavoidable impacts to 13 historic properties of the 52 potential submerged cultural resources identified within the Project's MARA Report (COP Volume 2C Appendix X), as identified below in **Table 3.1.1**. The 13 historic properties are ASLFs (**Figures 3.1.1** and **3.1.2**) identified during geophysical and geotechnical investigations within the Lease Area, EW 1 Submarine ECR, and EW 2 Submarine ECR.

Table 3.1 1. Historic Properties Included in the MARTP.

Target 31	EW 2 Submarine ECR	Ancient Submerged Landform features (ASLF)
Target 33	EW 1 Submarine ECR	ASLF
Target 35	EW 1 Submarine ECR	ASLF
Target 36	EW 1 Submarine ECR	ASLF
Target 39	Lease Area	ASLF
Target 41	Lease Area	ASLF
Target 42	Lease Area	ASLF
Target 45	Lease Area	ASLF
Target 47	Lease Area	ASLF
Target 48	Lease Area	ASLF
Target 49	Lease Area	ASLF
Target 51	EW 1 Submarine ECR	ASLF
Target 52	EW 1 Submarine ECR	ASLF

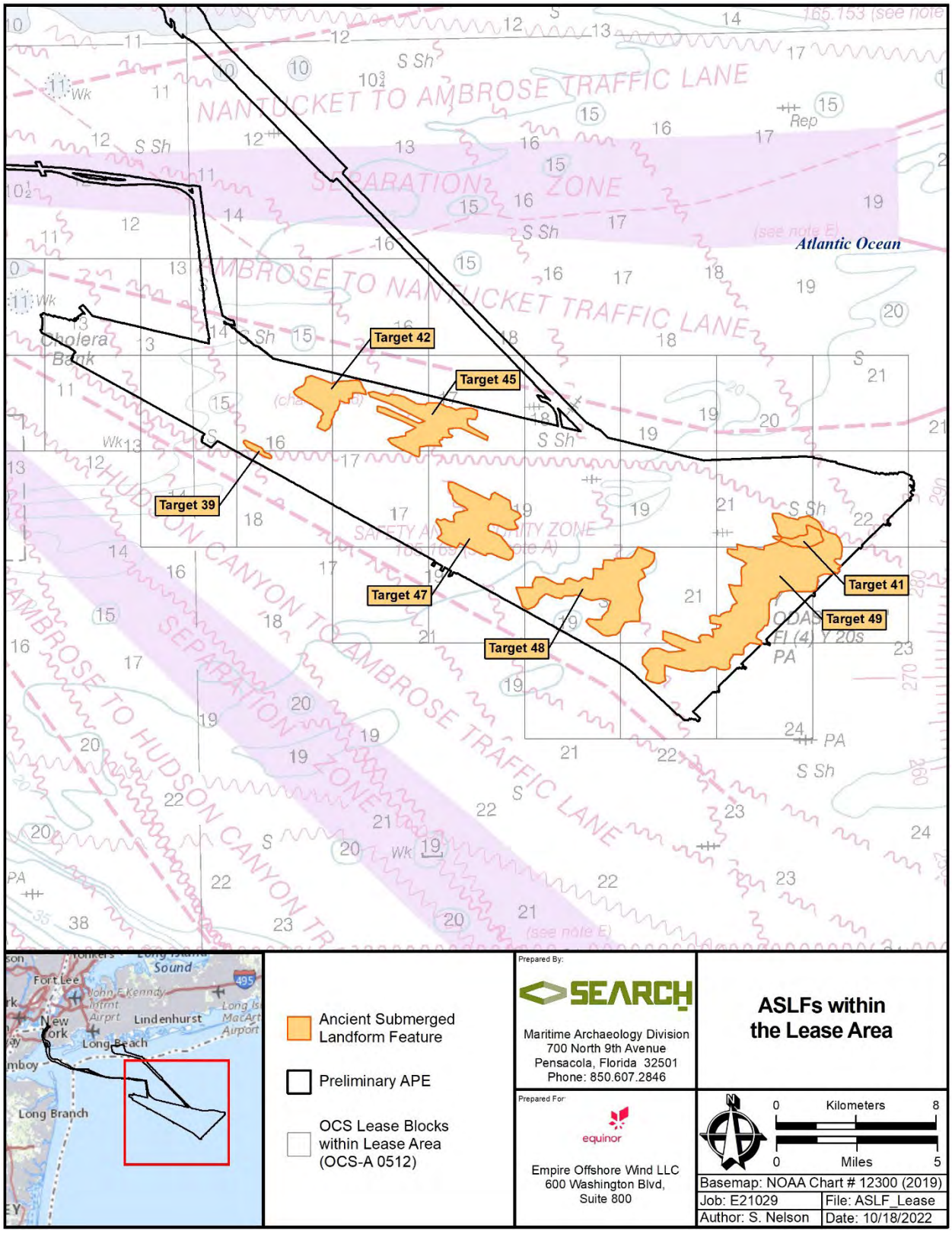

Figure 3.1.1. ASLFs within the Lease Area.

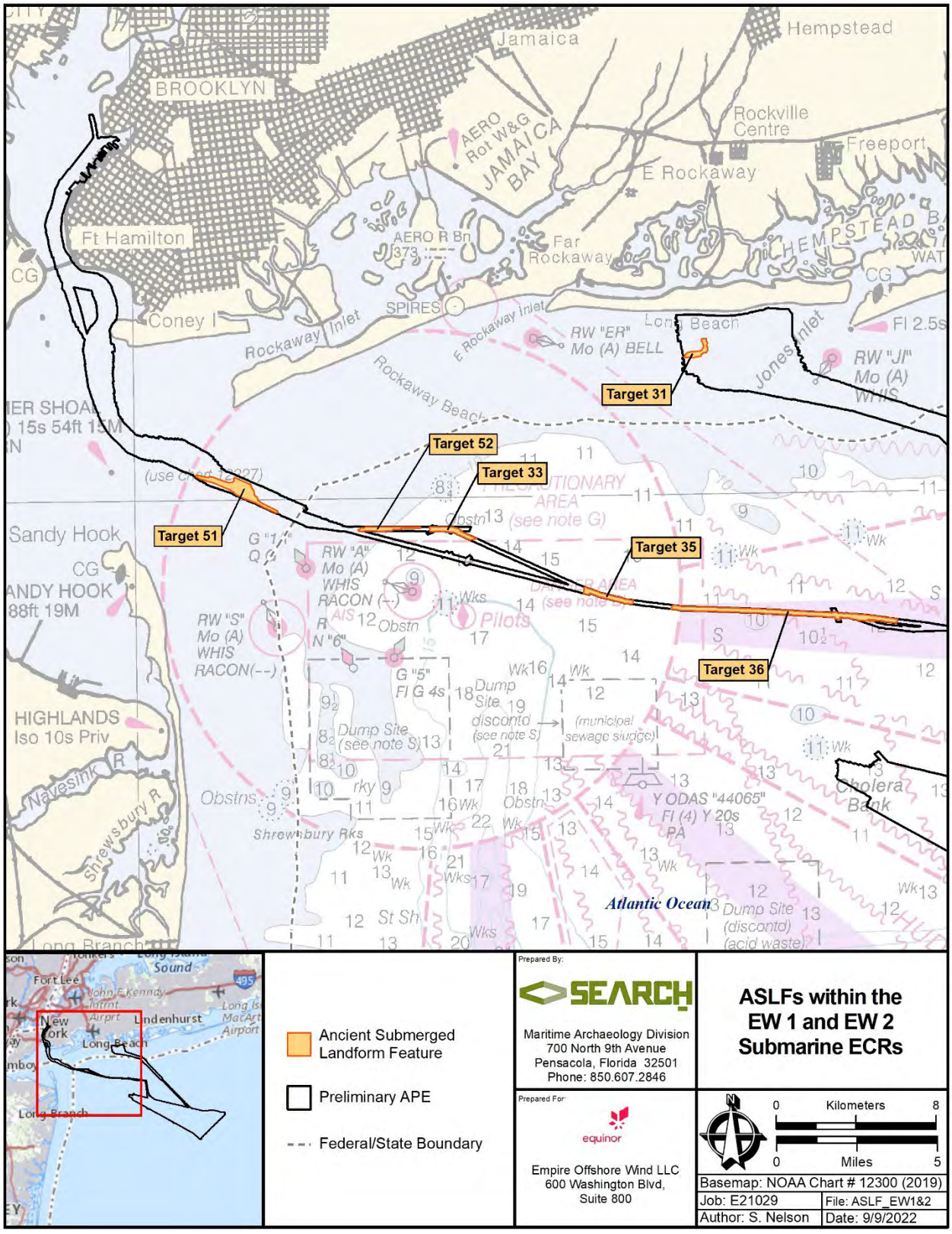

Figure 3.1.2. ASLFs within the EW 1 Submarine ECR and EW 2 Submarine ECR.

3.2 Assessment of Adverse Effects

3.2.1 Historic Context Historic Targets

New York's geographic location and system of waterways fostered the development of commercial maritime activities and established the city as one of the world's largest and busiest ports. The Lease Area is located roughly 22 nm (25 mi, 40 km) southeast of New York Harbor at its closest point, while EW 1 Submarine ECR will make landfall near Brooklyn and EW 2 Submarine ECR will make landfall near Long Beach. The maritime historical context of the region results in a potential for historic submerged cultural resources to exist. Ship building material is the most prominent factor when assessing the preservation potential of possible historic submerged cultural resources.

Early European exploration that may have crossed the Lease Area employed small, wooden-hull sailing vessels. Increased maritime activity in the region during the seventeenth and eighteenth centuries included larger ocean-going ships and coastal traders. The introduction of steam vessels in the region presents a new category of potential shipwreck in the nineteenth century. The use of iron and steel in hull construction soon followed steam technology in the nineteenth century. The twentieth-century workboat including, but not limited to, barges, freighters, and tankers, is another category of shipwreck that could be expected in the region. The modern recreational vessel, although not typically considered a submerged cultural resource, also could be a vessel type documented in the APE.

3.2.2 NRHP Criteria Historic Targets

The NRHP is:

> …the official list of the Nation's historic places worthy of preservation. Authorized by the National Historic Preservation Act of 1966, the National Park Service's National Register of Historic Places is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect America's historic and archeological resources… (National Park Service [NPS] 2018:1)

The list includes districts, sites, buildings, structures, and objects significant in American history, architecture, archaeology, engineering, and culture. Properties can be significant at the local, state, or national level.

An assessment should examine three concepts when evaluating a property's eligibility for listing in the NRHP: historic significance, historic context, and integrity. To have historic significance, a property must meet at least one of four significance criteria. As defined by the NPS (2002:2), the quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

A. that are associated with events or activities that have made a significant contribution to the broad patterns of our history; or
B. that are associated with the lives of persons significant in our past; or
C. that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
D. that have yielded, or may be likely to yield, information important in prehistory or history.

Historic context is defined as "information about historic trends and properties grouped by an important theme in the prehistory of a community, state, or the nation during a particular period of time" (NPS 1977:4). Historic context provides the link between the shipwreck and unique, representative, and/or pivotal historic trends.

The definition of integrity, as it relates to listing in the NRHP, is the ability of the property to convey its significance. Although subjective, integrity "must always be grounded in an understanding of the property's physical features and how they relate to its significance" (NPS 2002:44). The seven aspects of integrity include location, design, setting, materials, workmanship, feeling, and association. A property must retain several of these aspects of integrity to convey significance. In the case of an archaeological site, the relevant aspects to consider are location, setting, materials, and association (NPS 2018). NPS National Register Bulletin 15, How to Apply the National Register Criteria for Evaluation further clarifies the steps necessary to assess integrity (NPS 2002). These include:

- Define the essential physical features that must be present for a property to represent its significance;
- Determine whether the essential physical features are visible enough to convey their significance;
- Determine whether the property needs to be compared with similar properties; and,
- Determine, based on the significance and essential physical features, which aspects of integrity are particularly vital to the property being nominated and if they are present.

3.2.3 **Historic Significance and Historic Context**

In addition to the NRHP significance criteria, the NPS National Register Bulletin 20, Nominating Historic Vessels and Shipwrecks to the National Register of Historic Places, provides additional information to consider when assessing the NRHP eligibility of historic shipwrecks (Delgado 1992). Delgado (1992:3) states:

> …the significance of a historic vessel can only be determined through a systematic investigation of the vessel's qualities, associations, and characteristics. A typical investigation for a historic vessel nomination should include:
>
> 1. Identification of the specific type of vessel and documentation based on a physical inspection of the vessel and a documentation of her history.
> 2. Identification of the historic context(s) associated with the vessel based on a documentation of her history.
> 3. Determination that the characteristics of the vessel make her either the best, or a good representative of her type.
> 4. Evaluation of the significance of the vessel based on the National Register criteria.
> 5. Evaluation of the vessel's integrity and a listing of features that the vessel should retain to continue to possess integrity.
> 6. Evaluation of a vessel's special characteristics that might qualify her for National Register listing even though she might be less than 50 years old or some aspect of her present condition generally would not qualify her for listing.

The MARA identified 30 potential submerged cultural resources within the preliminary area of potential effects (PAPE) that could represent historic properties. Six of the identified targets were subject to additional Phase Ib remote operated vehicle (ROV) investigation The goal of the investigation was to identify the source(s) of the six targets and determine if a NRHP eligibility determination could be accomplished through ROV documentation only. Three of the six targets investigated during ROV operations were determined to be modern in origin. No avoidance is necessary for these targets. ROV investigation of Target 23 was deemed unsafe and was not undertaken due to the target's location in a heavily trafficked channel.

Two targets were recommended for collection of Phase II archaeological data through alternative investigative methods (e.g., scientific diver investigation). The Phase II scientific diver investigation was performed to inform

Project siting. Diver investigation determined one target (Target 12) to be modern debris, and one target (Target 17), to be potentially eligible for inclusion in the NRHP.

Current data suggests that Target 17 may be the remains of a historic shipwreck, associated with a historic shipwreck, or a component of the historic maritime cultural landscape of New York Harbor, and potentially eligible for listing in the NRHP under Criterion D for its potential to yield important information about history. Empire has designed an anchor handling plan to avoid impacts to Target 17 and its avoidance buffer (Figure 3.2.1).

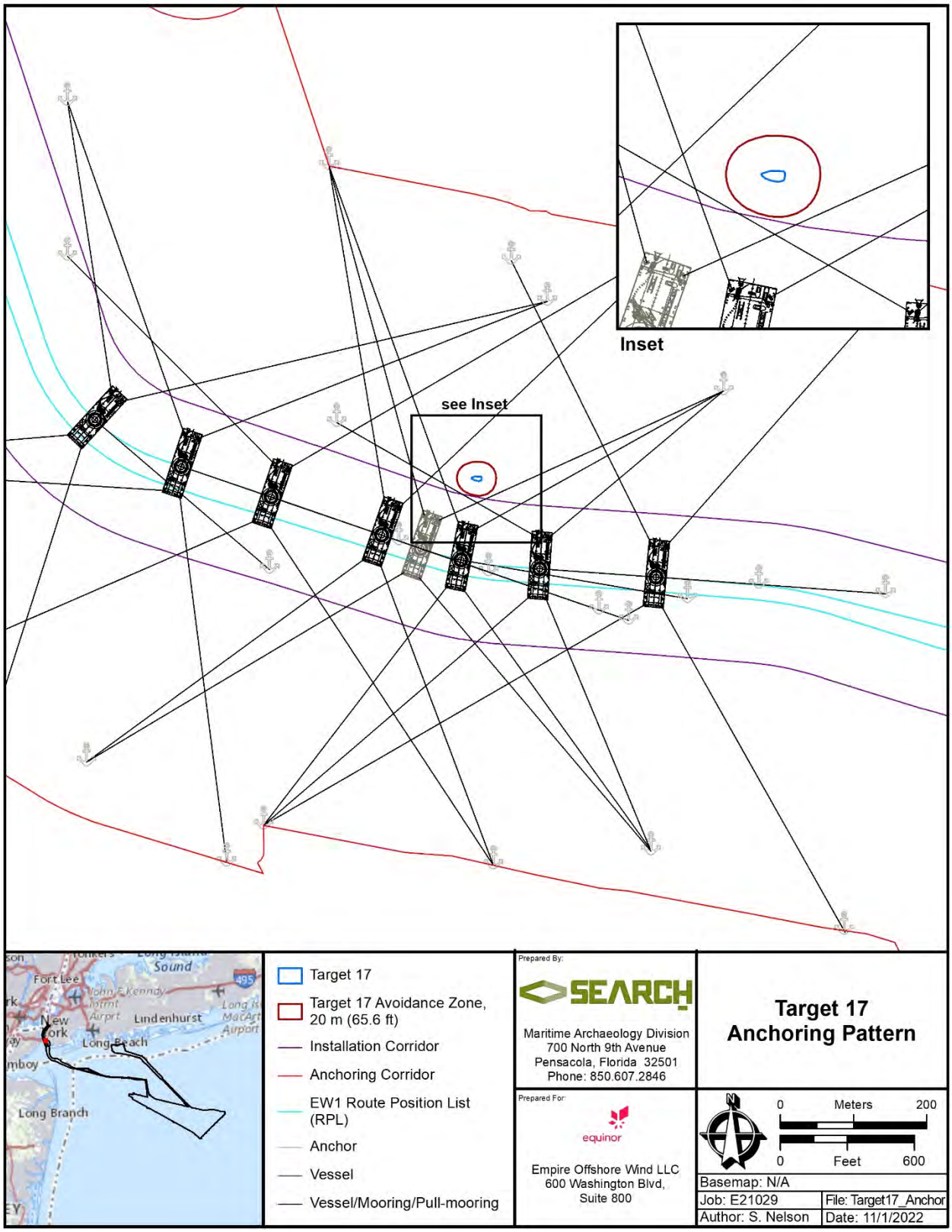

Figure 3.2.1. Proposed Anchoring Pattern near Target 17.

3.2.4 ASLF Contexts

Three major paleochannel complexes exist within the PAPE: the Holocene paleochannels, Pleistocene paleochannels, and the Paleo-Hudson River channel and drainage network. The Holocene and Pleistocene paleochannels represent those available for human occupation based on the current archaeological understood process of peopling of North America. The Paleo-Hudson fluvial complex at its youngest dates to approximately 60,000 cal BP and would not have been available for human occupation based on archaeological understanding of the human habitation of North America. Targets 31–52 represent discontinuous portions of the Holocene and Pleistocene paleochannel complexes that incised the OCS throughout the PAPE. The archaeological timeframes associated with these former subaerial living surfaces are the Paleoindian and Archaic Periods.

Although direct evidence of the former inhabitants does not exist within the current dataset, the paleoenvironmental reconstruction and correlation to similar, known terrestrial archaeological sites suggest the ASLFs are types of locations frequented by indigenous peoples in the region. Paleoindian and early Archaic peoples were highly mobile populations that relied on resource rich areas for survival, such as river valleys. Coastal adaptation during this time is not well-understood due to the nature of marine transgression and limited preservation of coastal sites. It is highly likely that the former coastline now drowned and buried on the OCS also was a locale frequented and utilized by the same indigenous populations.

The ASLFs discussed above represent preserved elements of a former subaerial surface, one that was likely home to the indigenous peoples of North America. These types of features are recognized as having traditional cultural significance to the consulting Native American Tribes, many of whom are descendants of the people that once traversed this landscape. Several of the Tribes maintain within their traditions that their people have always been present here. Their Tribal histories possess accounts of their ancestors existing and interacting with these former subaerial surfaces, a place that holds value and importance to their heritage and identity.

3.2.5 NRHP Criteria ASLFs

Based on prior BOEM consultations for the South Fork Wind Farm, Vineyard Wind 1 Wind Farm, and Ocean Wind 1 Offshore Wind Farm undertakings and Empire Wind's assessments, the identified ASLFs are potentially eligible for listing in the National Register of Historic Places under Criterion D for their potential to yield important information about the indigenous settlement of the northeastern United States and development of coastal subsistence adaptations. Each ASLF may also be eligible for listing under Criterion A for their association with and importance in maintaining the cultural identities of multiple Native American Tribes/Tribal Nations.

3.2.6 Adversely Affected ASLFs

Target 31: Target 31 represents a discontinuous portion of the Holocene paleochannels present within the landfall area of the EW 2 Submarine ECR. Covering approximately 95.6 ac (38.7 ha), the acoustic imagery of Target 31 depicts the basal portion of the channel with both banks partially intact. The associated floodplains appear to have been eroded in portions of Target 31. The reflector extends to a maximum depth of 31 ft (9.4 m) bsb and is 3,284 ft (1,001 m) at its widest point. Approximately 29% (27.7 ac [11.2 ha]) of Target 31 is present within the vertical ECR PAPE, and cannot be avoided via micro-siting.

Target 33: Target 33 represents a portion of the Holocene paleochannels present throughout the EW 1 Submarine ECR. Covering approximately 128.2 ac (51.9 ha), the acoustic imagery of Target 33 depicts a well-preserved floodplain with a relatively shallow thalweg. The reflector extends to a maximum depth of 30.8 ft

(9.4 m) bsb and is 6,884.5 ft (2,098.4 m) at its widest point. Approximately 26% (33.0 ac [13.4 ha]) of Target 33 is present within the vertical ECR PAPE, and cannot be avoided via micro-siting.

Target 35: Target 35 represents a series of discontinuous portions of the Holocene paleochannels present throughout the EW 1 Submarine ECR. Covering approximately 137.8 ac (55.8 ha), the acoustic imagery of Target 35 depicts two channel thalwegs with possible preservation of the interfluve. The right floodplain and margin appear better preserved than the left. The reflector extends to a max depth of 53.1 ft (16.2 m) bsb and is 8,088.9 ft (2,465.5 m) at its widest point. Approximately 59% (81.5 ac [33.0 ha]) of Target 35 is present within the vertical ECR PAPE, and cannot be avoided via micro-siting.

Target 36: Target 36 represents a series of discontinuous portions of the Holocene paleochannels present throughout the EW 1 Submarine ECR. Covering approximately 605.4 ac (245.0 ha), the acoustic imagery of Target 36 consists of multiple channel features. The extent of the feature includes five total channel thalwegs. This type of environment could be the remnant of a deltaic environment or represent an anastomosing or well-braided fluvial system. The reflector extends to a maximum depth of 69.6 ft (21.2 m) bsb and is 37,080.3 ft (11,302.1 m) at its widest point. Approximately 21% (128.5 ac [52.0 ha]) of Target 36 is present within the vertical ECR PAPE, and cannot be avoided via micro-siting.

Target 39: Target 39 represents a portion of the Holocene paleochannel complex present throughout the Lease Area. Target 39 appears to represent a discontinuous segment of Target 37; however, marine transgression likely eroded the majority of the surface once connecting these two areas. Covering approximately 100.0 ac (40.5 ha), the acoustic imagery of Target 39 depicts a slightly eroded yet preserved paleochannel flank. The reflector extends to a maximum depth of 30.8 ft (9.4 m) bsb and is 5,311.3 ft (1,618.7 m) at its widest point. Approximately 13% (13.0 ac [5.3 ha]) of Target 39 is present within the vertical PAPE of one WTG position and its associated work zone and therefore impacts cannot be avoided due to deep penetration (55m) of the WTG monopile.

Target 41: Target 41 represents a portion of the Holocene paleochannel complex present throughout the Lease Area. Covering approximately 307.3 ac (124.4 ha), the acoustic imagery of Target 40 depicts a paleochannel with a preserved flank (left) and possible bank feature (right). Target 41 exists almost entirely within Target 49, evidencing a similar fluvial pattern during the Holocene as was present during the Pleistocene. The reflector extends to a maximum depth of 39.0 ft (11.9 m) bsb and is 4,659 ft (1,420 m) at its widest point. Approximately 11% (33.1 ac [13.4 ha]) of Target 40 is present within the vertical PAPE of one WTG position and its associated work zone and therefore impacts cannot be avoided due to deep penetration (55m) of the WTG monopile.

Target 42: Target 42 represents a portion of the Pleistocene paleochannel complex present throughout the Lease Area. Covering approximately 1,061 ac (429.5 ha), the acoustic imagery of Target 42 depicts two relatively shallow channels with an interfluve and channel margins intact. The reflector extends to a maximum depth of 83.7 ft (25.5 m) bsb and is 8,229.3 ft (2,508.3 m) at its widest point. Approximately 18% (193.8 ac [78.4 ha]) of Target 42 is present within the vertical PAPE of three WTG positions, their associated work zones, and two other work zones and therefore impacts cannot be avoided due to deep penetration (55m) of the WTG monopiles.

Target 45: Target 45 represents a portion of the Pleistocene paleochannel complex present throughout the Lease Area. Vestiges of the truncated Holocene paleochannel complex are visible above the Pleistocene reflector. Covering approximately 1,864 ac (754.5 ha), the acoustic imagery of Target 45 depicts two main channels with preserved margins. The right bank and interfluve appear to be relatively intact. The reflector extends to a maximum depth of 164.4 ft (50.1 m) bsb and is 17,495 ft (5,333 m) at its widest point. Approximately 13% (233.2 ac [94.4 ha]) of Target 45 is present within the vertical PAPE of three WTG

locations, their work zones, and five other work zones and therefore impacts cannot be avoided due to deep penetration (55m) of the WTG monopiles.

Target 47: Target 47 represents a portion of the Pleistocene channel complex present throughout the Lease Area. Covering approximately 2,217 ac (897.1 ha), the acoustic imagery of Target 47 depicts a meandering channel evidencing a migratory channel. The banks appear relatively intact, and there is noted terracing within the target. The reflector extends to a maximum depth of 133.9 ft (40.8 m) bsb and is 13,823 ft (4,213 m) at its widest point. Approximately 15% (327.3 ac [132.5 ha]) of Target 47 is present within the vertical PAPE of four WTG locations, their work zones, and three other work zones and therefore impacts cannot be avoided due to deep penetration (55m) of the WTG monopiles.

Target 48: Target 48 represents a portion of the Pleistocene paleochannel complex present throughout the Lease Area. Covering approximately 2,857 ac (1,156 ha), the acoustic imagery of Target 48 depicts a well-defined channel with a possible tributary. The left margin appears more intact that the right, and the interfluve appears to have in part survived marine transgression. The reflector extends to a maximum depth of 145.0 ft (44.2 m) bsb and is 13,399 ft (4,084 m) at its widest point. Approximately 22% (635.4 ac [257.1 ha]) of Target 48 is present within vertical PAPE of seven WTG locations, their work zones, and four other work zones and therefore impacts cannot be avoided due to deep penetration (55m) of the WTG monopiles.

Target 49: Target 49 represents a portion of the Pleistocene paleochannel complex present throughout the Lease Area. Covering approximately 6,705 ac (2,714 ha), the acoustic imagery of Target 49 depicts an overbank and floodplain and minor terracing. The reflector extends to a maximum depth of 106.0 ft (32.3 m) bsb and is 15,566.88 ft (4,744.8 m) at its widest point. Approximately 9% (611.5 ac [247.5 ha]) of Target 49 is present within the vertical PAPE of six WTG locations, their work zones, and 14 other work zones and therefore impacts cannot be avoided due to deep penetration (55m) of the WTG monopiles.

Target 51: Target 51 represents a portion of the Holocene paleochannels present throughout the EW 1 Submarine ECR. Covering approximately 372 ac (151 ha), the acoustic imagery of Target 51 depicts a preserved floodplain with thalweg and possible channel migration. The reflector extends to a maximum depth of 52.2 ft (15.9 m) bsb and is 14,686.0 ft (4,476.3 m) at its widest point. Approximately 16% (59.7 ac [24.2 ha]) of Target 51 is present within the vertical ECR PAPE; based on the cable burial risk assessment (CBRA), impacts cannot be avoided.

Target 52: Target 52 represents a portion of the Holocene paleochannels present throughout the EW 1 Submarine ECR. Covering approximately 117.5 ac (47.6 ha), the acoustic imagery of Target 52 depicts a well-preserved floodplain with a relatively shallow thalweg. The reflector extends to a maximum depth of 65.9 ft (20.1 m) bsb and is 10,009.2 ft (3,050.8 m) at its widest point. Approximately 39% (45.7 ac [18.5 ha]) of Target 52 is present within the vertical ECR PAPE, and cannot be avoided via micro-siting

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4 MITIGATION MEASURES FOR HISTORIC TARGETS

This section details the proposed mitigation measures to resolve adverse effects to historic properties stipulated in the MOA, and describes the purpose and intended outcome, scope of work, methodology, standards, deliverables, and funds and accounting for each measure. The content of this section was developed on behalf of Empire Wind by individuals who met Secretary of the Interior (SOI) Qualifications Standards for Archeology and/or History (62 FR 33708) and is consistent with fulfilling the mitigation measures such that they fully address the nature, scope, size, and magnitude of adverse effects to historic targets. This framework should be adapted for application to specific resources. The steps outlined below are based on the current Project status and Project design. Alterations to Project infrastructure, installation methodology, or workspace requirements have the potential to eliminate particular methods or mitigation options proposed herein or require new procedures to adequately approach the mitigation of historic properties. Implementation of the mitigation measures described in the following sections will be led by a Qualified Marine Archaeologist (QMA) pursuant to 30 CFR 585 and who meets SOI Qualifications Standards for Archeology and Historic Preservation (48 FR 44738-44739).

4.1 Purpose and Intended Outcomes

This mitigation measure will consist of additional investigation specifically tailored to each target. The investigation may include additional archival/background research, refinement HRG survey, and/or scientific diver/remotely operated vehicle verification to determine the source(s) of the target as well as associated reporting and potentially public outreach components. Acquired data will be used to assess each target's integrity, significance, and eligibility for listing in the NRHP as a historic property. A single Technical Report on the analyses and interpretations will be developed. The Technical Report will be geared primarily toward technical, BOEM and agency audiences. Consultation with BOEM and appropriate parties with a nexus to the project may result in the development of a public outreach component.

4.2 Methodology

Empire Wind anticipates the anchors and/or ropes will not extend into the recommended avoidance buffer for Target 17, but would avoid both the actual target and its buffer. The below list provides a methodological progression of further archaeological investigation into each target, if warranted.

1. If avoidance of the recommended buffer is not feasible as a result of micrositing challenges, engineering design development, or the route selection process, then Phase II NRHP evaluation may include:
    a. Significance and integrity evaluation of the target source accomplished with scientific diver investigation, which may include limited excavation.
    b. Archival research.
2. Revisit avoidance recommendation based on Phase II results.
3. Consultation with BOEM and other parties to determine significance (NRHP eligibility).
4. If NRHP-eligible, consultations to develop a data recovery research design and/or alternative mitigation.
5. Phase III data recovery accomplished through scientific diver excavation. Level of effort dependent upon consultation but could include:
    a. Limited excavation and data recovery of select sections of the archaeological site.
    b. Recovery and conservation of select diagnostic artifacts for potential use in exhibit or other public outreach program. This would be based on opportunity determined during excavation and mapping (in other words, if there are no worthy artifacts uncovered, then none would be collected).
    c. Alternative mitigation to offset full data recovery (offsite). Examples include a robust archival research project or HRG survey designed to locate a certain vessel loss.

6. Consultation with appropriate parties with a nexus to the project to develop a public outreach component (e.g., digital/media products, education materials, non-technical report, etc.).
7. Technical reports for peer review and dissemination of data at professional conferences/publications.

4.2.1 Scientific Diver

A scientific diver investigation may occur to assess NRHP eligibility. Scientific diving investigation will be directed by a QMA and consist of Phase II NRHP eligibility assessment, and if warranted, a Phase III data recovery. A sufficient portion of the archaeological site would be excavated to collect the following data needed to make the NRHP eligibility assessment (additional excavation may be needed if archaeological investigation proceeds to Phase III data recovery):

- Horizontal and vertical dimensions;
- Composition;
- Integrity;
- Archaeological research potential;
- Age, if possible;
- Identity, if possible;
- Cultural affiliation, if possible;
- NRHP eligibility, if possible; and
- Photographs, if possible.

During a Phase II investigation, temporary recovery of artifacts will only occur if the QMA determines that topside inspection would assist with identifying the target source(s) and/or assist with the NRHP eligibility assessment. Artifacts will be kept wet during topside inspection and be returned to the precise location of recovery immediately following analysis. Topside photography of artifacts will include a scale and descriptive site information. Prior to a Phase III data recovery, consultation will occur to discuss the appropriate level of effort based on current design plans and will include a discussion on artifact recovery. If artifact collection is a component of mitigation, then a conservation and curation plan will be developed before recovery.

4.2.2 Reporting

The results of survey activities will be incorporated into a technical report, in accordance with BOEM's *Guidelines for Providing Archaeological and Historic Property Information Pursuant to 30 CFR Part 585* (2020). Data will be processed and interpreted by the QMA. The level of analysis and reporting will be sufficient to support BOEM and the State Historic Preservation Office with the final consultation requirements under Section 106 of the National Historic Preservation Act.

Upon completion of the reporting, Empire Wind will prepare a National Register Registration Form (NPS 10-900), which is used to nominate individual properties and districts. The form(s) will be completed using the information collected during the archival research, HRG survey, ROV, and/or scientific diver investigations. Under this proposal, a National Register Registration Form (NPS 10-900) will be completed for each unavoidable historic target.

Empire Wind will draft the individual National Register Registration Form (NPS 10-900) for the relevant target(s) in consultation with BOEM and other parties with a nexus to the project. Empire Wind will work with BOEM to develop draft NPS 10-900 forms for each historic target. Empire Wind will then submit draft forms to BOEM for review and comment. Based on the feedback and comments from BOEM, Empire Wind will

finalize the nomination forms and BOEM will submit the forms to the NPS in Washington, D.C., for final review and listing by the Keeper of the NRHP.

4.3 Standards

The historic target research effort will be conducted in accordance with BOEM's *Guidelines for Providing Archaeological and Historic Property Information Pursuant to 30 CFR Part 585* (2020). The qualified professional archaeologists leading the research will meet the SOI professional qualification standards for archeology (62 FR 33708) and BOEM's standards for Qualified Marine Archaeologists.

4.4 Documentation

The following documentation is to be provided for review by Participating Parties:

- Draft Technical Report;
- Final Technical Report;
- Individual National Register Registration Form (NPS 10-900) (if warranted), and
- Draft Public or Professional Presentations.

4.5 Mitigation Measure Funds and Accounting

Empire Wind will be responsible for funding and implementation of this mitigation measure.

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5 MITIGATION MEASURES FOR ASLF TARGETS

This section details the proposed mitigation measures to resolve adverse effects to historic properties stipulated in the MOA, and describes the purpose and intended outcome, scope of work, methodology, standards, deliverables, and funds and accounting for each measure. The content of this section was developed on behalf of Empire Wind by individuals who met SOI Qualifications Standards for Archeology and/or History (62 FR 33708) and is consistent with fulfilling the mitigation measures such that they fully address the nature, scope, size, and magnitude of adverse effects to historic targets. This framework should be adapted for application to specific resources. The steps outlined below are based on the current Project status and Project design. Alterations to Project infrastructure, installation methodology, or workspace requirements have the potential to eliminate particular methods mitigation options proposed herein or require new procedures to adequately approach the mitigation of historic properties. Implementation of the mitigation measures described in the following sections will be led by a QMA pursuant to 30 CFR 585 and who meets SOI Qualifications Standards for Archeology and Historic Preservation (48 FR 44738-44739).

5.1 Preconstruction Geoarchaeology

5.1.1 Purpose and Intended Outcomes

This mitigation measure will consist of geotechnical sampling prior to Project construction within the affected portions of each ASLF that was not previously investigated during the 2020 geoarchaeological coring campaign. Geoarchaeological core locations will be selected in consultation with Native American Tribes/Tribal Nations, BOEM, and the NY SHPO, and will be analyzed in collaboration with the Tribes/Tribal Nations to provide a more detailed understanding of ancient, former terrestrial landscapes within the Empire Wind Lease Area, EW 1 Submarine ECR, and EW 2 Submarine ECR and how such settings may have been used by Late Pleistocene-Early Holocene indigenous peoples. Data acquired from this effort is expected to refine the age estimates for each stable landform, the timing and character of ecological transitions evidenced in the MARA report and provide an additional opportunity to recover evidence of ancient indigenous use of each ASLF.

This measure will provide for a more detailed analysis of the stratigraphy, chronology, and evolving ecological conditions at each ancient landform. Two separate reports on the analyses and interpretations will be developed. The first will be focused on content of specific interest to the consulting tribes, including a broad approach to integrating available data collected from other recent archaeological research and surveys on the Atlantic OCS. The specific content and formatting of this report will be refined in consultation with the tribes to align the work product with intended intra- and inter-tribal audiences. The second report will be geared primarily toward technical, Tribal/State Historic Preservation Officer and agency audiences.

5.2 Methodology

Empire Wind will conduct the Preconstruction Geoarchaeology in consultation with the Native American Tribes/Tribal Nations, BOEM, and the NY SHPO. Although BOEM and the NY SHPO will be consulted, the research, analyses, and interpretations are intended to be a collaborative effort between Empire Wind and the consulting Tribes/Tribal Nations, who will be invited by Empire Wind to a series of working sessions to:

- Review existing data;
- Develop specific research questions addressing the tribes' interests in the ASLF;
- Select up to two candidate coring locations per unavoidable ASLF;
- Split, document, and sample recovered geotechnical samples in the laboratory;
- Review analytic results and preliminary interpretations; and

- Review draft reporting.

Prior to beginning the geotechnical campaign, Empire Wind will invite representatives from federally recognized Tribes/Tribal Nations to be present on the survey vessel to participate in and observe the geotechnical sampling activities. If Tribes/Tribal Nations decide to have representatives on the vessel, Empire Wind will coordinate with the Tribe/Tribal Nations to ensure Tribal representatives have all of the necessary health and safety training/certification/permissions to be present on the vessel during the sampling campaign. Geotechnical testing will occur within the affected sections of each ASLF and will extend to a maximum depth unique to each feature based on the reflector's burial depth. The cores will be cut on the survey vessel into approximately 1-meter-long sections and sealed to minimize the risk of environmental contamination. The core segments will be logged on the survey vessel and a chain of custody will be maintained to ensure all samples are accounted for and that all samples are transferred to the laboratory for geoarchaeological analyses. Once the core segments are transferred to the onshore laboratory, Empire Wind will invite Tribal representatives to observe/monitor the splitting, documentation, and subsampling of each core.

Each core segment will be split longitudinally into working and archival halves. Subsamples collected from working halves for specific third-party analyses will be packaged in a manner appropriate to the specific analysis for which they are intended. Archival halves will be sealed and stored horizontally on shelves or racks in a climate-controlled facility for at least one year following completion of laboratory analyses. Empire Wind will prioritize reasonable access to archival core segments by consulting parties and researchers when selecting the storage facility. All samples collected from the working halves will be submitted to third party laboratories within approximately 6 months of core transfer to the Qualified Marine Archaeologist facilities.

If requested by Tribes/Tribal Nations, Empire Wind will prepare a presentation of the preliminary results and interpretations for discussion with the Tribes/Tribal Nations (see work session schedule above). Empire Wind will consider the Tribes'/Tribal Nations' comments and suggestions when preparing the draft reports and will seek to resolve any concerns among the parties through supplemental consultations prior to preparing the draft reports. Empire Wind will submit the draft reports to the participating parties for review and comment. Empire Wind will consider all comments received when developing the final reports. Final digital copies of the completed reports will be provided to all participating parties. Hard copies of the final reports will be submitted to the State Historic Preservation Officers, Tribes/Tribal Nations governments or other parties upon request.

Following the one-year retention period, Empire Wind will offer transfer of the archival core segments to the Consulting Tribes, SHPOs and related state agencies, and regional research institutions with an interest in and capacity to conduct further analyses. Empire Wind currently anticipates research institutions with potential interests/capacities may include Columbia University, Princeton University, Rutgers University, New Jersey Institute of Technology, and the University of Rhode Island. Empire Wind will notify the Consulting Parties of its intent to transfer archival core segments to any party at least 45 days prior to initiating such transfer and will consider any comments provided by Consulting Parties before proceeding. If no external parties agree to accept the archival core segments, Empire Wind will water-screen the retained segments to identify and collect potential physical evidence of ancient Native American activity at the ASLFs. In such circumstances, Empire Wind will prepare a technical memorandum summarizing the results of the archival core segment processing and analyses and submit that memorandum to the Consulting Parties.

Upon completion of the geoarchaeological analysis and reporting, Empire Wind will prepare one NRHP Multiple Property Documentation Form (NPS 10-900-b) for the relevant targets. As a result of previous and ongoing consultations with federally recognized Tribes/Tribal Nations, BOEM has determined that ASLFs are eligible for the NRHP as Traditional Cultural Properties. A traditional cultural property is defined generally as

a property eligible for inclusion in the NRHP 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. Federally recognized Tribes/Tribal Nations have repeatedly stated to BOEM that ASLFs are significant to their members as the lands formerly occupied by their ancestors, likely containing burials and human remains, and as such are an important part of Tribal history and cultural identity. The form will be completed using the information collected during the preconstruction geoarchaeological investigations, as well as information collected in previous geophysical and geotechnical investigations, and will be drafted in consultation with participating Native American Tribes/Tribal Nations.

The Multiple Property Documentation Form (NPS 10-900-b) is used to nominate groups of related significant properties that share themes, trends, and patterns of history. The form serves as the basis for evaluating the NRHP eligibility of related properties and it may be used to nominate and register thematically related historic properties simultaneously or establish the registration requirements for properties that may be nominated in the future. Under this proposal, a National Register Registration Form (NPS 10-900) will be completed for each of the 13 identified unavoidable ASLFs along with a single Multiple Property Documentation Form that incorporates all unavoidable ASLFs. The Multiple Property Documentation Form will streamline the NRHP nomination process for all unavoidable ASLFs by allowing information that is common to all ASLFs (NRHP evaluation criteria, historic context description, statement of significance, etc.) to be recorded on the Multiple Property Documentation Form while the unique characteristics of each ASLF (location, integrity, etc.) are completed for each individual ASLF.

Empire Wind will draft the Multiple Property Documentation Form (NPS 10-900-b) and individual National Register Registration Form (NPS 10-900) for the relevant targets in consultation with participating Native American Tribes/Tribal Nations and BOEM. Empire Wind will work with the Tribes/Tribal Nations to develop draft NPS 10-900 forms for each ASLF and the NPS 10-900-b form. Empire Wind will then submit draft forms to the Tribes/Tribal Nations and BOEM for review and comment. Based on the feedback and comments from BOEM and the Tribes/Tribal Nations, Empire Wind will finalize the nomination forms and BOEM will submit the forms to the National Park Service in Washington, D.C., for final review and listing by the Keeper of the NRHP.

5.3 Standards

The Preconstruction Geoarchaeology effort will be conducted in accordance with BOEM's *Guidelines for Providing Archaeological and Historic Property Information Pursuant to 30 CFR Part 585* (2020). The qualified professional archaeologists leading the research will meet the SOI professional qualification standards for archeology (62 FR 33708) and BOEM's standards for Qualified Marine Archaeologists.

5.4 Documentation

The following documentation is to be provided for review by Participating Parties:

- Draft Tribal Audience Report;
- Draft Technical Report;
- Final Tribal Audience Report;
- Final Technical Report; and
- Draft Public or Professional Presentations.

5.5 Mitigation Measure Funds and Accounting

Empire Wind will be responsible for funding and implementation of this mitigation measure.

5.6 Open-Source GIS and Story Maps

5.6.1 Purpose and Intended Outcome

This mitigation measure will consist of the compilation and transfer of relevant geophysical, geotechnical, and geoarchaeological datasets pertaining to the ASLFs to a non-proprietary GIS system for use by Native American Tribes/Tribal Nations. The datasets will include sub-bottom (seismic) data used to characterize the seabed and ASLFs, the location of all geotechnical/geoarchaeological samples collected, and the vertical and horizontal extents of the affected features or sub-features within each ASLF. The GIS will be, to the extent feasible and practicable, compatible with GIS datasets compiled for other OCS projects to assist in the tribes' on-going research and stewardship efforts. Story Maps or equivalent digital media presentations will be prepared to integrate and present the complex technical data compiled during the MARA and mitigation investigations in a manner best suited for inter- and intra-tribal audiences. Story Map content would be developed in close consultation and collaboration with the consulting Native American Tribes/Tribal Nations.

Incorporation of Empire Wind datasets into a broader GIS framework will allow the Tribes/Tribal Nations to better understand and protect preserved elements of the ASLFs of traditional cultural significance. The intent of this measure is to enhance the Tribes/Tribal Nations understanding of existing conditions for a range of ASLFs located in the northeastern Atlantic OCS. This knowledge would allow for more effective Government to Government consultations regarding similar features that may be affected by future federal undertakings. The value of the GIS will increase as additional datasets are acquired and incorporated. Access to the GIS will support each Tribes' capacity to pursue their own research or intra-tribal educational programs related to the OCS and traditional cultural uses of the now-submerged landscapes of their ancestors.

The combined MARA and Preconstruction Geoarchaeology investigations will provide an important perspective on the preservation of submerged Traditional Cultural Properties within formerly glaciated sections of the OCS and within the footprint of former glacial lakes. Integrated GIS that can accommodate datasets collected from other OCS development projects and surveys would allow for comparisons to areas south of the maximum glacial limits on the OCS to provide a more comprehensive view of the ancient landscapes within the region. Tribal representatives working with Empire Wind on implementation of this measure will receive reasonable compensation for their effort. Story Maps created within the GIS will provide a flexible approach to incorporating media from a variety of sources, including geospatial data, interviews with traditional knowledge-holders, photographs, audio recordings, and archival cartography for a compelling interpretive experience. Story Maps can be tailored for specific tribal audiences and uses and would be developed in consultation with the consulting tribes.

5.6.2 Scope of Work

- The scope of work will consist of the following:
- Consultation with the Tribes/Tribal Nations to determine the appropriate open-source GIS platform;
- Review of candidate datasets and attributes for inclusion in the GIS;
- Data integration;
- Development of custom reports or queries to assist in future research or tribal maintenance of the GIS;
- Work sessions with Tribes/Tribal Nations to develop Story Map content;

- Training session with Tribes/Tribal Nations to review GIS functionality;
- Review of draft Story Maps with Tribes/Tribal Nations;
- Delivery of GIS to Tribes/Tribal Nations; and
- Delivery of final Story Maps.

5.6.3 Methodology

Empire Wind will develop the GIS in consultation with the Participating Parties. At least one work session will be scheduled to refine specific functionality of interest to the Tribes/Tribal Nations. That session will be conducted after the preliminary data analyses for the Preconstruction Geoarchaeology effort has been completed. This will allow for a more focused walk-through of the data and options for organizing and integrating different datasets. Empire Wind will request from the Tribes/Tribal Nations details on any existing open-source GIS systems currently in use by each Tribe/Tribal Nation to minimize any issues with data integration or interoperability.

Once the work session has been conducted, Empire Wind will proceed with development of the GIS, considering the Tribes'/Tribal Nations' comments and suggestions. The draft GIS system will be shared with the Tribes/Tribal Nations in a training session that presents the functions of the GIS and familiarizes the Tribal representatives with the interfaces, data organization, and any custom features developed to enhance useability. Empire Wind will consider any feedback from the Tribes/Tribal Nations on the draft GIS before proceeding with finalizing the system design and implementation. Empire Wind will provide the GIS to the Tribes/Tribal Nations by physical storage media or as a secure digital file transfer, as appropriate to each Tribes/Tribal Nations IT infrastructure and preference. Empire Wind does not intend to be responsible for the upkeep of the GIS database.

Story Map content will be developed with the consulting Tribes/Tribal Nations through one or more scheduled work sessions. Potential options for content intended for youth audiences, tribal governments, and/or general tribal membership will be discussed to refine the conceptual framework and develop draft Story Maps for review by the Tribes/Tribal Nations. Empire Wind will consider all comments and feedback provided by the Tribes when preparing the final Story Maps.

5.6.4 Standards

The GIS developed under this measure will be free to use and free to modify by the Tribes/Tribal Nations. To the extent feasible, all data will be provided in formats that allow for interoperability with other GIS platforms that the tribes may use. All datasets incorporated in the GIS will comply with Federal Geographic Data Committee data and metadata standards.

5.6.5 Documentation

Empire Wind will provide draft descriptions and documentation of the GIS for review by the Participating Parties and will provide a description of the draft Story Maps to the consulting Tribes/Tribal Nations following the initial working sessions.

The following documentation is to be provided for review by Participating Parties:

- Draft Description of the GIS with appropriate schema, data organization, and custom reports/queries;
- Draft Story Map descriptions with details on content, formatting, and intended audiences; and
- Final Technical Description of the GIS with schema, data organization, and custom reports/queries.

5.6.6 Mitigation Measure Funds and Accounting

Empire Wind will be responsible for funding and implementation of this mitigation measure.

6 TREATMENT PLAN IMPLEMENTATION

6.1 Schedule

The timeline for implementation of the mitigation measures will be determined in consultation with consulting parties based on the agreed upon mitigation measures described in the final version of this MARTP. This MARTP will be reviewed by and further developed in consultation with consulting parties as part of BOEM's NHPA Section 106 consultation and NEPA review schedule for the Empire Wind Project, which is currently anticipated to include the following:

- September 12, 2022: First meeting of consulting parties
- [Date to be determined]: Second meeting of consulting parties
- November 18, 2022: Publication of the Draft Environmental Impact Statement
- [Date to be determined]: [Third meeting of consulting parties]
- September 8, 2023: Publication of the Final Environmental Impact Statement
- October 23, 2023: Record of Decision

The final version of this MARTP included in the FEIS will include a timeline for implementation of the final/agreed upon mitigation measures described herein. It is anticipated that the mitigation measure identified in Sections 4.0 and 5.0 will commence within 2 years of ROD issuance or execution of a project specific MOA unless otherwise agreed by the consulting parties and accepted by BOEM. All infield documentation, investigation, and/or sampling activities detailed in Section 4.0 and 5.0 will be completed prior to Empire Wind conducting any activities that could impact the marine archaeological historic properties in question. Seafloor disturbing activities can, however, commence once all infield data collection activities have been completed to the satisfaction of BOEM, the ACHP, and consulting parties and prior to the completion of associated laboratory analysis, data review, reporting, and deliverable development. Empire Wind assumes that the proposed scope of work, including finalization of all deliverables described in Sections 4.0 and 5.0, will be completed within 5 years of ROD issuance or execution of the MOA, unless a different timeline is agreed upon by consulting parties and accepted by BOEM.

6.2 Roles and Responsibilities

6.2.1 Bureau of Ocean Energy Management

- BOEM remains responsible for making all federal decisions and determining compliance with Section 106 of the NHPA;
- BOEM, in consultation with the Participating Parties, will ensure that mitigation measures adequately resolve adverse effects, consistent with the NHPA;
- Work with Empire Wind, the SHPO, federally recognized Tribes/Tribal Nations with cultural and/or historic ties to the Project development area, and the ACHP using the MARTP framework;
- Review and provide feedback on draft MARTP;
- BOEM must accept the final MARTP before Empire Wind may commence any of the actions included in the MARTP;
- BOEM will be responsible for sharing the annual summary report with consulting parties;
- BOEM is responsible for consultation related to dispute resolution; and
- If parties cannot reach concurrence, consult with ACHP and non-concurring party(s) to make final decision.

6.2.2 State Historic Preservation Office(s)

- Work with BOEM, Empire Offshore Wind LLC, federally recognized Tribes/Tribal Nations with cultural and/or historic ties to the Project development area, and the ACHP using the MARTP framework; and
- Review and provide feedback on draft MARTPs.

6.2.3 Advisory Council on Historic Preservation (if applicable)

- Work with BOEM, Empire Wind, the SHPO, and federally recognized Tribes with cultural and/or historic ties to the Project development area using the MARTP framework; and
- If parties cannot reach concurrence, consult with BOEM and non-concurring parties to make final decision.

6.2.4 Empire Wind

- Empire Wind will be responsible for funding the mitigation measures as required in the ROD and/or MOA and the final MARTP;
- Work with BOEM, the SHPO, federally recognized Tribes with cultural and/or historic ties to the Project development area, and the ACHP using the MARTP framework;
- Considering the comments provided by the Participating Parties in the development of this MARTP;
- Funding the mitigation measures specified in Sections 5.0 and 6.0;
- Completion of the scope/s of work in Sections 5.0 and 6.0;
- Ensuring all Standards in Sections 5.0 and 6.0 are met;
- Providing the Documentation in Sections 5.0 and 6.0 to the Participating Parties for review and comment;
- Annual Reporting to BOEM; and
- Empire Offshore Wind LLC will be responsible for ensuring that all work that requires consultation with Tribal Nations are performed by professionals who have demonstrated professional experience consulting with federally recognized Tribes.

6.2.5 Federally Recognized Tribes with Cultural and/or Historic Ties to the Project Development Area

- Work with BOEM, Empire Offshore Wind LLC, the SHPO, and the ACHP using the MARTP framework;
- Review and provide feedback on draft MARTP;
- Participate in all activities outlined in Sections 5.0 and 6.0 and complete all associated reviews, comments, requests for feedback/input in agreed upon timeframes.

6.2.6 Consulting Parties

Empire Offshore Wind LLC does not anticipate participation by any other NHPA Section 106 consulting parties beyond those listed in this MARTP. If BOEM determines additional consulting parties will participate in this plan, the plan will be updated to include those parties.

6.2.7 Participating Party Consultation

Participating Parties will be provided opportunity for review and comment on the MARTP concurrent with BOEM's anticipated NHPA Section 106 review schedule for Empire Wind (see Section 7.1) Empire Offshore Wind LLC will provide this draft MARTP to BOEM for inclusion in the DEIS for review by consulting parties as part of BOEM's NHPA Section 106 review to provide meaningful input on the proposed mitigation

measures to resolve adverse effects to historic properties. Empire Offshore Wind LLC anticipates that further coordination to refine the MARTP may include meetings, conference calls, MARTP draft reviews and document exchanges, or similar means of communication of information.

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7 PLAN COMPLETION AND REPORTING

Empire will prepare and, following BOEM review and approval, provide all signatories, invited signatories, and consulting parties to the MOA a summary report detailing work undertaken pursuant to the MOA consistent with any MOA stipulation measures relative to monitoring and reporting, including the mitigation measures outlined in the final MARTP. This report will be prepared, reviewed, and distributed by January 31 of each year in which MOA/MARTP activities are taking place, and summarize the work undertaken during the previous year. Empire will continue to generate and distribute this yearly report until all activities required under the MOA are completed.

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8 REFERENCES

Bureau of Ocean Energy Management (BOEM)
2020 Guidelines for Providing Archaeological and Historical Property Information Pursuant to 30 CFR Part 585. United States Department of the Interior, Office of Renewable Energy Programs.

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1992 National Register Bulletin 20, Nominating Historic Vessels and Shipwrecks to the National Register of Historic Places, US Department of the Interior National Park Service Interagency Resources Division.

National Oceanic and Atmospheric Administration (NOAA)
2013 Hydrographic Survey Descriptive Report H12604, New York Harbor and Approaches, Project Number OPR-B310-KR2-13.

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2002 National Register Bulletin 15, How to Apply the National Register Criteria for Evaluation. Electronic document, https://www.nps.gov/nr/publications/bulletins/nrb15/nrb15_8.htm, accessed July 14, 2019.
1977 National Register Bulletin 16, How to Complete the National Register Form. Electronic Document, https://www.nps.gov/nr/publications/bulletins/nrb16a/, Accessed July 15, 2019.
2018 National Register of Historic Places. Electronic document, https://www.nps.gov/subjects/nationalregister/index.htm, accessed February 25, 2019.

ATTACHMENT 4 – TREATMENT PLAN FOR ABOVE-GROUND HISTORIC PROPERTIES SUBJECT TO ADVERSE VISUAL EFFECT

Empire Offshore Wind: Empire Wind Project (EW 1 and EW 2)

DRAFT

Historic Properties Treatment Plan for Above-Ground Properties Subject to Adverse Visual Effect

Prepared for:

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November 2022

FIGURES

TABLES

ACRONYMS AND ABBREVIATIONS

ACHP	Advisory Council on Historic Preservation
APE	Area of Potential Effect
AVEHAP	Analysis of Visual Effects to Historic and Architectural Properties
BOEM	Bureau of Ocean Energy Management
CFR	Code of Federal Regulations
COP	Construction and Operations Plan
CRIS	Cultural Resource Information System
Empire	Empire Offshore Wind LLC
EW	Empire Wind
HPTP	Historic Properties Treatment Plan
ft	foot
km	kilometer
m	meter
mi	mile
MOA	Memorandum of Agreement
NEPA	National Environmental Policy Act
NHL	National Historic Landmark
NHPA	National Historic Preservation Act
NJ HPO	New Jersey Historic Preservation Office
NPS	National Park Service
NRHP	National Register of Historic Places
NY SHPO	New York State Historic Preservation Office
OCS	Outer Continental Shelf
PAPE	Preliminary APE
POI	Point of Interconnection
Project	The offshore wind project for OCS A-0512 proposed by Empire Offshore Wind LLC consisting of Empire Wind 1 (EW 1) and Empire Wind 2 (EW 2).
SHPO	State Historic Preservation Office
Tetra Tech	Tetra Tech, Inc.
U.S.C.	United States Code

1. INTRODUCTION

This Historic Properties Treatment Plan (HPTP) was prepared to support fulfillment of stipulations of the Memorandum of Agreement (MOA) Among the Bureau of Ocean and Energy Management, the State Historic Preservation Officers of New York and New Jersey, and the Advisory Council on Historic Preservation Regarding the Empire Wind Offshore Wind Project (Project). This HPTP presents background information, resource descriptions, and recommendations on actions to mitigate visual adverse effects of the Project on 16 historic properties identified in the *Analysis of Visual Effects to Historic and Architectural Properties* (AVEHAP) included as Appendix Z of the Project's Construction and Operations Plan (COP, Tetra Tech 2022a).

The recommended mitigation measures described in this document were developed, in part, through engagement with the parties that manage, oversee, or own the historic properties identified herein. Empire Offshore Wind LLC (Empire) initiated engagement with the responsible parties during March to May 2021, presenting each party an opportunity to learn about the Project, the methods of analysis that identified the historic resources and how an assessment of effect was reached. Empire also solicited from each party proposals to mitigate the identified adverse effects.

This HPTP is organized into the following six sections:

- Section 1 – Introduction,
- Section 2 – Background Information,
- Section 3 – Existing Conditions and Historic Significance,
- Section 4 – Mitigation Measures,
- Section 5 – Implementation, and
- Section 6 – References Cited.

2. BACKGROUND INFORMATION

2.1 Project Description

The Project consists of an offshore wind farm to be located in the designated U.S. Bureau of Ocean Energy Management (BOEM) Renewable Energy Lease Area Outer Continental Shelf (OCS)-A 0512 (Lease Area), submarine export cables, and onshore ancillary facilities required to convey power produced by the wind farm to the regional electric transmission system. The Lease Area is approximately 14 statute miles (mi) (12 nautical miles [nm], 23 kilometers [km])[1] south of Long Island, New York, and 19.5 mi (16.9 nm, 31.4 km) east of Long Branch, New Jersey (**Figure 3-1**). The Project includes the construction of up to 147 wind turbines (the total number across both Empire Wind 1 [EW 1] and Empire Wind 2 [EW 2]) at up to 174 locations, two offshore substations, and foundations for the wind turbines and offshore substations within the Lease Area. The wind turbines will be connected via interarray cables to the offshore substations. The offshore substations will collect the power generated by the wind turbines and transport it to the Project's onshore substations via submarine export cables. The onshore substations will transmit the energy generated for connection to the Points of Interconnection (POIs) in New York[2]. The interarray cables and submarine export cables will be located subsea;

[1] Distances were originally presented throughout the AVEHAP as statute miles (mi) or nautical miles (nm) as appropriate, with kilometers in parentheses. For reference, 1 mi equals approximately 0.87 nm or 1.6 km.
[2] The Project Design Envelope proposes the construction and installation of two onshore substations to support the Project. The onshore substations will be used to connect the export cables to the POIs in New York.

therefore these will not be visible components of the Project and were not evaluated as part of the Project visual impact assessment. Empire proposes to develop the Lease Area in two wind farms.

The Project COP Volume 2c (Section 6.3.2) and its Appendix Z (AVEHAP) concluded that the onshore components of the Project would have no adverse effect on aboveground historic and architectural properties. Therefore, the focus of the HPTP is on effects from offshore Project components.

2.2 Regulatory Context

Several federal, state, and local agencies have regulatory authority over the Project based on the location of the different Project components. The wind turbines and offshore substations are to be located entirely within federal waters of the United States and the OCS and are under the jurisdiction of BOEM. Onshore facilities, including the onshore substations, will be located in Brooklyn, New York (EW 1) and the City of Long Beach and Town of Hempstead, New York (EW 2).

The Project is subject to regulation by BOEM under provisions of the Outer Continental Shelf Renewable Energy Program authorized by the Energy Policy Act of 2005 (42 United States Code [U.S.C.] §§ 13201 *et seq.*). Assessments of effects on historic architectural resources are required to support BOEM's National Environmental Policy Act (NEPA) review process and the review performed under Section 106 of the National Historic Preservation Act (NHPA; 54 U.S.C. § 306108). In its COP Guidelines, BOEM recommends approaches for assessing historic architectural resources during the permitting phase of offshore wind projects (BOEM 2017). BOEM directs that an AVEHAP should be conducted in a manner acceptable to the relevant State Historic Preservation Office (SHPO) for the state with the onshore viewshed. For the purposes of this Project, the affected areas fall within the states of New York and New Jersey.

In 2016, BOEM executed a Programmatic Agreement with the SHPOs of New York and New Jersey, the Shinnecock Indian Nation, and the Advisory Council on Historic Preservation to formalize agency jurisdiction and coordination for the review of offshore renewable energy development regarding cultural resources (BOEM 2016). The Programmatic Agreement recognized that issuing renewable energy leases on the OCS constituted an undertaking subject to Section 106 of the NHPA. BOEM, as the lead federal agency in this process, initiated consultations with the SHPOs, and with interested Native American Tribes. Empire continues to engage with stakeholders with regards to potential impacts to architectural properties.

BOEM has determined that construction, operations and maintenance, and decommissioning of the Empire Wind Offshore Wind Project, as described in the Empire Wind Construction and Operations Plan, constitutes an undertaking subject to Section 106 of the National Historic Preservation Act (54 U.S.C. § 306108) and its implementing regulations (36 Code of Federal Regulations [CFR] § 800), and that the activities proposed under the COP have the potential to affect historic properties.

Physical changes to historic properties may require approvals from local cities, towns, or commissions, including building permits, zoning or land use applications, design review boards, or historic preservation commissions. However, Empire is not proposing physical changes to historic properties; therefore, applicable municipal laws or regulations preservation are not directly relevant to the regulatory framework for the development of this HPTP. Where funding of rehabilitation may be a proposed mitigation measure, municipal laws or regulations may be applicable to the project being funded.

The Study Area is situated at the northernmost extent of the Atlantic Coastal Plain physiographic province, a region of low relief and diverse ecological habitats. The southern shore of Long Island and the New Jersey shoreline are characterized by barrier islands, bayside salt marsh lagoons, and sand beaches.

Coastal New York and New Jersey are areas with extensive historical value and a tradition of historical commemoration resulting in numerous cultural resources that are listed in and determined to be eligible for the NRHP (i.e., historic properties) within the Project Area of Potential Effects (APE). As defined by 36 Code of Federal Regulations § 800.16(d), the APE is "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."

As the lead federal agency for the NHPA Section 106 review, BOEM has defined the APE for the undertaking as:

- 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 onshore or offshore, would be visible; and
- Any temporary or permanent construction or staging areas, both onshore and offshore.

Empire Wind prepared the AVEHAP included as Appendix Z of the Project's Construction and Operations Plan to support BOEM's identification of historic properties in the APE. Based on review of this document and consultations with NHPA Section 106 consulting parties, BOEM has determined that the undertaking will result in visual adverse effects to 16 above-ground historic properties, as described in BOEM's Finding of Adverse Effect for the undertaking. **Table 2-1, Figure 3-1** and **Figure 3-2** presents information on the historic and architectural properties adversely affected by the Project.

Table 2-1. Historic and Architectural Properties Adversely Affected by Project (Figure 3-1 and Figure 3-1

Resources	NRIS No. SHPO No.	Status	NR Criterion	Town/County
New York				
West Bank Light Station	06001230	NR Listed	A, C (engineering)	Staten Island/ Richmond
Silver Gull Beach Club Historic District	08101.012423	NR Eligible	A, C	Breezy Point/ Queens
Breezy Point Surf Club Historic District	08101.011499	NR-Eligible	A, C	Breezy Point/ Queens
Jacob Riis Park Historic District	81000081	NR Listed	C	Far Rockaway/ Queens
Jones Beach State Park, Parkway and Causeway System	05000358	NR Listed	A, C	Hempstead/ Nassau
Gilgo State Park	10301.000084	Recommended NR Eligible	-	Babylon/ Suffolk
Robert Moses State Park	10305.001592	NR Eligible	A, C	Babylon/ Suffolk
Fire Island Lighthouse and Historic District	81000082	NR Listed	A, C, D	Islip/ Suffolk
Carrington House	13001057	NR-Listed	A, C	Brookhaven/ Suffolk
Point O'Woods Historic District	10302.003470	NR Eligible	A, C	Brookhaven/ Suffolk

Resources	NRIS No. SHPO No.	Status	NR Criterion	Town/County
New Jersey				
Romer Shoal Light Station	06001304	NR Listed	A, C	Highlands Borough/ Monmouth
Sandy Hook Light	66000468	NHL	A	Middletown/ Monmouth
Water Witch (Monmouth Hills) Historic District	04000147	NR Listed	A, B, C	Middletown/ Monmouth
Allenhurst Residential Historic District	10000353	NR Listed	C	Allenhurst/ Monmouth
Ocean Grove Camp Meeting Association District	76001170	NR Listed	A, C	Ocean Grove/ Monmouth
Fort Hancock U.S. Life Saving Station	81000080	NR Listed	A, C	Middletown/ Monmouth

BOEM has consulted with the Advisory Council on Historic Preservation (ACHP), State Historic Preservation Officers and staff from New Jersey and New York, federally recognized Tribal Nations, and other NHPA Section 106 consulting parties on ways to avoid, minimize, or mitigate adverse effects to historic properties. BOEM has decided to execute a project-specific MOA pursuant to 36 CFR § 800.8(c) to record the terms and conditions agreed upon to resolve adverse effects of the undertaking.

The mitigation measures agreed upon by BOEM, the ACHP, NJ HPO, and NY SHPO to resolve adverse effects to historic properties, including this HPTP, are recorded in the Memorandum of Agreement Among the Bureau of Ocean and Energy Management, The State Historic Preservation Officers of New Jersey and New York, and the Advisory Council on Historic Preservation Regarding the Empire Wind Offshore Wind Energy Project.

Pursuant to the terms and conditions of the MOA, Empire Wind will implement applicant-proposed environmental protection measures to avoid or minimize potential visual impacts to above-ground historic properties. This HPTP was developed by the applicant to fulfill stipulations of the MOA to resolve adverse effects to 16 above-ground historic properties.

3. EXISTING CONDITIONS AND HISTORIC SIGNIFICANCE

The AVEHAP identified 16 resources that are likely to experience adverse effects due to introduction of visual changes from Project construction or operations. These properties include five broad types of cultural resources all of which owe their existence to the proximity of the Atlantic Ocean and all acquiring their historic significance through interaction with the littoral environment. The five types of cultural resources include:

- Lighthouses and Light Stations
    - Fire Island Lighthouse
    - Sandy Hook Lighthouse
    - West Bank Light Station
    - Romer Shoals Light Station

- Parks
    - Jacob Riis State Park
    - Jones Beach State Park
    - Gilgo State Park
    - Robert Moses State Park
- Residential Communities or Houses
    - Point O'Woods
    - Water Witch Historic District
    - Allenhurst Historic District
    - Ocean Grove Camp Meeting Association Historic District
    - Carrington House
- Beach Clubs
    - Silver Gull Beach Club Historic District
    - Breezy Point Surf Club Historic District
- Life Saving Station
    - Fort Hancock U.S. Life Saving Station

Brief descriptions of the existing conditions and historic significance of each of the properties adversely affected by visual impacts of the Project are presented below.

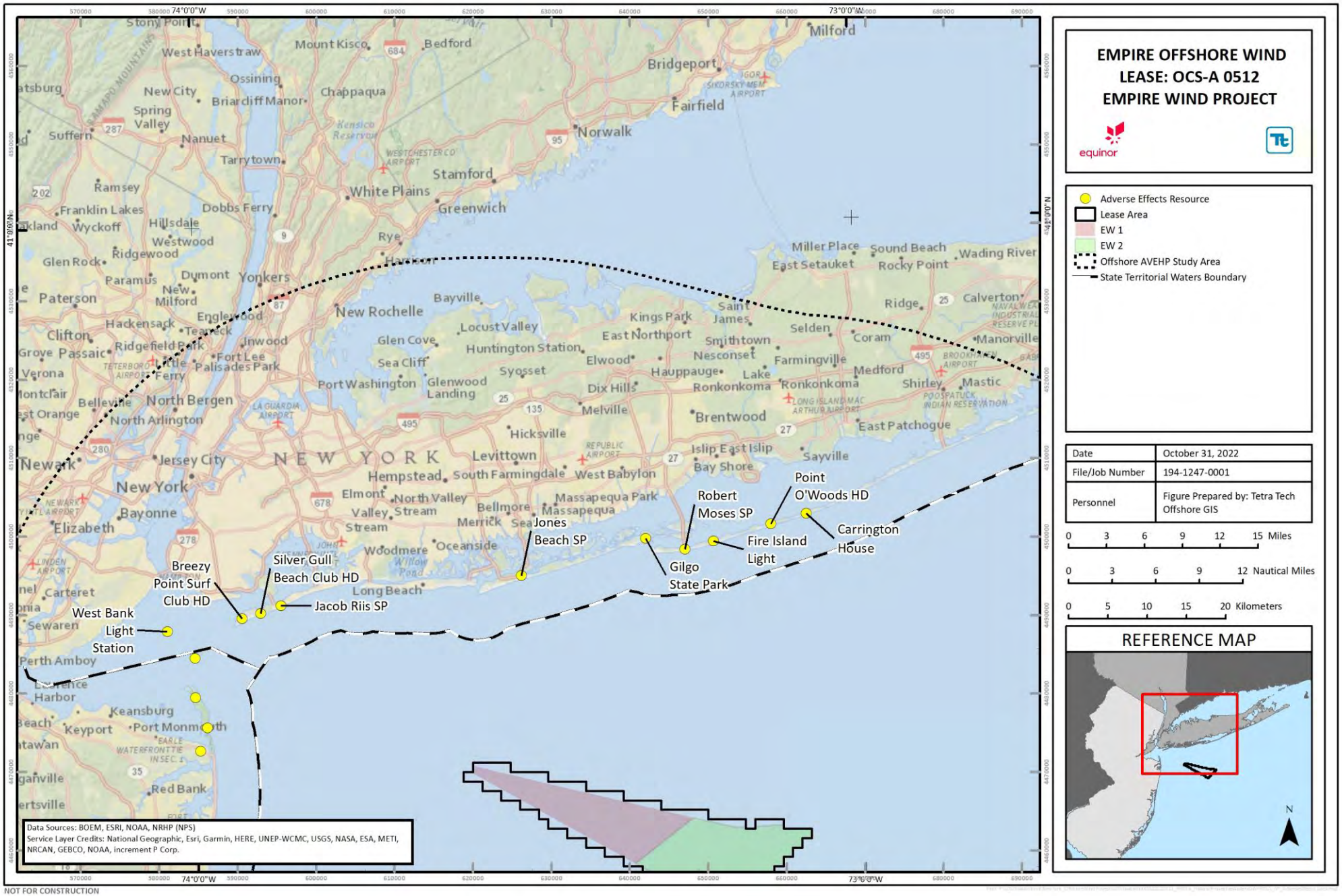

Figure 3-1 Recommended Adversely Affected Historic and Architectural Properties within the Offshore AVEHAP Preliminary APE in New York

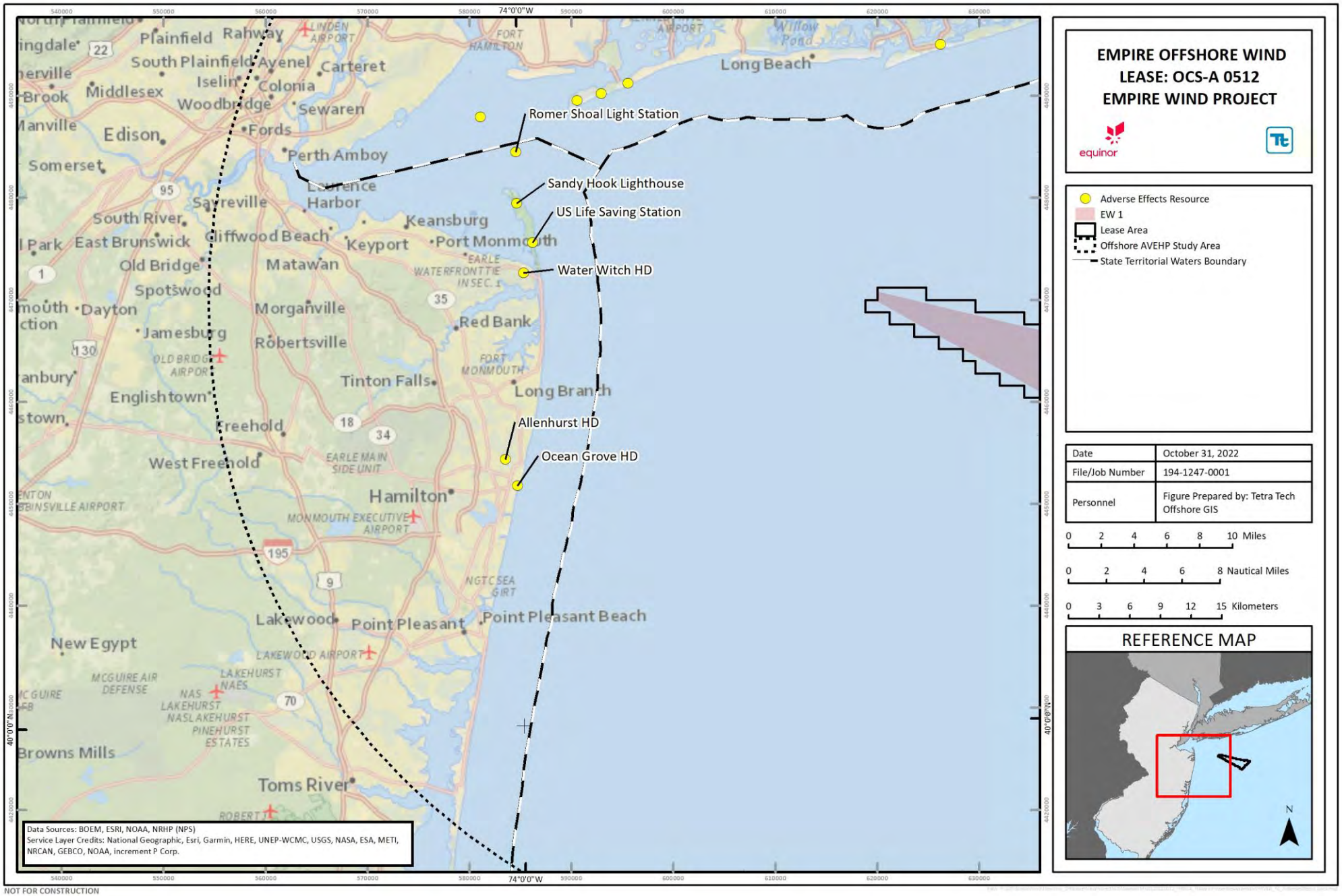

Figure 3-2 Recommended Adversely Affected Historic and Architectural Properties within the Offshore AVEHAP Preliminary APE in New Jersey

3.1 New York

3.1.1 West Bank Light Station (NR No. 06001230)

The West Bank Light Station is an important maritime navigational aid located in Lower New York Bay, approximately 3 nm (5.6 km) east of New Dorp Beach, Staten Island (**Figure 3-3**). Built in 1901 in water 21 feet deep, the light station was constructed of a cast iron caisson expanding in trumpet shape to form a gallery above which supports an iron conical tower surmounted by a black lantern. Hundreds of tons of riprap encircle the station and form a small anchorage for boats. When installed, the light station contained a 4th order Fresnel lens and was visible for approximately 12 nm (22 km). Automated in the 1980s, the light station's period of significance is 1901-1971 (NARA 2022a).

The West Bank Light Station was listed in the NRHP in 2006 under Criterion A for its association with the federal program of coastal maritime safety, and Criterion C as an excellent example of maritime-related architecture. The property is listed as part of the Light Stations of the United States multiple property submission. Its existing configuration and appearance accurately reflect its character during the period of significance; however, the corrosive effects of its marine environment and storm damage have severely impacted the property's condition. The Project will be visible from the light station, which is located near the entrance to New York Harbor with a relatively unobstructed view towards the Project between Sandy Hook and Rockaway Point. The setting of this historic aid to navigation is important to understanding its significance. The introduction of the Project will likely change the sense of the ocean's expanse during periods of visibility, diminishing the apparent prominence of the light station. Criteria A and C are readily interpreted to mean that an expansive and unimpeded ocean view is integral to the light station's character and setting. Tetra Tech recommends that the introduction of the Project would diminish this character and result in an adverse effect to the West Bank Light Station.

Figure 3-3 West Bank Light Station (Source: Lighthousefriends.com)

3.1.2 Silver Gull Beach Club Historic District (Cultural Resource Information System [CRIS] No. 08101.012423)

Silver Gull Beach Club Historic District is a significant local example of a seaside beach club that served an urban population in the post-Second World War period (**Figure 3-4**). The beach club comprises adjoining rows of cabanas, a club house, pool, athletic facilities, and ocean beach located on the Rockaway Peninsula. Built in 1962 as a private club offering seaside recreational amenities, the period of significance is 1962–1963 (NARA 2022b). The historic district lies within the Gateway National Recreation Area, which leases the club facilities to its operators. Though suffering storm damage from Hurricane Sandy in 2012, the beach club has remained largely unaltered in appearance from its origins. The property is NRHP eligible under Criterion A for its association with the development of seaside recreation and entertainment in the post-Second World War period, and under Criterion C as a nearly intact example of oceanfront recreational architecture. The property's existing configuration and appearance accurately reflects its character during the period of significance. The beach club offers its members and guests expansive views of the Atlantic Ocean in one of New York City's last undeveloped locations. The introduction of the Project within sight of the beach and cabanas that comprise the historic district will likely diminish the sense of separation from the urbanized world that lies just beyond the district. Tetra Tech recommends that the introduction of the Project would diminish this character and result in an adverse effect to the Silver Gull Beach Club Historic District.

Figure 3-4 Silver Gull Beach Club Historic District (Source: New York Times)

3.1.3 Jacob Riis Park Historic District (NR No. 81000081)

Jacob Riis Park Historic District comprises a 1-mi long section of the Rockaway Peninsula in Queens County, New York, fronting the Atlantic Ocean and backing Rockaway Inlet (**Figure 3-5**). The park was created in 1932 under the direction of New York City Parks Commissioner, Robert Moses, who also oversaw the construction of Marine Parkway Bridge linking the peninsula to Brooklyn, New York. In addition to swimming and sunbathing, Jacob Riis Park provides a variety of recreational activities including, fishing, hiking, boating, and ball fields. Park buildings were rendered in the recreational architectural style popular in the 1930s, with the Art Deco main bathhouse a prime example. Park buildings have been largely unaltered since their construction in the 1930s and reflect the character of the property's period of significance, 1932-1937 (NARA 2022c).

Jacob Riis Park Historic District was listed in the NRHP in 1981 under Criterion A for its association with important social and government programs during the presidency of Franklin Roosevelt, including the Works Progress Administration (WPA). The district is also listed under Criterion C as an example of the prevalent aesthetic design of the 1930s, much of it undertaken by the WPA, and also as an important example of planned seaside recreational use. Observations made by the Project team in 2019 indicate that Jacob Riis Park currently retains its significance and integrity. The Project will be visible from most lines of sight within the property. The primary focus of the park, both in terms of purpose and visual orientation, is the ocean. Whether in the water or on the beach, observers are drawn to the ocean by the sound of the surf, the kinetic motion of the waves, and the sensory effects of sand, salt, and water. Tetra Tech recommends that the introduction of the Project would diminish this character and result in an adverse effect to the Jacob Riis Park Historic District.

Figure 3-5 Jacob Riis Park Historic District, view to northwest (Source: bridgeandtunnelclub.com)

3.1.4 Jones Beach State Park/Jones Beach State Park, Causeway and Parkway System (NR No. 05000358)

Jones Beach was envisioned in the early 1920s by Robert Moses as an expansive seaside recreational destination for middle class urban dwellers (**Figure 3-6**). Construction began in 1925 and continued through the mid-1950s, bookending its period of significance from 1925-1955. The park incorporated ocean and bay fronts, landscaped roads and paths, a boardwalk, and a large building complex housing bathhouses and service and recreational facilities. The bathhouses can accommodate up to 15,000 people. Moses created the park as an extensive naturalistic landscape and transportation network that included highways and bridges (NARA 2022d).

The Jones Beach State Park/Jones Beach State Park Causeway and Parkway System was listed in the NRHP as a historic district in 2005 under Criterion A for its association with the development of public oceanside recreational facilities on Long Island, and under Criterion C for both its Beaux Arts design with use of Art Deco motifs and its large-scale beach development created to allow public access to oceanside recreation in New York. Observations made by the Project team in 2019 indicate that Jones Beach State Park/Jones Beach State Park, Causeway and Parkway System retains its significance and integrity. The Project will be visible from many lines of sight within the park. The primary focus of the park, both in terms of purpose and visual orientation, is the ocean. The park draws visitors who wish to experience the sights, sounds, and tactile sensations of the ocean, open sky, and sandy beach. The expansive, unimpeded views of the Atlantic Ocean are integral to the property's character and setting. Visual impacts of the Project are likely to diminish the characteristics for which the property is listed in the NRHP. Tetra Tech recommends that the introduction of the Project would diminish this character and result in an adverse effect to the Jones Beach State Park/Jones Beach State Park, Causeway and Parkway System.

Figure 3-6 Jones Beach State Park, view to southeast (Source: OPRHP)

3.1.5 Gilgo State Park (CRIS No. 10301.000084)

Gilgo State Park, located within the eastern half of Jones Beach Island, is a recorded and unevaluated property in CRIS (**Figure 3-7**).

Established in 1926, the park contains oceanside beaches, a channel-side marina, and bath house facilities for the public. The period of significance is 1926-1935. Gilgo State Park is recommended NRHP eligible under Criterion A for its association with the early twentieth century development of public-access recreation along Long Island's south shore (NY SHPO 2022a).

The Project will be visible from the property. The most striking characteristic of the park is its setting as an undeveloped beach with expansive and unobstructed views of the Atlantic Ocean. Tetra Tech recommends that the introduction of the Project would diminish this character and result in an adverse effect to the Gilgo State Park.

Figure 3-7 Gilgo State Park, view to east (Source: Newsday)

3.1.6 Robert Moses State Park (CRIS No. 10305.001592)

Robert Moses State Park, located at the western end of Fire Island, was established in 1908 as Fire Island State Park, the first state park on Long Island (**Figure 3-8**).Prior to the construction of the Robert Moses Causeway from Long Island to Fire Island in 1964, the park was accessible only by ferry or private boat. The causeway greatly increased attendance at the park. In 1964 the park was renamed Robert Moses State Park to honor the chairman of the Long Island State Park Commission who oversaw much of the planning and development of the various state parks along Long Island's south shore, including Jacob Riis, Jones Beach, Gilgo, and Captree. The period of significance is 1908-1964, marking the completion of the causeway and construction of Field #2 Bathhouse. Robert Moses State Park is NRHP eligible as a Building District under Criterion A for its association with the development of Long Island's south shore as a recreational destination for urban and suburban dwellers, and under Criterion C for its recreation architecture. The Field #2 Bath House is also individually NRHP eligible for its mid-century modern architecture (NARA 2022e).

The Project will be visible from this property. Unobstructed views of the Atlantic Ocean are integral to the character and setting of this park, and thus its NRHP eligibility. Tetra Tech recommends that the introduction of the Project would diminish this character and result in an adverse effect to the Robert Moses State Park.

Figure 3-8 Robert Moses State Park, view to southeast (Source: marinas.com)

3.1.7 Fire Island Lighthouse and Historic District (NR No. 81000082)

The Fire Island Lighthouse was built in 1858, rises 150 ft high, and became the most important maritime navigational aid on the eastern seaboard because it marked the first landfall for ships approaching New York Harbor on the trans-Atlantic routes (**Figure 3-9**). The present lighthouse replaced one built in 1826. The lighthouse's hollow central column of cast iron is clad in brick and covered with a cement wash. The original lamp, with its 1st order Fresnel lens, was visible for 21-23 nm and filled the gap between Montauk Point Light to the east and Sandy Hook Light to the west. Various lamp fuels were utilized, including lard, whale oil, kerosene, and incandescent oil vapor, until electrification occurred in 1939. The historic district includes the lighthouse and the keeper's house, in addition to 14 other contributing buildings, sites, and structures. The district's period of significance is 1825-1960, encompassing the period of the first Fire Island lighthouse to the construction of the U.S. Coast Guard Garage, the last major structure added to the district (NARA 2022f).

The historic district was listed in the NRHP in 1981 under Criterion A for its association with the early federally sponsored program of maritime navigational aids along the eastern seaboard and is significant in the areas of maritime history, transportation, communication, commerce, and military. The district is listed under Criterion C as an outstanding example of mid-nineteenth century lighthouse engineering and architecture. The district is also listed under Criterion D for its potential to contain significant post-contact period archaeological deposits. Observations made by the Project team in 2019 indicate that the Fire Island Lighthouse Historic District currently retains its significance and integrity. The lighthouse and historic district are located on an undeveloped stretch of the barrier beach to the west of the communities of Fire Island. Although the NRHP nomination does not explicitly note the significance of the view to the ocean, the setting of this historic aid to navigation, specifically the unimpeded views of the Atlantic Ocean, is important to understanding its significance. Tetra Tech recommends that the introduction of the Project would diminish this character and result in an adverse effect to the Fire Island Lighthouse and Historic District.

Figure 3-9 Fire Island Lighthouse and Historic District, view to northwest (Source: Wikipedia)

3.1.8 Point O'Woods Historic District (CRIS No. 10302.003470)

Point O'Woods was established in 1894 by the Long Island Chautauqua Assembly Association as a Methodist community offering spiritual, recreational, and educational advancement (**Figure 3-10**). Located in the isolated central portion of Fire Island, Point O'Woods includes 133 residential buildings, plus community structures, and maintenance facilities, nearly all rendered in the Shingle style popular among shore communities dating from the late nineteenth century. The period of significance is 1894 to circa 1962, when the Fire Island National Seashore was created. In contrast to other communities on Fire Island, Point O'Woods has avoided an over-reliance on a rectangular grid plan, making use of curved roads and paths (NY SHPO 2022b).

The Point O'Woods Historic District on Fire Island is NRHP eligible under Criterion A for its association with the Chautauqua movement and development of private beach communities during the early twentieth century. It is also eligible under Criterion C for its comprehensive and innovative design as a beach community. The district is a gated community to which the Project team did not have access. Nonetheless, current imagery appears to confirm that the Point O'Woods Historic District retains the appearance and setting reflecting its period of significance. Point O'Woods sought to provide members with seaside recreation and unobstructed ocean views as a refuge from the city and as an avenue for spiritual cultivation. Tetra Tech recommends that the introduction of the Project would diminish this character and result in an adverse effect to the Point O'Woods Historic District.

Figure 3-10 Point O'Woods Historic District Fire Island Lighthouse and Historic District, view to southeast (Source: ataltitudegallery.com)

3.1.9 Breezy Point Surf Club Historic District (CRIS No. 08101.011499)

The Breezy Point Surf Club Historic District encompasses New York City's oldest and largest beach cabana club, located near the western tip of the Rockaway Peninsula in the Borough of Queens (**Figure 3-11**). Opened as a private club in 1937, it offered seaside recreation for middle-class urban clientele who had not the means to purchase summer homes elsewhere along the shore. The club consisted of small, rather spartan cabanas, pool and sports facilities, a restaurant, and ocean beach. The western margin of the Rockaway Peninsula accretes sand from longshore currents, and by the 1950s, the original cabanas had become distant from the beach, causing the club to construct a second set of cabanas and club facilities nearer the ocean. Presently, due to continual accreting processes, the second-generation cabanas find themselves about a quarter-mile form the beach. In its heyday in the post-Second World War period, the club had a largely Irish and Italian ethnic make-up, with as many as a few thousand people visiting on summer days. The success of the club was due in no small part to the increasing ownership by the middle-class of automobiles and by the construction of New York City's parkway system that allowed access to the otherwise isolated Breezy Point section of the Rockaways.

The Breezy Point Surf Club Historic District retains a large measure of integrity and original design content reflecting its period of significance from 1937 to 1963. The district is NRHP-eligible under Criterion A for its association with the development of seaside recreation in New York City during the Great Depression. It is also eligible under Criterion C as an example of mid-twentieth century beach club cabana complex. The district offers its members an expansive view of the Atlantic Ocean from its beach, an isolated setting that is one of the last undeveloped tracts in the city. This characteristic, important to its eligibility in the area of recreation, would likely be altered or diminished by the introduction of an entirely new daytime and nighttime vista by the Project. The Project will be visible during daytime and nighttime periods. Tetra Tech recommends that the introduction of the Project would diminish this character and result in an adverse effect to the Breezy Point Surf Club Historic District.

Figure 3-11 Breezy Point Surf Club Historic District (Source: Breezy Point Historical Society of New York)

3.1.10 Carrington House (NR No. 13001057)

The Carrington House is an early twentieth century beach house on Fire Island, in the Town of Brookhaven, New York (**Figure 3-12**). Built circa 1912 and enlarged in the 1930s or 1940s, the house is an early, intact example of residential structures that characterized Fire Island as a resort community. The house is a wood shingle-clad bungalow with some Craftsman-style details, such as exposed rafter ends, and is set between two parallel beach dunes surrounded by short pines and scrub vegetation. About 60 feet to the east sits a small guest house composed of two sections of the former Lone Hill Lifesaving Station that were moved onsite in the early 1940s and cobbled together as a single unit. The main house was built by Frederick Marquet as a vacation home and was purchased in 1927 by Frank Carrington, a noted theater director. It is through Carrington that the property acquired a reputation as a salon for gay artists, actors, and writers over the next few decades, one of several such residences in the Fire Island communities of Cherry Grove and the Pines.

The period of significance of the resource is from 1912 to 1969, when Carrington deeded the property to the NPS. The property is NRHP-listed under Criterion A in the area of recreation for its association with the development of Fire Island as a vacation community in the early twentieth century which focused on the immediacy of the ocean setting and the isolated landscape and was also eligible under Criterion A for the encouragement and growth of gay cultural life in the local community from the 1930s to the 1960s. As an intact example of beach bungalow architecture, the Carrington House is significant under Criterion C. The resource will have views of the Project during daytime and nighttime periods. Tetra Tech recommends that the introduction of the Project would diminish this character and result in an adverse effect to the Carrington House.

Figure 3-12 Carrington House (Source: Wikipedia contributor Leah Fallica)

3.2 New Jersey

3.2.1 Romer Shoal Light Station (NR No. 06001304)

The Romer Shoal Light Station was built in 1898 by the federal government as an aid to maritime navigation at the entry to New York Harbor (**Figure 3-13**). The station, located 4 mi north of Sandy Hook, consists of a 30-ft diameter cast iron, cylindrical caisson filled with rock and concrete that supports a 4-story cast iron tower. Above is a circular watch room surrounded by a gallery, surmounted by the lantern. The lantern originally contained a 4th order Fresnel lens and has been automated since 1966. The period of significance covers the period 1898-1966. The light station remains in its original location, and its design, materials, and setting reflect the period of significance (NARA 2022g).

Romer Shoal Light Station was listed in the NRHP in 2006 under Criterion A for its association with the late nineteenth century federal program to provide an integrated system of navigational aids throughout the United States and to promote maritime safety in the vicinity of New York Harbor and under Criterion C as an intact example of maritime-related engineering and architecture that incorporated important innovations at the turn of the twentieth century. Although suffering from deterioration caused by the salt-water environment and storms, reviews of aerial photographs and interviews with members of a friends of the lighthouse association, suggest that the Romer Shoal Light Station currently retains its significance and integrity. The Project will be visible from the Romer Shoal Light Station. Although the NRHP nomination does not explicitly note the significance of the view to the ocean, the setting of this historic aid to navigation is important to understanding its significance. Criteria A and C are readily interpreted to mean that an expansive, unimpeded ocean view is integral to the light station's character, setting, feeling, and association. The introduction of the Project will likely change the sense of the ocean's expanse during periods of visibility, altering the apparent prominence of the light. Tetra Tech recommends that the introduction of the Project would diminish this character and result in an adverse effect to the Romer Shoal Light Station.

Figure 3-13 Romer Shoal Light Station (Source: us-lighthouses.com)

3.2.2 Sandy Hook Light (NR No. 66000468)

The Sandy Hook Light, built in 1764, is the oldest extant lighthouse in the United States (**Figure 3-14**). Standing 103 ft tall, the octagonal brick structure tapers upward from a base diameter of 29 ft to 15 ft at the top. The lantern and catwalk are accessible by a spiral, cast iron staircase. The property's period of significance is 1764-1799. The lighthouse largely has been unaltered in appearance and materials since its construction, and accurately reflects the character of the property during its period of significance. Areas of significance include commerce and transportation (NARA 2022h).

Sandy Hook Light was designated a National Historic Landmark in 1964 and was listed in the NRHP in 1966 under Criterion A for its association with the colonial program to promote maritime safety along the eastern seaboard. Observations made by the Project team in 2019 indicate that the Sandy Hook Light currently retains its significance and integrity. Although the NRHP nomination does not explicitly note the significance of the view to the ocean, the setting of this historic aid to navigation is important to understanding its significance. Criterion A is readily interpreted to mean that an expansive, unimpeded ocean view is integral to the light station's character, setting, feeling, and association. The introduction of the Project will likely change the sense of the ocean's expanse during periods of visibility. Tetra Tech recommends that the introduction of the Project would diminish this character and result in an adverse effect to the Sandy Hook Light.

Figure 3-14 Sandy Hook Light, view to north (Source: Smithsonian Magazine)

3.2.3 Water Witch (Monmouth Hills) Historic District (NR No. 04000147)

The Water Witch (Monmouth Hills) Historic District was listed in the NRHP in 2004 under Criterion A for its association with the development of the Atlantic Highlands as a summer community for the professional class during the late-nineteenth and early-twentieth centuries; under Criterion B for its association with the life of Frederick P. Hill, a well-known architect who designed and resided in the community; and under Criterion C for its contribution to community planning, construction techniques, and architecture (**Figure 3-15**). It is significant as an example of a late nineteenth and early twentieth century romantically designed summer community set among winding gravel roads, with vegetated lots and hills offering scenic views of the Atlantic Ocean, Raritan Bay, and Sandy Hook. Included in the district is the individually listed Water Witch Club Casino (NR No. 90001219) (NARA 2022i).

Observations made by the Project team in 2021 indicate that Water Witch (Monmouth Hills) Historic District currently retains its significance and integrity. The Project will be visible from this property. The district is cited for its picturesque siting of buildings and landscaping that offer excellent views of the Atlantic Ocean. Tetra Tech recommends that the introduction of the Project would diminish this character and result in an adverse effect to the Water Witch Historic District.

Figure 3-15 Water Witch (Monmouth Hills) Historic District, view to southwest (Source: NPS)

3.2.4 Allenhurst Residential Historic District (NR No. 10000353)

The Allenhurst Residential Historic District comprises 290 residences, 202 outbuildings, a municipal building, a church, a restaurant, and the Allenhurst Beach Club complex (**Figure 3-16**). Most of the residences were built by the Coast Land Improvement Company around the turn of the twentieth century, as a seaside residential community designed to attract upper middle-class professionals. A number of architectural styles were employed, including Tudor Revival, Gothic Revival, Queen Anne, Prairie, Mission, Shingle, and Craftsman. The period of significance is 1895-1930, when the trolley lines to the district ceased running and development in the area slowed (NARA 2022j).

The district is NRHP listed under Criterion C as an example of late nineteenth and early twentieth century community development that employed an assemblage of revival styles. Observations made by the Project team in 2019 indicate that the Allenhurst Residential Historic District retains its significance and integrity. The community was built to take advantage of the unobstructed ocean views. The introduction of the Project will likely change the relationship of sea and land that serves as a proscenium arch between the community and the Atlantic Ocean. Tetra Tech recommends that the introduction of the Project would diminish this character and result in an adverse effect to the Allenhurst Residential Historic District.

Figure 3-16 Allenhurst Residential Historic District, view to northwest (Source: Google Earth)

3.2.5 Ocean Grove Camp Meeting Association Historic District (NR No. 76001170)

The community of Ocean Grove, New Jersey was established by the Methodist Church in 1870 as a seaside resort, religious assembly, and spiritual haven for congregants (**Figure 3-17**). The Ocean Grove Camp Meeting Association owns all property in the community, letting long-term leases on residences, and formally functioning as the municipal authority. Comprising nearly one thousand buildings, nearly three-quarters are stick-style design. The period of significance is 1870-1894, when the Great Auditorium was completed (NARA 2022k).

The Ocean Grove Camp Meeting Association Historic District was listed in the NRHP in 1976 under Criterion A for its association with the religious camp meeting as a planned community, for its vernacular architecture, and for the nineteenth century acoustical science and ventilation system demonstrated by the Great Auditorium. Observations made by the Project team in 2019 indicate that the Ocean Grove Camp Meeting Association Historic District currently retains its significance and integrity. The Project will be visible from the historic district. The district's setting along the then-undeveloped Atlantic Ocean shoreline was chosen by the community founders to encourage spiritual renewal among parishioners. The introduction of the Project onto the views enjoyed by Ocean Grove will diminish the sense of expansive grandeur offered by the Atlantic Ocean views. Tetra Tech recommends that the introduction of the Project would diminish this character and result in an adverse effect to the Ocean Grove Camp Meeting Association Historic District.

Figure 3-17 Ocean Grove Camp Meeting Association Historic District, view to north (Source: marylmartin.com)

3.2.6 Fort Hancock U.S. Life Saving Station – Gateway National Recreation Area (NR No. 81000080)

The Fort Hancock U.S. Life Saving Station was established on Sandy Hook, New Jersey in 1894 and deactivated in 1949, bookending the period of significance between these dates. This station was one of six original U.S. Life Saving Service sites in New Jersey. The lifesaving station was built in the Shingle style, while railings and framing principals exhibit Craftsman influence. Since 1974, the building has served as a visitor center for Gateway National Recreation Area. Relatively unaltered since its construction, the property accurately reflects the character of the station during its period of significance.

The Fort Hancock Life Saving station was listed in the NRHP in 1981 under Criterion A for its association with the earliest federally sponsored efforts to save life and property from coastal shipwrecks, and under Criterion C as an example of late-nineteenth-century New Jersey coastal utilitarian architecture. Observations made by the Project team in 2019 indicate that the Fort Hancock, U.S. Life Saving Station currently retains its significance and integrity **(Figure 3-18**). The property will have a view of the Project. Its historic viewshed during the period of significance would have been a broad vista of beach to north and south and unobstructed views of the ocean between them. The expansive character of this viewshed was intrinsic to the function of the life-saving station and construction of the Project will introduce new elements to this viewshed that are likely to alter the character of the resource's historic setting, diminishing the significance of the character-defining elements for which the property has been listed in the NRHP. The resource will have views of the Project during daytime and nighttime periods Tetra Tech recommends that the introduction of the Project would diminish this character and result in an adverse effect to the Fort Hancock U.S. Life-Saving Station.

Figure 3-18 Fort Hancock U.S. Life Saving Station (Source: Wikipedia contributor akaBuddy)

4. MITIGATION MEASURES

The recommended mitigation measures presented in this HPTP are the outcome of engagement with the interested parties combined with best management practices in the field of historic preservation. Measures to mitigate adverse effects to historic properties should relate to historic preservation and should result in a benefit to the whole community, not just to individual properties or property owners. Preliminary proposals presented by some of the interested parties have been incorporated into the mitigation measures provided herein. The content of this section was developed on behalf of Empire by individuals who met Secretary of the Interior (SOI) Qualifications Standards for Archeology and/or History (62 FR 33708) and is consistent with fulfilling the mitigation measures such that they fully address the nature, scope, size, and magnitude of adverse effects to historic properties. Effective historic preservation planning requires property-specific information as an initial step in developing appropriate mitigation measures, as different types of resources require different approaches. Five types of historic resources are represented by the 16 adversely affected properties: lighthouses/light stations, parks, residential communities or houses, beach clubs, and a life saving station.

4.1 Lighthouses and Light Stations

- Sandy Hook Lighthouse (NR No. 66000468)
- Fire Island Lighthouse (NR No. 81000082)
- Romer Shoal Light Station (NR No. 06001304)
- West Bank Light Station (NR No. 06001230)

Typically situated on a headland along the shoreline, lighthouses have served as navigational aids for mariners and their ships since antiquity. The Project will adversely affect two lighthouses (Sandy Hook Lighthouse and Fire Island Lighthouse) and two light stations (Romer Shoal Light Station and West Bank Light Station). By the mid-nineteenth century, lightships or stationary light stations were positioned in open waters at critical navigational passages, such as Ambrose Channel entering Lower New York Bay. Lighthouses and light stations are susceptible to a variety of environmental impacts, including continuous exposure to salt, waves, and wind. In 2012, Hurricane Sandy dislodged portions of the rip rap anchorages at Romer Shoal Light Station and West Bank Light Station and flooded their lower stories.

4.1.1 Sandy Hook Lighthouse (NR No. 66000468) and Fire Island Lighthouse (NR No. 81000082)

The Sandy Hook Lighthouse and Fire Island Lighthouse are located on federal lands administered by the National Park Service. In contrast to the two light stations, the lighthouses are accessible to the public and function as important landmarks in their respective locales. Empire will sponsor Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER) documentation of the two structures. HABS/HAER recordation is a standard procedure in historic preservation to document at-risk properties listed on the NRHP and NHL. The purpose and intended outcome of this mitigation measure would be to document the current conditions of the historic properties and their settings. As conducted by a Secretary of the Interior-qualified architectural historian, this type of documentation can be a useful tool to identify preservation-related issues for agencies and stakeholders. SHPOs commonly require HABS/HAER recordation to fulfill Section 106 compliance. Empire will provide the HABS/HAER documentation to the National Park Service, local libraries, and to BOEM.

Empire will be responsible for funding and implementation of the mitigation measure.

4.1.2 Romer Shoal Light Station (NR No. 06001304)

Engagement in 2021 among Empire, Tetra Tech, and Romer Shoal Lighthouse (RSL), a non-profit organization that owns the light station, identified several structural issues that were affecting the resource. These included deterioration of exterior windows and doors, piers, caisson and rip rap anchorage, and deterioration of interior areas that include the kitchen and keeper's common area, bathroom, equipment level, and the watch and lantern levels. Following a completed engineering survey, rehabilitation of some of these features is already underway, funded by grants through the Sandy Recovery Improvement Act of 2013 administered by the Federal Emergency Management Agency (FEMA), and historic preservation grants from the New Jersey Historic Trust. Empire proposes to contribute partial funds for the rehabilitation of the equipment level, watch level, or lantern level, after further consultation with RSL. The purpose and intended outcome of this mitigation measure would be to assist in the preservation of the historic property. Empire will be responsible for the agreed-upon funding and provide BOEM documentation of such funding.

4.1.3 West Bank Light Station (NR No. 06001230)

Empire and Tetra Tech engaged the owner of West Bank Light Station in 2021 in discussions regarding the Project and its potential impacts to the resource. Subsequent to this engagement, the resource was purchased by RSL, which now administers both Romer Shoal Light Station and West Bank Light Station. Discussions revealed a range of structural problems with the resource, including damage suffered during Hurricane Sandy in 2012.

Empire will fund an engineering survey of the West Bank Light Station that would identify and prioritize structural deficiencies in the resource. The survey, to be undertaken by a Professional Engineer, would support the conception, planning, design, construction, and maintenance of a rehabilitation plan for the light station. The survey report will be provided to RSL and to BOEM.

Empire will be responsible for funding and implementation of the mitigation measure.

4.2 Parks

- Jacob Riis Park Historic District (NR No. 81000081)
- Jones Beach State Park/Jones Beach State Park, Causeway and Parkway System (NR No. 05000358)
- Gilgo State Park (CRIS No. 10301.000084)
- Robert Moses State Park (CRIS No. 10305.001592)

The four New York State Park resources are NRHP-listed (Jacob Riis and Jones Beach), NRHP-eligible (Robert Moses), or recommended NRHP eligible (Gilgo) under Criterion A for their association with the development of public-access seaside recreation during the interwar and post-Second World War periods, and under Criterion C as notable examples of seaside recreational architecture. Empire will sponsor the creation and installation of waysides (interpretive signage) at the four parks. The purpose and intended outcome of this mitigation measure would be to provide a mitigation for adverse effects that would benefit the public. Waysides are a commonly used interpretive tool that are ubiquitous to natural and historic sites. They are relatively low-cost, can be fashioned of highly durable materials with limited maintenance needs, and would be accessible to most park visitors. Empire will work with the National Park Service and the New York State Office of Parks, Recreation, and Historic Preservation to design signage along heavily trafficked areas and ocean front pathways to educate visitors on the historic landscapes and buildings that surround them. Waysides might discuss the intersection of seaside recreation, tourism, climate change, and historic preservation as it relates to the Project and to the individual parks. The New York Office of Parks, Recreation and Historic Preservation (OPRHP)

does not have specific guidelines for the design or installation of waysides, though its regulations acknowledge that eligible development projects in New York State Parks include "development and installation of interpretive, recreational or theme-related facilities, areas, greenways, trail systems, *exhibits and signage* and associated projects" (OPRHP Regulations: §9 NYCRR Title 9, Subtitle I, Part 434.1(d)(4)). NPS has an in-depth guide to wayside creation which can be found on its website.[3]

Empire will be responsible for funding and implementation of the proposed mitigation measures.

4.3 Historic Residential Communities or Houses

- Ocean Grove Camp Meeting Association Historic District (NR No. 76001170)

In 2021, Ocean Grove Camp Meeting Association (OGCMA) was amenable to in-depth engagement with Empire and Tetra Tech on the topic of potential mitigation. These discussions led to a signed Memorandum of Understanding (MOU) between OGMCA and EOW, dated July 13, 2021, whose purpose was "to collaborate on a potential mitigation solution with regards to the potential for indirect effects on the Ocean Grove Camp Meeting Association Historic District associated with the visibility of [the Project]." OGCMA presented a proposal to Empire to mitigate the expected visual impacts by funding "an aesthetically appealing fitness path to bolster community opportunities for outdoor recreation" and was able to argue a nexus between preserving clean air, outdoor exercise, improved pedestrian safety, and Ocean Grove's historic responsibility to have a peaceful beachfront viewshed.

Empire proposes to fund, at least in part, the installation of a fitness lane west of the extant Ocean Grove boardwalk. The purpose and intended outcome of this mitigation measure would be to provide a mitigation for adverse effects that would benefit and satisfy the local interested parties and overall community. Empire will be responsible for the agreed-upon funding and provide BOEM documentation of such funding.

- Allenhurst Residential Historic District (NR No. 10000353)
- Water Witch (Monmouth Hills) Historic District (NR No. 04000147)
- Point O'Woods Historic District (CRIS No. 10302.003470)

Mitigation of adverse effects to the three residential historic districts would include conducting background research into the historic appearance of the four residential historic districts during their respective periods of significance, with a particular focus on the historic landscape. The purpose and intended outcome of this mitigation measure would be to provide a permanent historical record related to the historic properties that are much appreciated by the local communities. The identification of historic landscapes as a research discipline derives from many sources, including landscape archaeology, the Beautification Movement of the early twentieth century, and late twentieth century environmentalism, among others. The restoration of historic landscape features, such as paths, hedges, plantings, and benches, is an appropriate approach to mitigate adverse effects on historic districts. Research would include but not be limited to inspection of documents maintained by local libraries, historical societies, state archives, and the administrative or municipal offices of the individual historic districts. The result of the research and submittals will be provided to these repositories for use in disseminating this historical information to the public. Empire proposes to work in conjunction with local historical societies or educational institutions to develop and sponsor the creation of walking tours highlighting the history of the area. The purpose and intended outcome of this mitigation measure would be to provide a mitigation that will benefit the local community and visitors to the communities. The tours would focus on the architecture and architects who designed the notable buildings as well as the intersections of tourism,

[3] https://www.nps.gov/subjects/hfc/upload/Wayside-Guide-First-Edition.pdf.

environmentalism, and preservation. In locations where entities already have a system of robust tours, Empire proposes to subsidize paid admission to these tours, making historical information more accessible to a wider public. In addition, Empire could provide funding to make walking tour documentation such as scripts or recordings, available online to further promote accessibility. Audio accompaniments have long been a component of self-guided museum tours. In much the same way, a walking tour of a historic district might utilize a smart device or mobile app with QR codes to activate podcast-like talks on cultural and architectural histories, climate change, or other relevant topic. An example of an audio-based project that features the town of La Crosse, Wisconsin can be used as a model.[4] Online transcripts and maps would make the tour accessible to non-local and hearing-impaired visitors.

Empire will be responsible for funding and implementation of the proposed mitigation measures.

- Carrington House – Fire Island National Seashore (NR No. 13001057)

Empire proposes to sponsor HABS/HAER documentation of the Carrington House. The purpose and intended outcome of this mitigation measure would be to provide permanent documentation of the historic property that will benefit the interested local community. The purpose and intended outcome of this mitigation measure would be to document the current conditions of the historic property and its setting. As conducted by a Secretary of the Interior-qualified architectural historian, this type of documentation can be a useful tool to identify preservation-related issues for agencies and stakeholders. SHPOs commonly require HABS/HAER recordation to fulfill Section 106 compliance. Empire will provide the HABS/HAER documentation to the National Park Service, local libraries, and to BOEM.

Empire will be responsible for funding and implementation of the proposed mitigation measure.

4.4 Beach Clubs

4.4.1 Silver Gull Beach Club Historic District – Gateway National Recreation Area (CRIS No. 08101.012423)

The management of the Silver Gull Beach Club declined to engage with Empire regarding potential project effects and subsequent mitigation. Empire proposes to sponsor formal nomination of the historic district to the NRHP and HABS/HAER documentation of the proposed historic district. The purpose and intended outcome of this mitigation measure would be to provide permanent documentation of the historic property that will benefit the interested local community. The nomination of Silver Gull Beach Club Historic District would be an important step in documenting and preserving this resource, which sustained significant damage from Hurricane Sandy. As a seaside community, its relationship to the Atlantic Ocean is a defining characteristic of the resource's historic significance. Tying this relationship to the effects of sea level rise and climate change highlights the benefits of offshore wind toward the achievement of New York State's goal of net-zero carbon emissions by 2050. Empire will provide the HABS/HAER documentation to the management of the Silver Gull Beach Club, local libraries, and to BOEM.

Empire will be responsible for funding and implementation of the proposed mitigation measure.

[4] https://www.hearherelacrosse.org/about/

4.4.2 Breezy Point Surf Club Historic District – Gateway National Recreation Area (CRIS No. 08101.011499)

Empire proposes to sponsor formal nomination of the historic district to the NRHP and HABS/HAER documentation of the proposed historic district. The purpose and intended outcome of this mitigation measure would be to provide permanent documentation of the historic property that will benefit the interested local community. The nomination of Breezy Point Surf Club Historic District would be an important step in documenting and preserving this resource. As a seaside community, its relationship to the Atlantic Ocean is a defining characteristic of the resource's historic significance. Tying this relationship to the effects of sea level rise and climate change highlights the benefits of offshore wind toward the achievement of New York State's goal of net-zero carbon emissions by 2050. Empire will provide the HABS/HAER documentation to the management of the Breezy Point Surf Club, local libraries, and to BOEM.

Empire will be responsible for funding and implementation of the proposed mitigation measure.

4.5 Life Saving Station

4.5.1 Fort Hancock U.S. Life Saving Station – Gateway National Recreation Area (NR No. 81000080)

Empire proposes to sponsor HABS/HAER documentation of the Fort Hancock U.S. Life Saving Station. The purpose and intended outcome of this mitigation measure would be to provide permanent documentation of the historic property that will benefit the interested local community. The purpose and intended outcome of this mitigation measure would be to document the current conditions of the historic property and its setting. As conducted by a Secretary of the Interior-qualified architectural historian, this type of documentation can be a useful tool to identify preservation-related issues for agencies and stakeholders. SHPOs commonly require HABS/HAER recordation to fulfill Section 106 compliance. Empire will provide the HABS/HAER documentation to the National Park Service, local libraries, and to BOEM.

Empire will be responsible for funding and implementation of the proposed mitigation measure.

5. IMPLEMENTATION

Upon approval of the mitigation measures outlined in this HPTP by BOEM and the consulting parties, Memoranda of Agreement (MOA) will be developed. Once agreed upon by BOEM, SHPOs and the consulting parties, the approved measures will be published by BOEM as part of the Project Record of Decision (ROD). Once the MOAs are negotiated and signed and following the public comment period, BOEM will consider responses. If needed, the HPTP will be modified in response to input from BOEM, SHPOs, and consulting parties. Once the MOAs finalized and signed, Empire will begin implementation within 2 years.

5.1 Schedule

The timeline for implementation of the mitigation measures will be determined in consultation with consulting parties based on the agreed upon mitigation measures described in the final version of this HPTP. This HPTP will be reviewed by and further developed in consultation with consulting parties as part of BOEM's NHPA Section 106 consultation and NEPA review schedule for the Empire Wind Project.

The final version of this HPTP included in the FEIS will include a timeline for implementation of the final/agreed upon mitigation measures described herein. It is anticipated that the mitigation measure identified in Sections 5.0 and 6.0 will commence within 2 years of ROD issuance or execution of a project-specific MOA

unless otherwise agreed by the consulting parties and accepted by BOEM. Empire assumes that the proposed scope of work will be completed within 5 years of ROD issuance or execution of the MOA, unless a different timeline is agreed upon by consulting parties and accepted by BOEM.

5.2 Roles and Responsibilities

This section presents the roles and responsibilities of each party.

5.2.1 Bureau of Ocean Energy Management

- BOEM remains responsible for making all federal decisions and determining compliance with Section 106 of the NHPA;
- BOEM, in consultation with the Participating Parties, will ensure that mitigation measures adequately resolve adverse effects, consistent with the NHPA;
- Work with Empire, the SHPO, the ACHP and other Participating Parties using the HPTP framework;
- Review and provide feedback on draft HPTP;
- BOEM must accept the final HPTP before Empire may commence any of the actions included in the HPTP;
- BOEM will be responsible for sharing the annual summary report with consulting parties;
- BOEM is responsible for consultation related to dispute resolution; and
- If parties cannot reach concurrence, consult with ACHP and non-concurring party(s) to make final decision.

5.2.2 State Historic Preservation Office(s)

- Work with BOEM, Empire, the ACHP and other Participating Parties using the HPTP framework; and
- Review and provide feedback on draft HPTPs.

5.2.3 Advisory Council on Historic Preservation (if applicable)

- Work with BOEM, Empire, the SHPO, and other Participating Parties using the HPTP framework; and
- If parties cannot reach concurrence, consult with BOEM and non-concurring parties to make final decision.

5.2.4 Empire

- Empire will be responsible for funding the mitigation measures as required in the ROD and/or MOA and the final HPTP;
- Work with BOEM, the SHPO, the ACHP and other Participating Parties using the HPTP framework;
- Considering the comments provided by the Participating Parties in the development of this HPTP;
- Funding the mitigation measures specified in Section 4;
- Completion of the scope/s of work in Section 4;
- Providing the Documentation in Section 4 to the Participating Parties for review and comment; and
- Annual Reporting to BOEM.

5.2.5 Consulting Parties

Empire does not anticipate participation by any NHPA Section 106 consulting parties other than those listed in Sections 5.2.1 through 5.2.4 and those who own or manage the affected properties detailed above. If BOEM determines additional consulting parties will participate in this plan, the plan will be updated to include those parties.

5.2.6 Participating Party Consultation

Participating Parties will be provided opportunity for review and comment on the HPTP concurrent with BOEM's anticipated NHPA Section 106 review schedule for the Project (see Section 5.1) Empire will provide this draft HPTP to BOEM for inclusion in the DEIS for review by participating parties as part of BOEM's NHPA Section 106 review to provide meaningful input on the proposed mitigation measures to resolve adverse effects to historic properties. Empire anticipates that further coordination to refine the HPTP may include meetings, conference calls, HPTP draft reviews and document exchanges, or similar means of communication of information.

5.3 Plan Completion and Reporting

Empire will prepare and, following BOEM review and approval, provide all signatories, invited signatories, and consulting parties to the MOA a summary report detailing work undertaken pursuant to the MOA consistent with any MOA stipulation measures relative to monitoring and reporting, including the mitigation measures outlined in the final HPTP. This report will be prepared, reviewed, and distributed by January 31 of each year in which MOA/HPTP activities are taking place, and summarize the work undertaken during the previous year. Empire will continue to generate and distribute this yearly report until all activities required under the MOA are completed.

6. REFERENCES

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ATTACHMENT 5 – SECTION 106 PHASED IDENTIFICATION PLAN

Empire Offshore Wind: Empire Wind Project

(EW 1 and EW 2)

Section 106 Phased Identification Plan

Prepared for:

Empire Offshore Wind LLC
600 Washington Blvd, Suite 800
Stamford, CT 06901, USA

Prepared by:

10 Post Office Square, Suite 1100
Boston, MA 02109

November 2022

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ACRONYMS AND ABBREVIATIONS

APE	Area of Potential Effect
AVEHAP	Analysis of Visual Effects to Historic and Architectural Properties
BOEM	Bureau of Ocean Energy Management
CFR	Code of Federal Regulations
COP	Construction and Operations Plan
Empire	Empire Offshore Wind LLC
EW	Empire Wind
FEMA	Federal Emergency Management Agency
ft	foot
GPS	global positioning system
HRVEA	Historic Resources Visual Effects Assessment
km	kilometer
Lease Area	designated Renewable Energy Lease Area OCS-A 0512
mi	mile
NEPA	National Environmental Policy Act
NHL	National Historic Landmark
NHPA	National Historic Preservation Act
NJ HPO	New Jersey Historic Preservation Office
nm	nautical mile
NPS	National Park Service
NRHP	National Register of Historic Places
NYSERDA	New York State Energy Research and Development Authority
NY SHPO	New York State Historic Preservation Office
O&M	Operations and Maintenance
OCS	Outer Continental Shelf
PAPE	Preliminary APE
POI	Point of Interconnection
Project	The offshore wind project for OCS A-0512 proposed by Empire Offshore Wind LLC consisting of Empire Wind 1 (EW 1) and Empire Wind 2 (EW 2).
SHPO	State Historic Preservation Office
Tetra Tech	Tetra Tech, Inc.
U.S.C.	United States Code

1. INTRODUCTION

Empire Offshore Wind LLC[1] (Empire) is proposing to develop the Empire Offshore Wind: Empire Wind (EW 1 and EW 2) Project. The Project consists of an offshore wind farm to be located in the designated U.S. Bureau of Ocean Energy Management (BOEM) Renewable Energy Lease Area Outer Continental Shelf (OCS)-A 0512 (Lease Area), as well as submarine export cables and onshore ancillary facilities required to convey power produced by the wind farm to the regional electric transmission system. The Lease Area is approximately 14 statute miles (mi) (12 nautical miles [nm], 23 kilometers [km])[2] south of Long Island, New York, and 19.5 mi (16.9 nm, 31.4 km) east of Long Branch, New Jersey (Figure 1).

In support of the Project Construction and Operations Plan (COP) submitted to BOEM, Tetra Tech, Inc. (Tetra Tech) was contracted to complete an Analysis of Visual Effects to Historic and Architectural Properties (AVEHAP), which can also be called a Historic Resources Visual Effects Assessment (HRVEA). The purpose of the AVEHAP is to assess the potential visual effects of the construction and operations of the Project from above-ground historic properties (e.g., cultural properties, districts, buildings, structures, or objects that are 50 years old or older and are listed or eligible for listing in the National Register of Historic Places [NRHP]) that will have views or partial views of Project components. For the purposes of this report, the historic properties of concern are of an architectural or landscape character and will be referred to herein as architectural properties. The Area of Potential Effect (APE) will be defined by BOEM through the Section 106 process; therefore, the AVEHAP and this plan describes the preliminary APE (PAPE), as identified by Tetra Tech.

Section 106 regulations (36 Code of Federal Regulations [CFR] § 800.4 (b)(2)) provide for phased identification of historic properties. Typically, phased identification is implemented for projects where alternatives under consideration consist of corridors, large land areas, or where access to properties is restricted. Phasing Section 106 adjusts the standard Section 106 timeline so that identification and evaluation of historic properties may be completed after completing an environmental review of the project, but before project implementation occurs. As described in this plan, phased identification will occur for select areas of the APE prior to issuance of the Record of Decision or Memorandum of Agreement. These properties were not previously assessed because the absence of street level views of the Project from these vicinities suggested that an assessment was not necessary.

1.1 Description of the Undertaking and Project Design Envelope

The Project Design Envelope (PDE) is an approach to permitting that "…allows a project description to be broadly defined, within several agreed parameters, for the purposes of a permit application… the PDE identifies the range of potential project design values for all relevant components of a development" (Rowe et. al. 2017). Empire proposes to develop the Lease Area in two wind farms. EW 1 and EW 2 will be electrically isolated and independent from each other. The Project includes the construction of up to 147 wind turbines (the total number across both EW 1 and EW 2) at up to 174 locations, two offshore substations, and foundations for the wind turbines and offshore substations within the Lease Area (see Table 1). The wind turbines will be connected via interarray cables to the offshore substations. The offshore substations will collect the power generated by the wind turbines and transport it to the Project's onshore substations via submarine export cables.

[1] Empire is a direct, wholly owned subsidiary of Empire Offshore Wind Holdings LLC ("Empire HoldCo"). Empire HoldCo is jointly owned by (1) an indirect, wholly owned subsidiary of Equinor ASA (collectively, "Equinor"); and (2) an indirect, wholly owned subsidiary of BP Wind Energy North America In. ("BP"). BP acquired ownership interest in Empire HoldCo in a transaction that closed on January 29, 2021.

[2] Distances are provided as statute miles (mi) or nautical miles (nm) as appropriate, with kilometers (km) in parentheses. For reference, 1 mi equals approximately 0.87 nm or 1.6 km.

The onshore substations will transmit the energy generated for connection to the Points of Interconnection (POIs) in New York. An overview of the offshore Project facility locations is provided in Figure 1. The interarray cables and submarine export cables will be located subsea; therefore, these will not be visible components of the Project and were not assessed as part of the AVEHAP.

Table 1. Summary of the Parameters for the Representative Wind Turbine

Parameter	Representative Wind Turbine
Total Number	147
Hub Height above Highest Astronomical Tide (HAT)	525 ft (160 m)
Upper Blade Tip above HAT	951 ft (290 m)
Lower Blade Tip above HAT	85 ft (26 m) a/
Rotor Diameter	853 ft (260 m)

a/ For this parameter, the minimum value represents the maximum Project Design Envelope value.

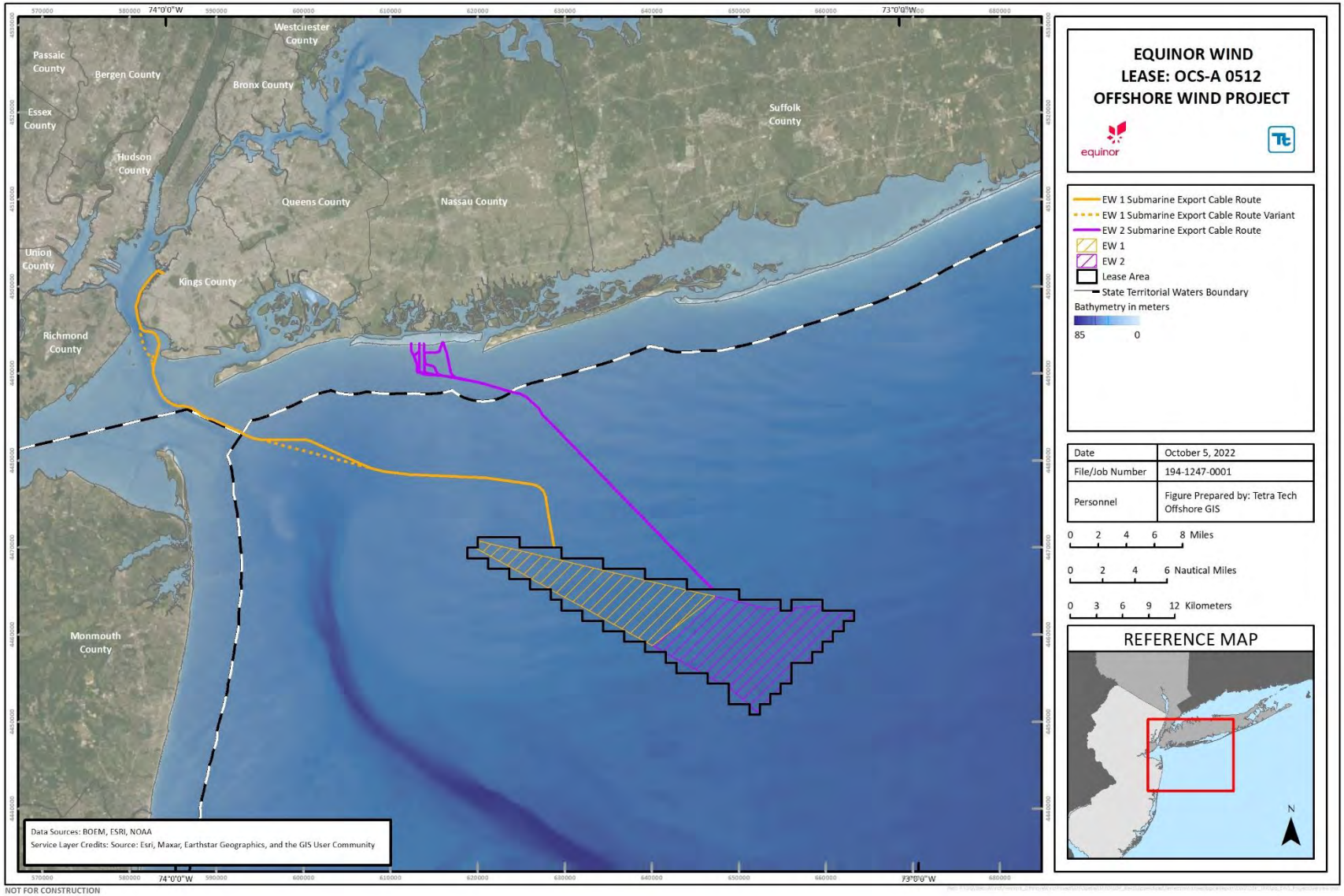

Figure 1. Project Area

1.2 Federal, State, and Local Permits

Several federal, state, and local agencies have regulatory authority over the Project based on the location of the different Project components. The wind turbines and offshore substations are to be located entirely within federal waters of the United States and the OCS and are under the jurisdiction of BOEM. Onshore facilities, including the onshore substations, will be located in Brooklyn, New York (EW 1) and the City of Long Beach and/or Town of Hempstead, New York (EW 2).

The Project is subject to regulation by BOEM under provisions of the OCS Renewable Energy Program authorized by the Energy Policy Act of 2005 (42 United States Code [U.S.C.] §§13201 *et seq.*). Assessments of effects on historic architectural resources are required to support BOEM's National Environmental Policy Act (NEPA) review process and the review performed under Section 106 of the National Historic Preservation Act (NHPA; 54 U.S.C. § 306108). Under Section 110 of the NHPA (54 U.S.C. 306107), federal agencies assume responsibility for the preservation of historic properties or resources that fall under the agency's jurisdiction, Prior to approving any federal undertaking that may directly adversely affect a National Historic Landmark (NHL), the responsible federal agency must minimize harm to the landmark and afford the Advisory Council on Historic Preservation an opportunity to comment on the undertaking.

In the COP guidelines, BOEM provides recommended approaches for assessing historic architectural resources during the permitting phase of offshore wind projects (Rowe et. al. 2017). BOEM directs that an AVEHAP or HRVEA should be conducted in a manner acceptable to the relevant State Historic Preservation Office (SHPO) for the state with the onshore viewshed. For this Project, the affected areas fall within the states of New York and New Jersey.

1.3 Agency and Public Outreach

In 2016, BOEM executed a Programmatic Agreement with the SHPOs of New York and New Jersey, the Shinnecock Indian Nation, and the Advisory Council on Historic Preservation to formalize agency jurisdiction and coordination for the review of offshore renewable energy development regarding cultural resources (BOEM 2016). The Programmatic Agreement recognized that issuing renewable energy leases on the OCS constituted an undertaking subject to Section 106 of the NHPA. BOEM, as the lead federal agency in this process, has authority to initiate consultations with the SHPOs, and to consult with interested Native American Tribes.

The scope and approach to the AVEHAP were supported through engagement with federal and state agencies. Empire met with BOEM and the National Park Service (NPS) on August 29, 2018, to discuss approaches to the historic architectural survey and visual impact analysis. Empire initiated discussions with the New York State Historic Preservation Office (NY SHPO) and with the New Jersey Historic Preservation Office (NJ HPO) via letters dated December 13, 2018[3]. The NY SHPO concurred with the approach in a letter dated December 27, 2018, and NJ HPO concurred with the approach in a letter dated January 8, 2019. As the Project evolved, Empire provided NY SHPO with a Project Update letter on August 22, 2019, and met with NY SHPO on September 26, 2019, to describe the most recent preferred locations for the EW 1 and EW 2 onshore electrical systems. Empire provided NJ HPO with a Project update via videoconference on September 24, 2020. Empire also provided a Project update letter to the NY SHPO, introducing the additional EW 2 onshore export and interconnection cable routes and EW 2 Onshore Substation A site in April 2021. NY SHPO confirmed receipt of the update and had no comments at the time. Empire provided a supplemental NY Project update letter

[3] The area encompassed by the EW 2 Onshore Substation C site was included in this original submission to NY SHPO as part of the onshore export cable route.

introducing an additional landfall site (Landfall E) and additional EW 2 onshore export and interconnection cable routes on May 10, 2022. Empire continues to engage with stakeholders with regards to potential impacts to architectural properties.

Through consultations with Empire, BOEM determined a Section 106 Phased Identification Plan was appropriate for the Project, subsequent to BOEM's initial review of the AVEHAP. This Section 106 Phased Identification Plan serves as a process document detailing the steps Empire will take to complete the required cultural resources surveys following issuance of the Draft Environmental Impact Statement (DEIS) by BOEM.

2. PRELIMINARY AREA OF POTENTIAL EFFECTS (PAPE)

The Offshore and Onshore AVEHAP PAPEs are those areas, on land or sea, where views of the Project's components would be visible. As defined by 36 CFR § 800.16(d), the APE is "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 APE will be defined by BOEM through the Section 106 process; therefore, the Project's COP describes the PAPE, as identified by Tetra Tech. The process of defining the PAPEs involved modeling the preliminary viewshed.

Based on discussions with BOEM, the modeled AVEHAP Offshore viewshed was delimited by a 40-mi (64-km) buffer, or Study Area, around the Lease Area. This AVEHAP Offshore Study Area consists of western Long Island including all of Kings, Queens, Bronx, Richmond, and Nassau counties and the western half of Suffolk County, and the southern portion of Westchester County. In New Jersey, the Study Area encompasses all of Hudson County, most of Monmouth County, northeastern Ocean County, and portions of Bergen, Passaic, Essex, Union, and Middlesex counties. The Offshore AVEHAP PAPE was developed within the Study Area, as detailed in the AVEHAP (Empire Wind Project COP Appendix Z) and summarized below.

2.1 Offshore AVEHAP PAPE

An initial analysis was conducted using ESRI ArcGIS Pro 2.2.0 software with the Spatial Analyst extension to process 10-meter Digital Elevation Models based on the National Elevation Dataset and height zones of visible components of the wind turbines (hub height and maximum blade tip). The initial topographic viewshed assumed "bare earth" conditions and was developed from wind turbine locations looking back toward land to determine areas with potential visibility. The viewshed accounted for both curvature of the earth and refraction, using the default values identified in the software.

To supplement the initial topographic viewshed analysis, a viewshed accounting for building heights and vegetation was also developed to identify areas where potential screening may be provided by buildings and vegetation. This viewshed model helped to focus inventory and field visit efforts based on existing conditions within the landscape. The viewshed model accounting for building heights and vegetation was derived using a similar process as the initial topographic viewshed described above. However, for this viewshed model, building footprints for New York City, Suffolk County, and Nassau County in New York and Monmouth County in New Jersey were incorporated into the digital elevation model to represent surface elevations. The building footprint information obtained for New York City contained building heights. Other data sources obtained did not contain building height information. For data sets that did not contain building heights, an assumed height of 17 ft (5.2 m) was used to represent a conservative height of an approximately one-story building across the building footprints. The resulting viewshed model accounting for building heights was taken to approximate the Offshore AVEHAP PAPE.

2.2 Identification of Historic Properties

Historic and architectural property data within the Study Area were acquired from the National Park Service-National Register, New York SHPO's Cultural Resource Information System, and New Jersey Historic Preservation Office's LUCY databases. A supplemental dataset of buildings with build dates of 1972 and older was acquired from the Monmouth County (New Jersey) tax parcel database. Within the Study Area, 16,515 historic and architectural properties were identified in New Jersey and 2,353 historic and architectural properties were identified in New York. All of these 18,868 properties were subjected to viewshed analysis.[4]

2.2.1 Summary of Completed Historic Property Identification to Date

Table 2 presents the counts of all historic and architectural properties identified within the viewshed, enumerated by state and NRHP status.

Table 2. Identified Historic and Architectural Properties within Offshore AVEHAP PAPE

NRHP Status	New York	New Jersey	TOTAL
National Historic Landmark	7	5	**12**
National Register Listed	325	45	**370**
National Register Eligible	117	77	**194**
Historic Districts	68	13	**81**
Contributing Resources	208	1,352	**1,560**
Unevaluated	100	513 a/	**613**
TOTAL	**825**	**2,005**	**2,830**

Note: These counts include a set of tall buildings in Manhattan that have not yet been assessed for effects.

a/ Additional unevaluated properties 50 years old or older may exist within the portions of the Offshore AVEHAP PAPE in Ocean and Middlesex counties in New Jersey. These will be evaluated through the phased identification process.

The viewshed model represents a best management practices approach to delineating the PAPE. The computer-generated viewshed is a close approximation of zones of Project visibility and is considered to conservatively define the PAPE. However, the viewshed model inherently displays some misrepresentation of actual Project views due to an imperfect rendering of existing conditions on the ground. To better understand this gap between modeled views and actual views, and to delineate areas of the PAPE that would be most likely to contain historic properties vulnerable to visual adverse effects, the AVEHAP team conducted an additional analysis. This analysis consisted of Google Earth Street View examination of Project-facing views along regularly spaced transects. These transects followed streets in New Jersey moving westward from the shoreline and in New York, generally moving northward from the shoreline. NRHP-listed eligible and unevaluated properties were used as station points along each transect with the objective of determining the most inland point along a transect that would have an ocean view, and thus, a possible Project view.

Thirty-seven transects, arrayed around the PAPE, were employed in this fashion, allowing an analytical process that would help to delineate a more realistic zone of visibility, and thus, a more accurate representation of where visual effects might occur (Table 3). Other station points examined in addition to transects were at Fort Wadsworth Historic District, Floyd Bennett Field Historic District, Fort Tilden Historic District, Fire Island

[4] As per the Programmatic Agreement regarding renewable energy activities offshore New Jersey and New York, BOEM administratively treats all potentially eligible historic properties as eligible (BOEM 2016). In the AVEHAP, any unevaluated property within the Offshore AVEHAP PAPE is treated as if it is potentially NRHP-eligible.

Lighthouse Historic District, Fort Hancock and Sandy Hook Proving Ground Historic District, and Miller Army Air Field Historic District.

Focused field visits to specific locations also occurred. An initial field visit was conducted between November 4 and November 13, 2018. An additional field visit was conducted between June 3 and June 6, 2019. The site visits and assessments were performed by a two-person team made up of a Secretary of the Interior-qualified architectural historian and a visual assessment specialist. Both team members had completed the Bureau of Land Management's Visual Resource Management training.

Table 3. Street Transects Examined for Ocean Views

New Jersey	New York
Asbury Park: 3rd Avenue, 7th Avenue, Ocean Avenue	*Coney Island*: Brighton Beach Avenue, Ocean Avenue
Avon-on-the-Sea: Garfield Avenue	*Long Beach*: Cleveland Avenue, Florida Street, Laurelton Boulevard, Lindell Boulevard, Wisconsin Street
Belmar: 9th Avenue	*Rockaway*: Rockaway Beach Boulevard, Beach 84th Street
Bradley Beach: Park Place, 2nd Avenue	*Staten Island*: Maple Terrace, Neutral Avenue, Seaview Avenue, Wiman Avenue
Deal: Roosevelt Avenue	
Highlands: Highland Avenue, Shore Drive, Navesink Avenue	
Long Branch: Atlantic Avenue, Avery Avenue, Chelsea Avenue, Park Avenue	
Monmouth Beach: Valentine Avenue	
Rumson: Rumson Avenue	
Sea Girt: Beacon Boulevard	
Spring Lake: Madison Avenue, Salem Avenue	

The modeled viewshed is an accurate, if somewhat imperfect, representation of actual Project visibility from every location within the Study Area. The light detection and ranging (LiDAR) data that the model is based on represents ground conditions at a single point in time, which may not capture new construction, tree growth, and certain intangibles of the computer-generated imagery that can lead to false positive or false-negative results. To gauge the degree of this occurrence, a sample of 157 properties along the transects listed in Table 3 was selected for street-level desktop analysis to ground-truth the modeled viewshed. This sample included 104 properties in New Jersey and 53 properties in New York, comprising six NHLs, 26 NRHP-listed properties, 31 NRHP-eligible properties, 93 unevaluated properties, and 1 non-contributing property (COP Appendix Z Attachments Z-1, Z-2, and Z-3 Historic Properties in Offshore AVEHAP PAPE). In general, this exercise confirmed the overall accuracy of the model while indicating that some individual properties within the PAPE are likely to have only partial or rooftop views. As distance from the shoreline increases, the predominant Project view becomes those from rooftops or upper stories in tall buildings. Increased distance also lessens direct associations with maritime settings and introduces previously altered foreground viewsheds that represent only small, incremental change compared with existing conditions. The ground-truthing indicated that the portion of the PAPE with the clearest views of the ocean in the direction of the Project tends to extend from the shoreline inland a distance of approximately 0.3 to 0.5 mi (0.5 to 0.8 km), depending on location. Sections of the Ronkonkoma and Harbor Hill terminal moraines on Long Island, and the bedrock-cored hills

of Washington Heights in Manhattan and High Bridge section in the Bronx, have been identified as containing historic and architectural properties with attenuated, or partial Project views.

Coastal New York and New Jersey are areas with extensive historical value and a tradition of historical commemoration resulting in numerous cultural resources that are listed in and determined to be eligible for the NRHP (i.e., historic properties), some within the recommended Offshore and Onshore PAPEs. The AVEHAP focuses on historic properties and architectural properties within the Offshore and Onshore PAPEs that may be affected by the construction and operations of the Project. Each AVEHAP PAPE is defined as the area in which there may be visibility of the Project. Historic properties are defined as properties listed on the NRHP or determined NRHP-eligible. Architectural property is the term used here to denote an above-ground building, structure, or object, 50 years old or older, that has not been evaluated for NRHP eligibility.

The historic and architectural properties that have views of the Project within the Study Area include those situated at or near sea level in proximity to the shoreline, as well as some located at a distance from the ocean shoreline and consisting of tall buildings or structures situated on elevated terrain. The Study Area contains elevated terrain in several locales, including the Atlantic (Navesink) Highlands in Monmouth County, New Jersey, the Ronkonkoma and Harbor Hill moraines that form the east-west ridge of hills on Long Island, and bedrock formations in northern Manhattan. Historic and architectural properties with tall elevations or located on elevated terrain would possess somewhat strongly attenuated Project views where integrity of the foreground historic viewshed is already substantially altered such that addition of wind turbines in the background represents a small, incremental change relative to existing conditions. In contrast, properties proximal to the ocean would be likely to have views of the Project that are direct and unmediated by foreground or middleground vistas of the built-environment, vegetation, or topography. Properties proximal to the ocean, which may have unmediated views and maritime settings, would be most susceptible to adverse effects caused by view of Project construction and operations, and therefore, such properties received the focus of attention in the AVEHAP. Properties with elevated viewpoints, primarily located in Lower and midtown Manhattan, are the focus of discussion in this Phased Identification Plan. This plan also discusses other portions of the PAPE (e.g., portions of New Jersey) that contain properties that have not been assessed on an individual basis.

3. PHASED IDENTIFICATION

3.1 Scope of Phased Identification

As previously stated in Section 2, a viewshed analysis and historic properties assessment has already been completed for much of the PAPE. However, individual analysis of properties in portions of the PAPE, including Manhattan, as well as the Statue of Liberty, Monmouth County, New Jersey, and portions of Ocean and Middlesex counties, New Jersey, has yet to be completed. **Figure 2** and **Figure 3** show the properties for which identification has been completed. **Figure 4** shows an overview of which portions of the PAPE in New Jersey will be analyzed according to this Phased Identification Plan. **Attachment 1** provides 1:24,000-scale maps of the portions of the PAPE in New Jersey that will be analyzed according to this Phased Identification Plan.

The total number of parcels within the Offshore AVEHAP PAPE in New Jersey is 54,545. Therefore, an approach to filtering this population of properties is necessary to focus further effort on properties that may require individual evaluation. Tetra Tech's approach to phased identification in New Jersey will be based on an approach outlined in a Project overview letter, dated December 13, 2018, that Tetra Tech submitted to the NJ

HPO. This letter summarized the approaches to be taken for marine archaeological, terrestrial archaeological, and historic properties assessments. As described, the approach for historic properties visual effects assessment assumed that:

> "The actual APE for historic architecture is anticipated to be within 0.5 km (0.3 mile) of shorelines within the Visual Study Area [then, a 35-mi radius from the Lease Area; currently a 40-mi radius] where at least the hub of the turbines and above are visible. Properties most likely to be affected within the APE would likely comprise aboveground cultural resources listed in, eligible to, or potentially eligible to the NRHP that are associated with maritime settings. These cultural resources would be the focus of inventory and evaluation by the team's architectural historian."

Subsequent ground-truthing of the viewshed model, described above in Sections 2.1 and 2.2, indicated that actual Project visibility may extend further than 0.3 mi (0.5 km) in some locations, to approximately 0.5 mi (0.8 km) landward from the shoreline. Therefore, the geographic scope of phased identification will be broadened to match this approximate zone of actual Project views and to capture historic properties situated on elevated terrain in the Atlantic Highlands area of Monmouth County (**Figure 4**).

The NJ HPO LUCY database was queried to identify historic and architectural properties that have already been inventoried. Data acquired from LUCY identified 6,087 historic properties within 0.5 mi of shore, of which 751 properties are within the PAPE. The breakdown of properties from LUCY by NRHP status includes:

- 1 National Historic Landmark (Twin Lights)
- 1 National Historic Landmark District (Fort Hancock and Sandy Hook Proving Ground Historic District)
- 15 Listed properties
- 428 Listed, Contributing Resources
- 12 Eligible properties
- 75 Eligible, Contributing Resources
- 159 Identified Unevaluated properties

Parcel data from New Jersey county databases were also queried to identify unevaluated properties that may potentially be eligible for listing on the NRHP. Acquisition of Monmouth County parcel data from the Monmouth County Open Public Records Search System (OPRS) identified 19,353 parcels within 0.5 mi of shore that had build dates of 1972 or older, or, where build dates were blank, were assumed to be 50 years old or older; of these parcels in Monmouth County, 5,416 are located within the PAPE (**Table 4**). Middlesex County parcel data also available from OPRS identified 2,961 parcels within the PAPE that had build dates of 1972 or older or where build dates were blank, 813 of which are within 0.5 mi of shore. Ocean County parcel data identified 7,385 parcels within the PAPE that had build dates of 1972 or older or where build dates were blank, 3,392 of which are within 0.5 mi of shore. The total number of parcels in the New Jersey portion of the PAPE within 0.5 mi of shore that had build dates of 1972 or older or where build dates were blank is 9,621 (**Table 4**). It is assumed that the properties identified in the LUCY database are also included in the county parcel data.

Table 4. Counts of Parcels in New Jersey Considered for Analysis through Phased Identification

Category	Count
Parcels within the Offshore AVEHAP PAPE in New Jersey within 0.5 miles of shore and 50 years old or older in Monmouth County	**5,416**
Parcels within the Offshore AVEHAP PAPE in New Jersey within 0.5 miles of shore and 50 years old or older in Middlesex County	**813**
Parcels within the Offshore AVEHAP PAPE in New Jersey within 0.5 miles of shore and 50 years old or older in Ocean County	**3,392**
TOTAL	**9,621**

Those parcels in New Jersey that could be characterized as associated with maritime settings constitute a subset of the 9,621 parcels within 0.5 miles of the shore and 50 years old or older within the PAPE. Properties may be described as exhibiting correspondences with maritime and ocean settings, themes, locations, materials, associations, and feelings that may contribute to character-defining features that endow a resource with historic significance. Those historic properties with both Project views and a direct relationship to the ocean littoral, or maritime activities and events during historically significant periods, are susceptible to visual adverse effects caused by Project construction and operations.

Empire will identify the subset of parcels associated with a maritime setting for further evaluation (see Section 3.2). Criteria for determining the presence of a maritime setting include proximity and orientation to the shoreline, association with maritime themes, locations and materials, history or association with maritime activities or events, and/or direct relationship to ocean littoral or maritime activities and events. Based on a preliminary examination of current aerial imagery it is estimated that approximately 1,000 of the parcels 50 years old and older that are located within the PAPE and 0.5 miles from the shore will have a maritime setting.

The number of recorded historic properties with maritime settings is estimated around several hundred, of which many would be contributing resources to historic districts. Generally, contributing resources to districts would not be individually documented for eligibility status or for assessment of effects, but would be subsumed under an evaluation of each district as a whole.

The precise number of properties with maritime settings in New Jersey requiring an assessment for potential effects arising from Project construction and operation, including intensive level survey, will be determined through preliminary field and desktop verification, as described in Section 3.2.

In the Borough of Manhattan, New York City, the modeled viewshed indicates that 149 listed or eligible historic properties will have a view of the Project (**Figure 5**). Street-level views of the Atlantic Ocean from Manhattan are completely screened by the intervening landmass of Brooklyn, in particular the ridges of the Ronkonkoma terminal moraine, and thus would be considered outside the PAPE. However, Manhattan's spatial dimension is also vertical, and Project views are anticipated, and are modeled to be present, from elevated perspectives among the many tall buildings that are clustered in lower and midtown Manhattan, as well as from some locations as far as Washington Heights in northern Manhattan. Given the number and density of unevaluated architectural properties in Manhattan, Tetra Tech recommends that only previously recorded historic properties be included in any survey to be undertaken there. While the PAPE encompasses many unevaluated (and therefore, potentially eligible) properties, it appears unlikely that the Project would result in adverse effects to any Manhattan building or structure because, in general, their character-defining features are not tied to an area of significance, such as seaside recreation or maritime history, that would be altered or diminished by the

introduction of the Project into their historic viewsheds. The methods for evaluating these 149 historic properties in Manhattan are described in Section 3.2.

The Statue of Liberty will also receive an individual assessment of effects, per a request from the National Park Service.

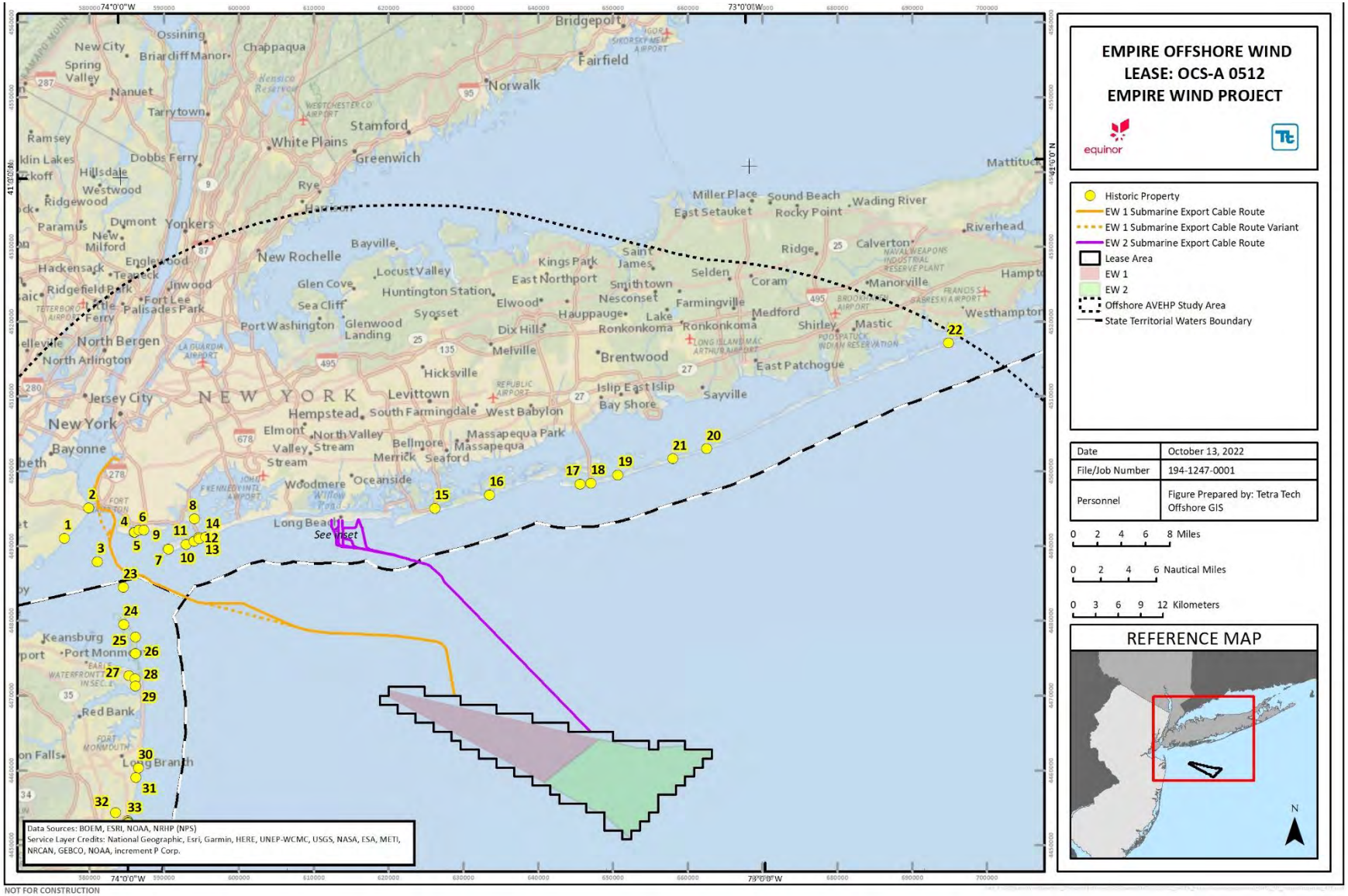

Figure 2. Identified Historic and Architectural Properties within the Offshore AVEHAP PAPE in New York

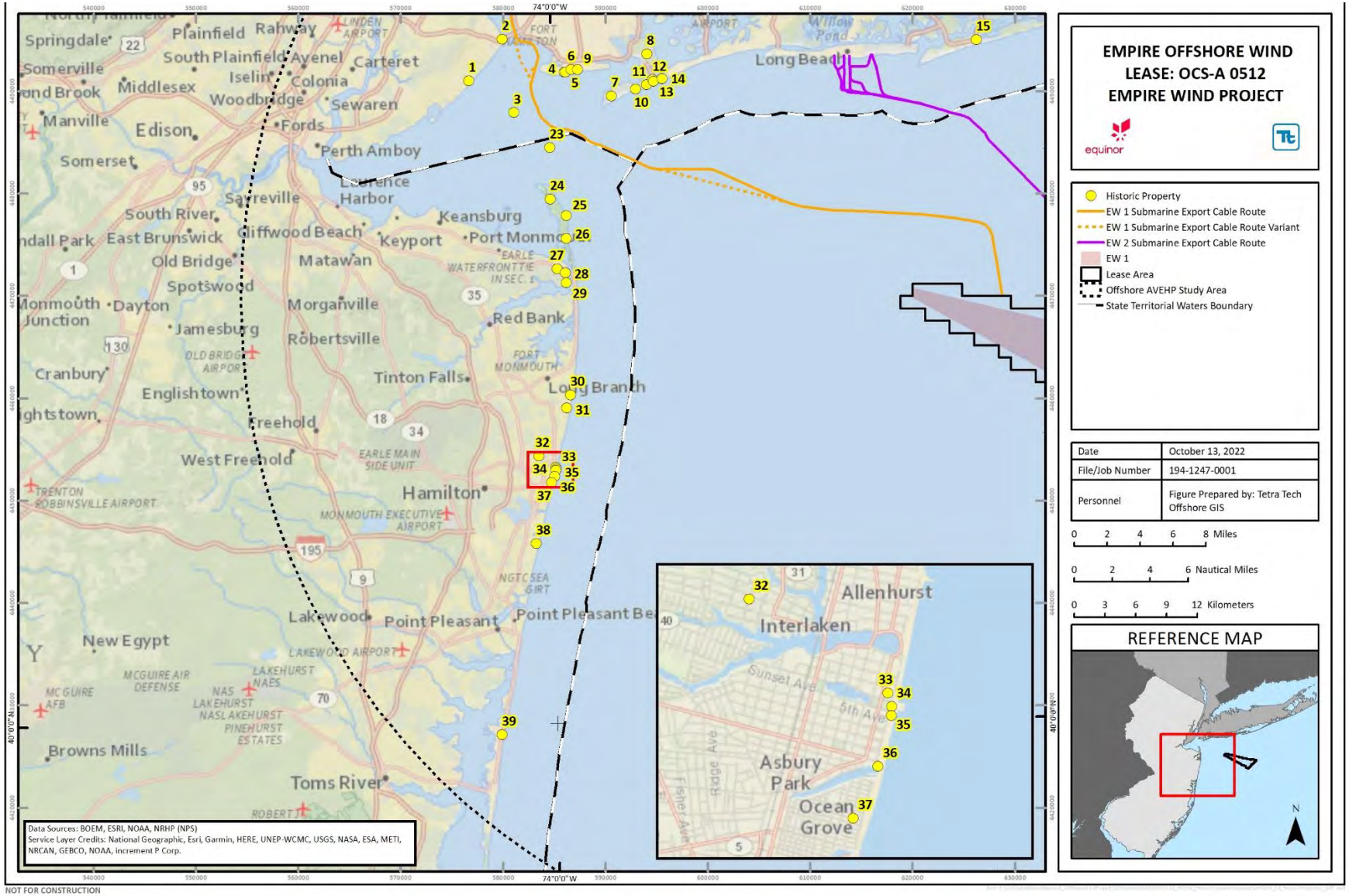

Figure 3. Identified Historic and Architectural Properties within the Offshore AVEHAP PAPE in New Jersey

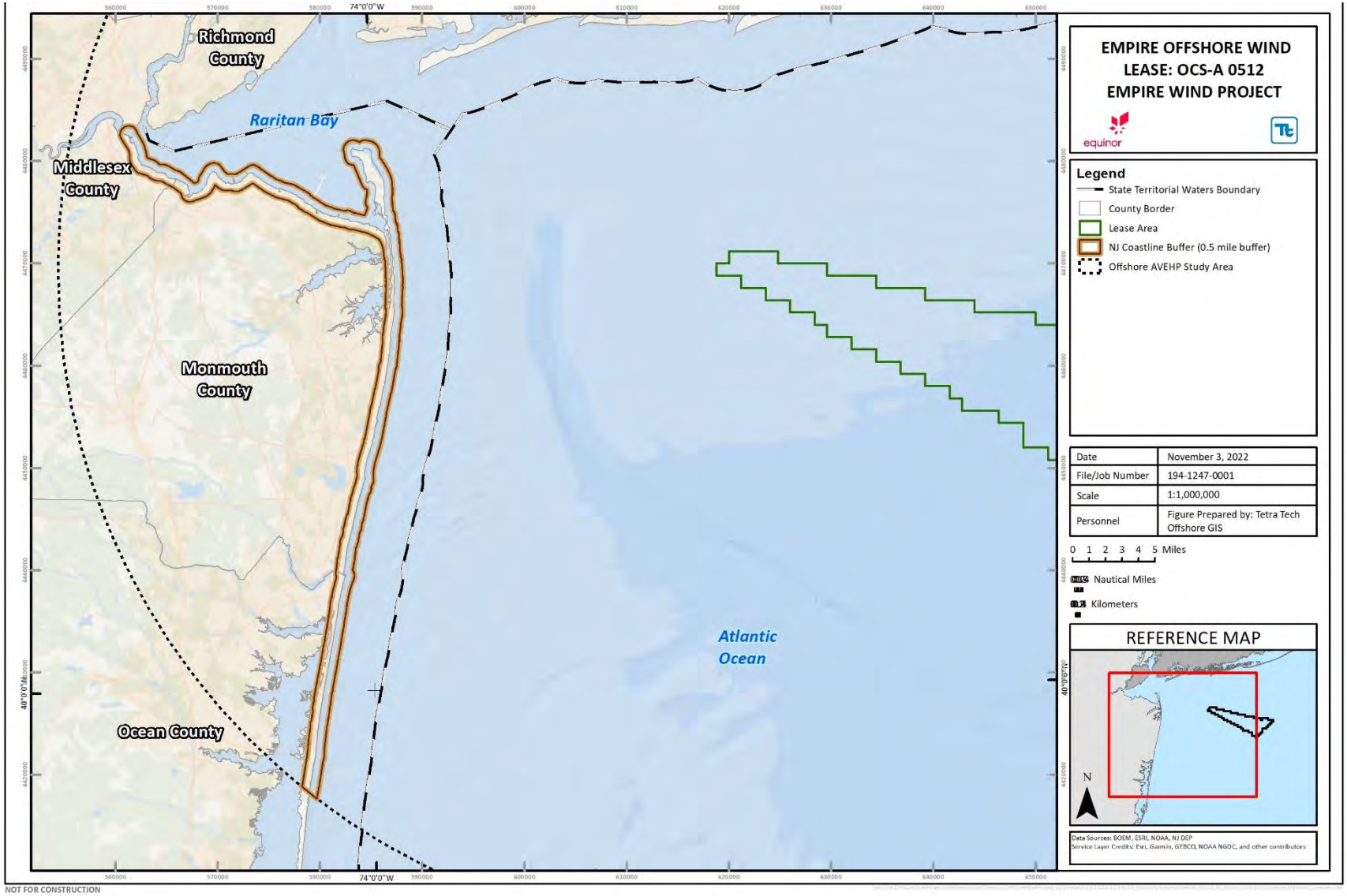

Figure 4. Overview of Portions of the PAPE in New Jersey to be Analyzed through Phased Identification

Figure 5. Portions of the PAPE in Manhattan to be Analyzed through Phased Identification

3.2 Additional Studies

To accurately determine the scale of adverse effects (if any) to the properties not yet assessed, an additional historic resource survey is required. The survey will be undertaken in accordance with:

- BOEM's Guidelines for Providing Archaeological and Historic Property Information Pursuant to 30 CFR Part 585 (BOEM 2020);
- The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation, as amended (48 Federal Register 44716);
- The New York State Historic Preservation Act of 1980 (Section 14.09), for properties in New York; and
- The NJ HPO Guidelines for Architectural Survey, for properties in New Jersey.

Under this Phased Identification Plan, the survey will include a historic resources survey and additional visual impact assessment. This process will take place in several phases. Empire will coordinate with NJ HPO and NY SHPO before undertaking these additional studies.

Phase I: Preliminary Field and Desktop Verification

Empire will undertake a preliminary field and desktop verification to identify the subset of parcels associated with a maritime setting. Criteria for determining the presence of a maritime setting include proximity and orientation to the shoreline, association with maritime themes, locations and materials, history or association with maritime activities or events, and/or direct relationship to ocean littoral or maritime activities and events. A maritime setting will be determined based on a combination of desktop assessment of ocean context and proximity from publicly available imagery (e.g., Google Earth aerial imagery and Street View), field visits, and historical background research on the survey area and properties associated with maritime activities and events during historically significant periods. Based on a preliminary examination of current aerial imagery it is estimated that approximately 1,000 of the parcels 50 years old and older that are located within the New Jersey portion of the PAPE within 0.5 miles from the shore will have a maritime setting, To narrow down the approximately 1,000 historic and architectural properties with maritime settings in the New Jersey portion of the PAPE within 0.5 mi of shore to a reasonable number for individual evaluation, Tetra Tech will conduct initial field visits and desktop evaluation to ground-truth the modeled viewshed and delineate locales that do not contain actual Project views. Identifying locales that can be appropriately excluded from intensive level survey because of the absence of actual Project views is expected to reduce the number of properties that will need to be surveyed at the intensive level.

Phase II: Intensive Level Surveys of PAPE

Tetra Tech will undertake intensive-level surveys of historic and architectural properties associated with maritime settings occurring within the New Jersey portion of the PAPE within 0.5 mi of shore, with the exclusion of locales identified in Phase I. Intensive-level surveys in Manhattan will include all 149 listed or eligible historic buildings identified within the PAPE. These identified properties, in both New Jersey and Manhattan, will be field visited, photographed, with documentation of exterior conditions, integrity, material fabric, settings, and other considerations of physical appearance and cultural associations. To gather the most accurate data possible on Project views from tall buildings in Manhattan, Tetra Tech will attempt to gain access to all tall buildings in Manhattan in the survey. In the event that Tetra Tech is unable to gain access to a building during the survey, a proposed alternate procedure is described below in *Phase IIa, IIIa, and IVa: Alternative Survey Methods.*

Phase III: Evaluation of NRHP Eligibility

Documented properties will be evaluated for initial NRHP eligibility if not yet determined, or for possible changes in their established eligibility resulting from modifications to their fabric or setting that would substantially alter their character-defining features and diminish or eliminate their significance as historic resources.

Phase IV: Assessment of Project Effects

Each documented property will be assessed for potentially adverse effects due to the introduction of the Project into its viewshed. Visual simulations will be performed for representative properties in the PAPE. Photographs will be taken from the building viewpoints toward the Project and will be compiled to create a panoramic view towards the Project area. Turbines will be digitally rendered into the panoramas to achieve an accurate prediction of the viewshed with the proposed Project layout. In addition, analyses will be run to determine the visibility of the Project during different stages of daylight and weather patterns. These visual simulations will help demonstrate the range at which views of the Project would be faint or no longer visible. For example, the actual range of visual impacts may be less than the 40-mi Study Area, depending on the height of the viewpoint. At a range where views of the Project are faint or no longer visible, properties would not experience an adverse effect. These additional visual simulations will help demonstrate why it may not be necessary to survey historic properties past a certain distance, including taller properties or those with elevated views.

For example, Tetra Tech produced visual simulations using photographs from the 102nd floor of the Empire State Building, which is the highest viewpoint from a historic property in the Study Area (**Attachment 2** Visual Simulations from the Empire State Building and Statue of Liberty Pedestal). Any view of the Project from buildings shorter than the Empire State Building or farther from the Project would be expected to be harder to discern than views from the Empire State Building. Such views, where integrity of the foreground historic viewshed is already substantially altered such that the introduction of the Project in the background viewshed, would represent only small, incremental changes relative to the existing conditions and would, likely, not be considered to embody adverse effects to the resource. Visual simulations from the pedestal of the Statue of Liberty, which stands 154 feet above ground level, demonstrate that the foreground completely obscures any view of the Project from this viewpoint (**Attachment 2**) and suggest that views from other historic architectural properties of equal or lesser height may be similarly obscured and therefore may not merit individual evaluation. The view from the crown of the Statue of Liberty will also be evaluated using visual simulations and considered in the assessment of effects on this property. If further visual simulations are warranted, the highest priority viewpoint from which to create a simulation would be the viewpoint that appears to have the next clearest view toward the Project, after the Empire State Building and the Statue of Liberty.

Tetra Tech will produce one additional visual simulation from a historic property in Manhattan and two additional visual simulations from properties in coastal New Jersey. The properties selected will be representative of the population of properties assessed for Project effects.

Phase V: Reporting

The results of the historic resources survey and assessment of visual effects will be compiled into a formal report. Components of the report will include:

- Description of the undertaking;
- Overview of previous surveys and reports completed to that point;
- Brief cultural and topographical history of the area surveyed;

- Review of field survey and methods; and
- Report of each building including a historical background, architectural description, reassessment of NRHP eligibility, assessment of visual impacts, and a recommendation as to adverse effects. Relevant photographs, figures, and simulations will also be included.

The NPS maintains the NRHP and defines four criteria for evaluating a cultural resource to be eligible to the NRHP. A cultural resource must meet at least one of the criteria for NRHP eligibility listed below.

The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

A. That are associated with events that have made a significant contribution to the broad patterns of our history;

B. That are associated with the lives of persons significant in our past;

C. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. That have yielded, or may be likely to yield, information important in prehistory or history (NPS 1997).

In addition to meeting at least one of the criteria, a property must also retain sufficient integrity to convey its significance. Integrity is assessed on the following aspects: location, design, setting, materials, workmanship, feeling, and association (NPS 1997).

Phase IIa, IIIa, and IVa: Alternative Survey Methods

To gather the most accurate data possible, Tetra Tech will attempt to gain access to all privately owned buildings in the survey in Manhattan. However, it is likely that access will be denied to at least one building. In such a case, Tetra Tech is proposing alternate survey methods to gather the minimum amount of information needed to determine NRHP eligibility and assess for impacts.

- *Phase IIa and IIIa:* Photographs of the exterior of the building will be taken from the public right-of-way and capture as many elevations as possible. Attention will be taken to document exterior character-defining features and any recent modifications to the building. Any potentially accessible viewpoints apparent from street level will also be documented.

- *Phase IVa:* If there are nearby buildings with similar viewsheds that are publicly accessible, representative photographs will be taken from those viewpoints to substitute for the inaccessible building. If no alternative viewpoints are available, Tetra Tech will conduct further research through relevant resources (apartment rental websites, newspaper articles, Google reviews and images, etc.) to locate relevant imagery available for substitution. If no images can be found, Tetra Tech will extrapolate available data to create a written viewshed description and assess potential effects based on the information gathered and previous simulations.

3.3 Schedule

The phased identification process is planned to take place from November 2022 through the second quarter of 2023. Field surveys are planned to occur from December 2022 through February 2023. Data analysis and reporting are planned for completion prior to March 22, 2023.

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ATTACHMENT 1.

MAPBOOK OF PORTIONS OF THE PAPE TO BE ANALYZED IN NEW JERSEY

EMPIRE OFFSHORE WIND LEASE: OCS-A 0512 EMPIRE WIND PROJECT

equinor

Legend

- City
- State Territorial Waters Boundary
- County Border
- NJ Coastline Buffer (0.5 mile buffer)
- Offshore AVEHP Study Area

PAPE (viewshed intensity at 290 m height)

High : 174

Low : 0

Date	November 3, 2022
File/Job Number	194-1247-0001
Scale	1:24,000
Personnel	Figure Prepared by: Tetra Tech Offshore GIS

0 0.1 0.2 0.3 0.4 0.5 Miles

0 0.1 0.2 0.3 0.4 Nautical Miles

0 0.1 0.2 0.3 0.4 Kilometers

REFERENCE MAP

Data Sources: BOEM ESRI NOAA NJ DEP
Service Layer Credits: Source: Esri Maxar Earthstar Geographics and the GIS User Community

NOT FOR CONSTRUCTION

EMPIRE OFFSHORE WIND LEASE: OCS-A 0512 EMPIRE WIND PROJECT

equinor

Legend

- City
- State Territorial Waters Boundary
- County Border
- NJ Coastline Buffer (0.5 mile buffer)
- Offshore AVEHP Study Area

PAPE (viewshed intensity at 290 m height)

High : 174

Low : 0

Date	November 3, 2022
File/Job Number	194-1247-0001
Scale	1:24,000
Personnel	Figure Prepared by: Tetra Tech Offshore GIS

0 0.1 0.2 0.3 0.4 0.5 Miles

0 0.1 0.2 0.3 0.4 Nautical Miles

0 0.1 0.2 0.3 0.4 Kilometers

REFERENCE MAP

Data Sources: BOEM ESRI NOAA NJ DEP

Service Layer Credits: Source: Esri Maxar Earthstar Geographics and the GIS User Community

NOT FOR CONSTRUCTION

EMPIRE OFFSHORE WIND LEASE: OCS-A 0512 EMPIRE WIND PROJECT

equinor

Legend

- City
- State Territorial Waters Boundary
- County Border
- NJ Coastline Buffer (0.5 mile buffer)
- Offshore AVEHP Study Area

PAPE (viewshed intensity at 290 m height)

High : 174

Low : 0

Date	November 3, 2022
File/Job Number	194-1247-0001
Scale	1:24,000
Personnel	Figure Prepared by: Tetra Tech Offshore GIS

0 0.1 0.2 0.3 0.4 0.5 Miles

0 0.1 0.2 0.3 0.4 Nautical Miles

0 0.1 0.2 0.3 0.4 Kilometers

REFERENCE MAP

Data Sources: BOEM ESRI NOAA NJ DEP
Service Layer Credits: Source: Esri Maxar Earthstar Geographics and the GIS User Community

NOT FOR CONSTRUCTION

EMPIRE OFFSHORE WIND
LEASE: OCS-A 0512
EMPIRE WIND PROJECT

equinor

Legend

- City
- State Territorial Waters Boundary
- County Border
- NJ Coastline Buffer (0.5 mile buffer)
- Offshore AVEHP Study Area

PAPE (viewshed intensity at 290 m height)

High : 174

Low : 0

Date	November 3, 2022
File/Job Number	194-1247-0001
Scale	1:24,000
Personnel	Figure Prepared by: Tetra Tech Offshore GIS

0 0.1 0.2 0.3 0.4 0.5 Miles

0 0.1 0.2 0.3 0.4 Nautical Miles

0 0.1 0.2 0.3 0.4 Kilometers

REFERENCE MAP

Data Sources: BOEM ESRI NOAA NJ DEP

Service Layer Credits: Source: Esri Maxar Earthstar Geographics and the GIS User Community

NOT FOR CONSTRUCTION

EMPIRE OFFSHORE WIND
LEASE: OCS-A 0512
EMPIRE WIND PROJECT

equinor

Legend

- City
- State Territorial Waters Boundary
- County Border
- NJ Coastline Buffer (0.5 mile buffer)
- Offshore AVEHP Study Area

PAPE (viewshed intensity at 290 m height)

High : 174

Low : 0

Date	November 3, 2022
File/Job Number	194-1247-0001
Scale	1:24,000
Personnel	Figure Prepared by: Tetra Tech Offshore GIS

0 0.1 0.2 0.3 0.4 0.5 Miles

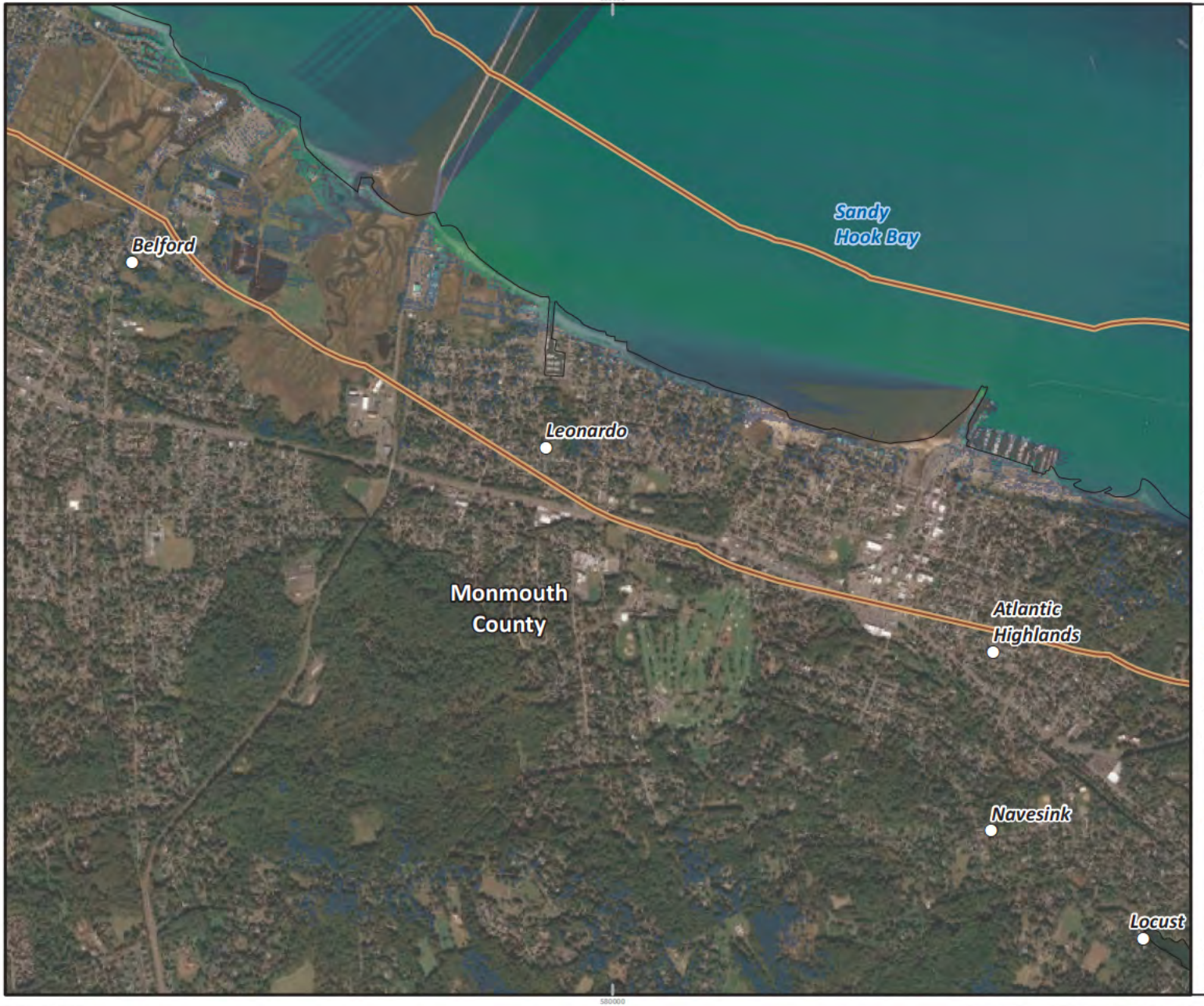
0 0.1 0.2 0.3 0.4 Nautical Miles

0 0.1 0.2 0.3 0.4 Kilometers

REFERENCE MAP

Data Sources: BOEM ESRI NOAA NJ DEP
Service Layer Credits: Source: Esri Maxar Earthstar Geographics and the GIS User Community

NOT FOR CONSTRUCTION



EMPIRE OFFSHORE WIND
LEASE: OCS-A 0512
EMPIRE WIND PROJECT

equinor

Legend

- City
- State Territorial Waters Boundary
- County Border
- NJ Coastline Buffer (0.5 mile buffer)
- Offshore AVEHP Study Area

PAPE (viewshed intensity at 290 m height)

High : 174

Low : 0

Date	November 3, 2022
File/Job Number	194-1247-0001
Scale	1:24,000
Personnel	Figure Prepared by: Tetra Tech Offshore GIS

0 0.1 0.2 0.3 0.4 0.5 Miles

0 0.1 0.2 0.3 0.4 Nautical Miles

0 0.1 0.2 0.3 0.4 Kilometers

REFERENCE MAP

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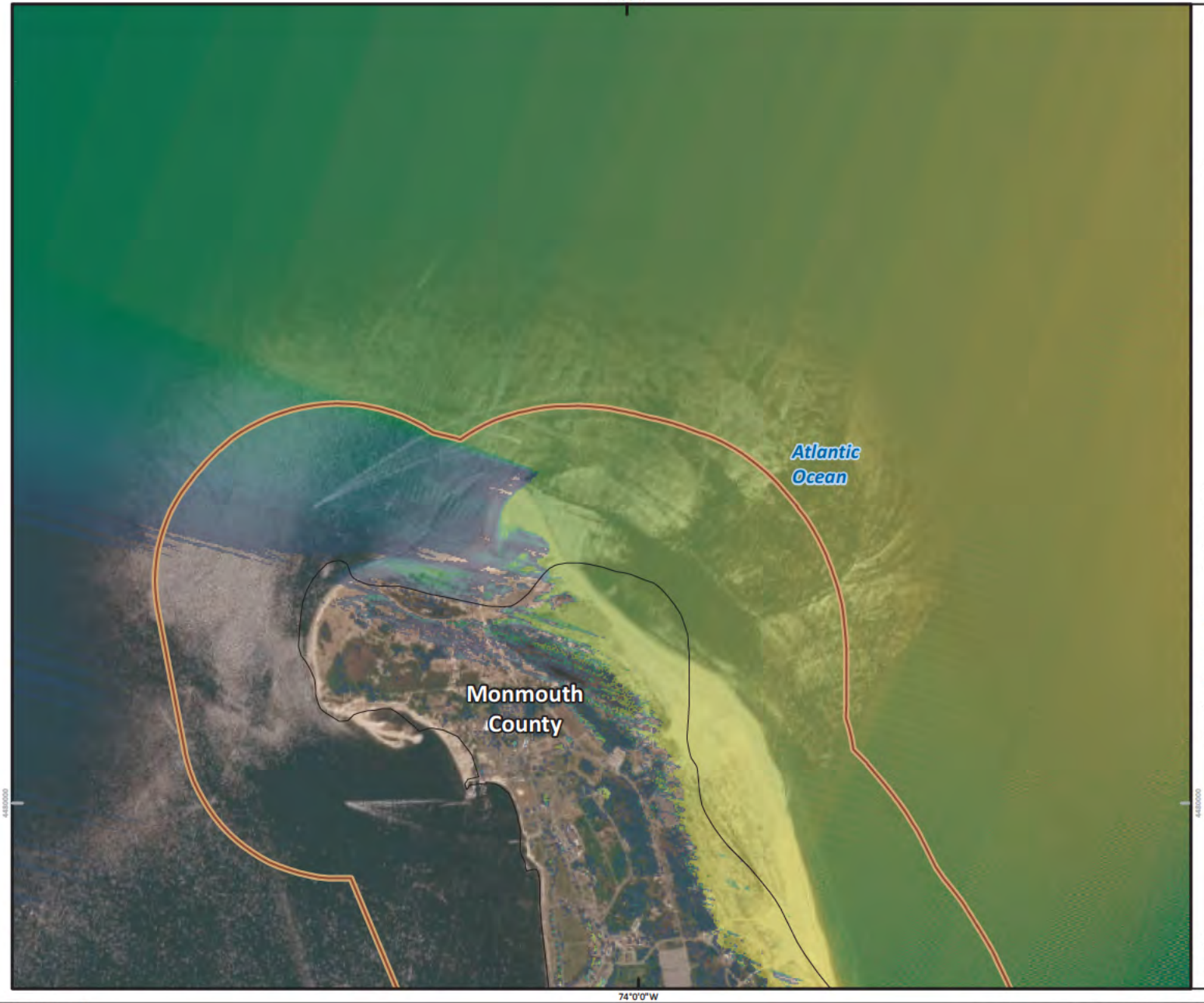

EMPIRE OFFSHORE WIND LEASE: OCS-A 0512 EMPIRE WIND PROJECT

equinor

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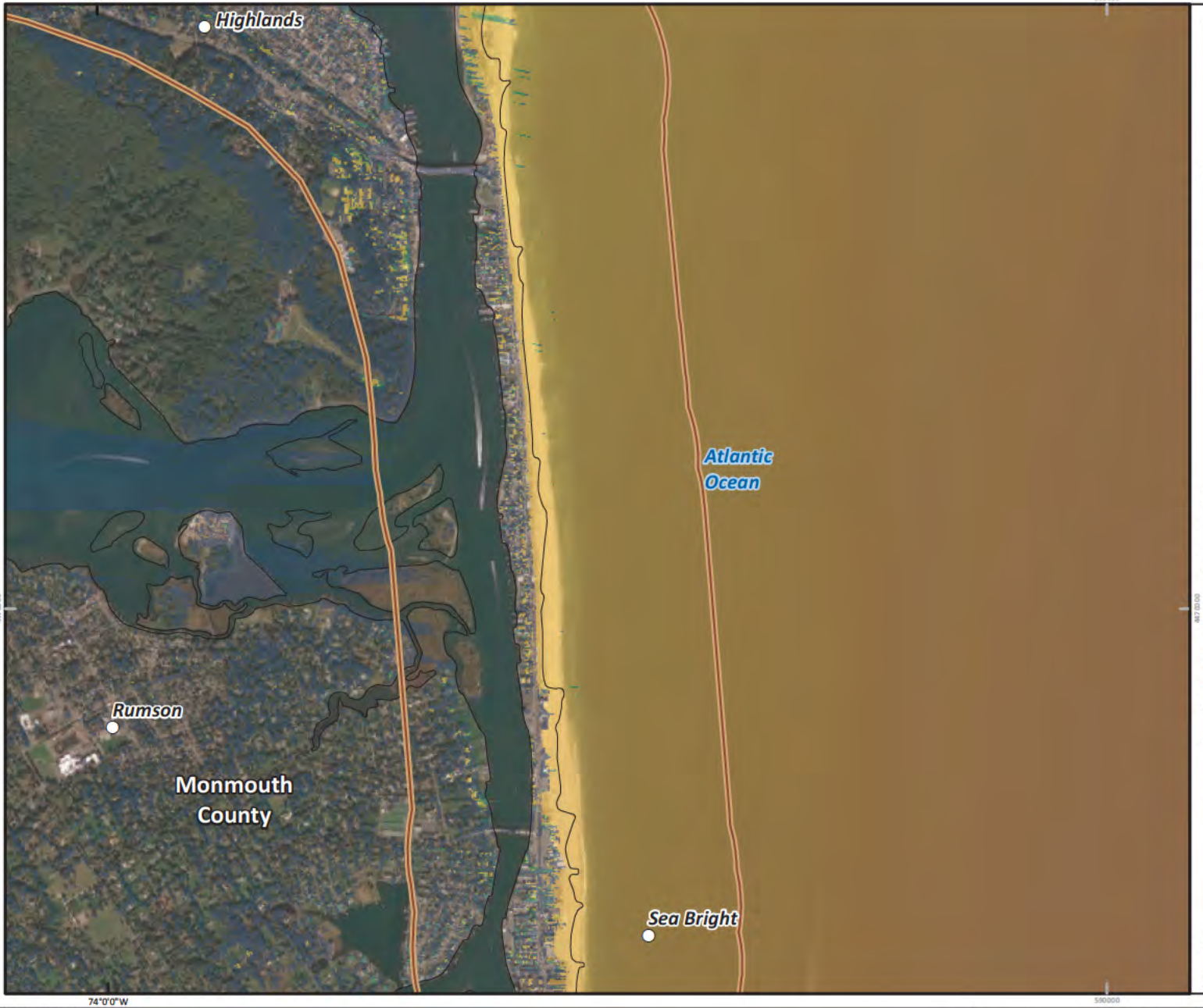

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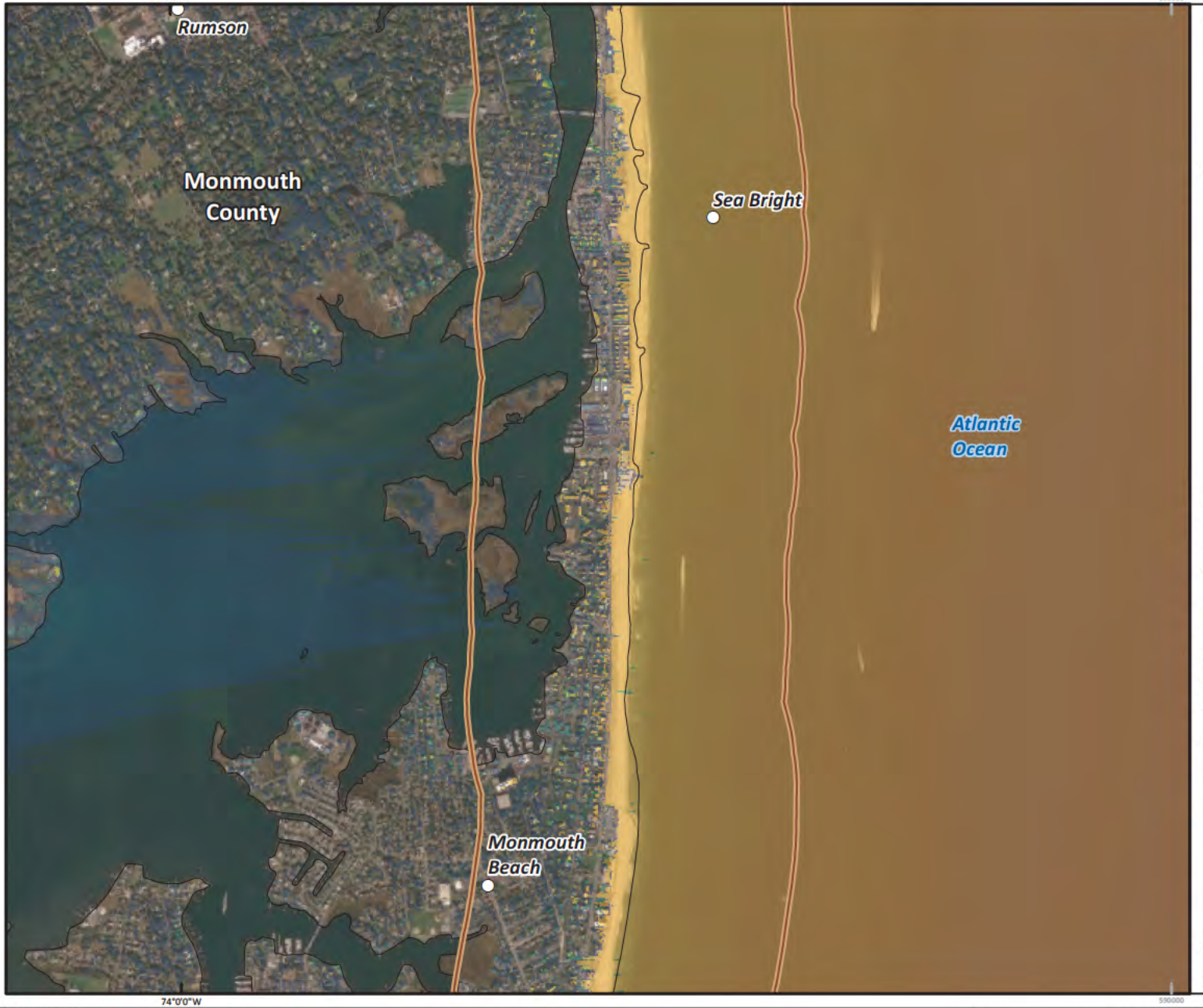

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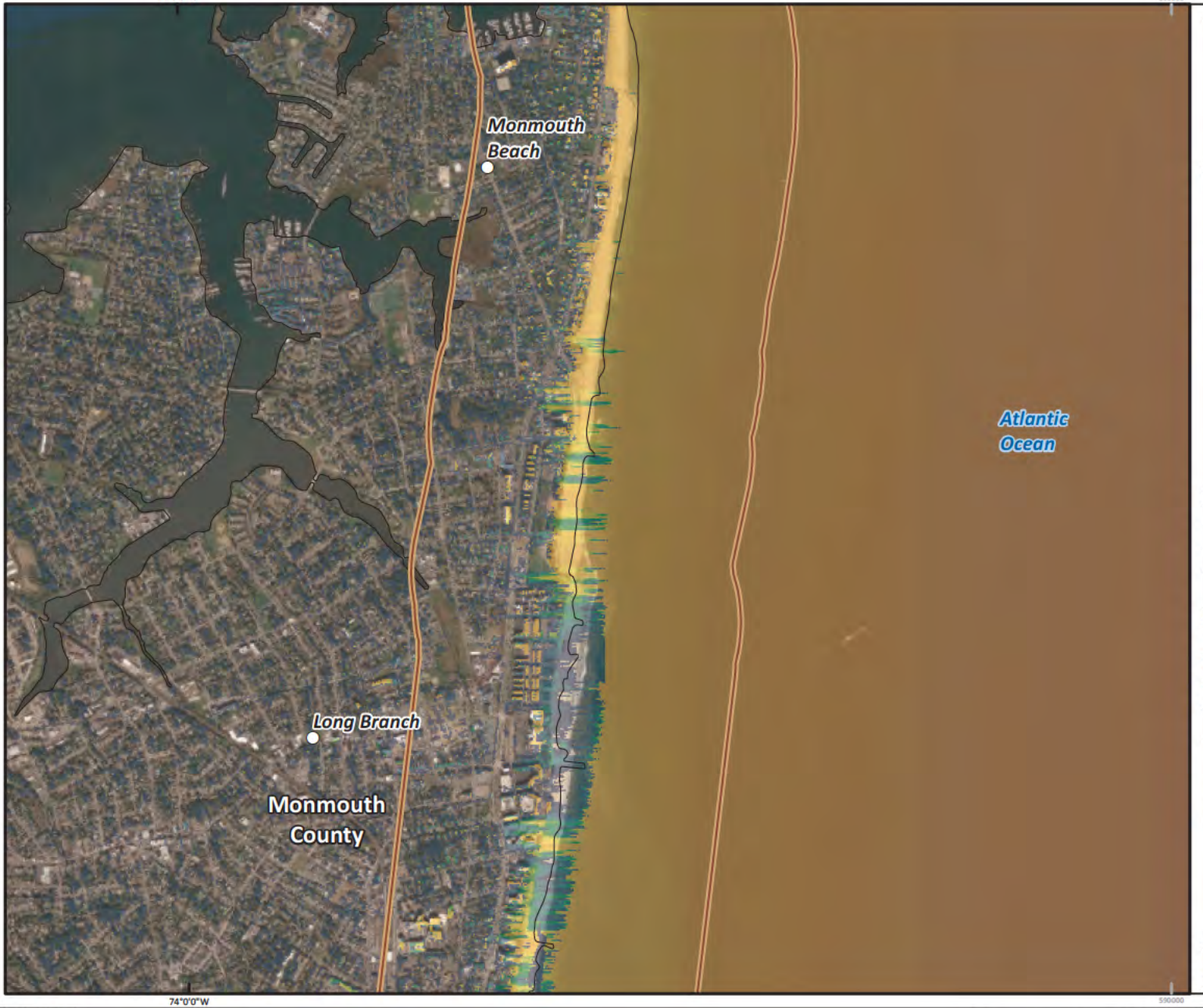

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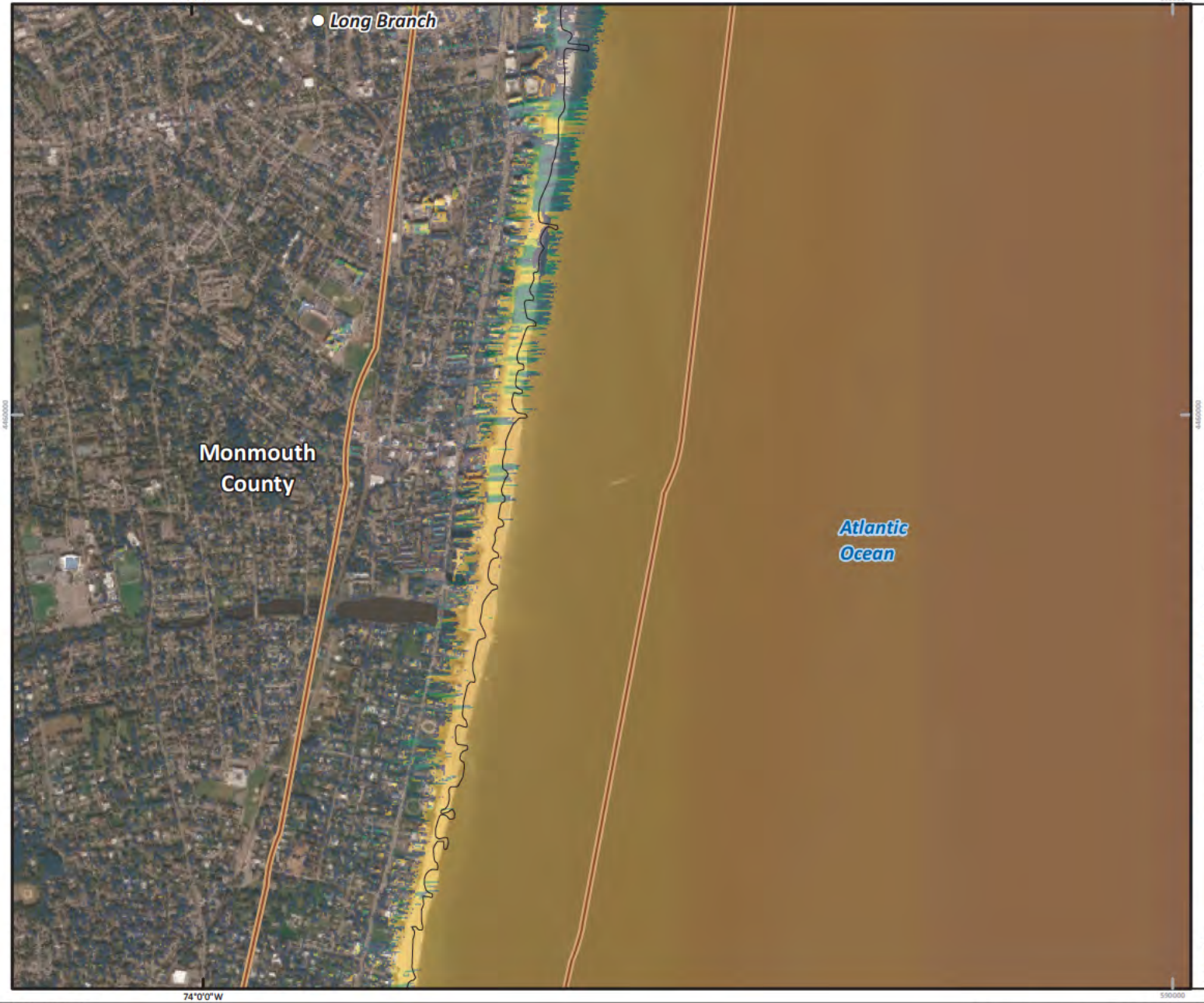

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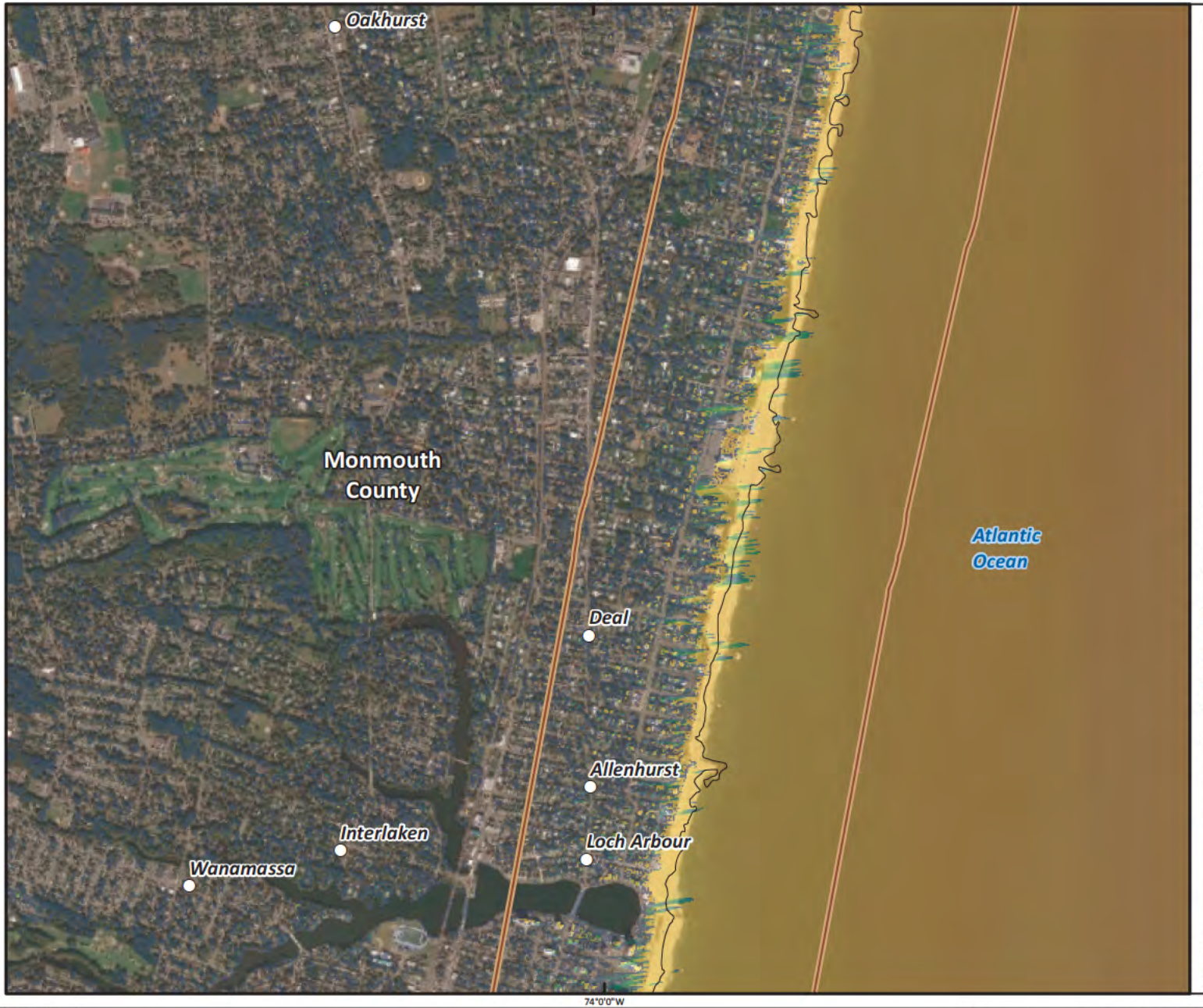

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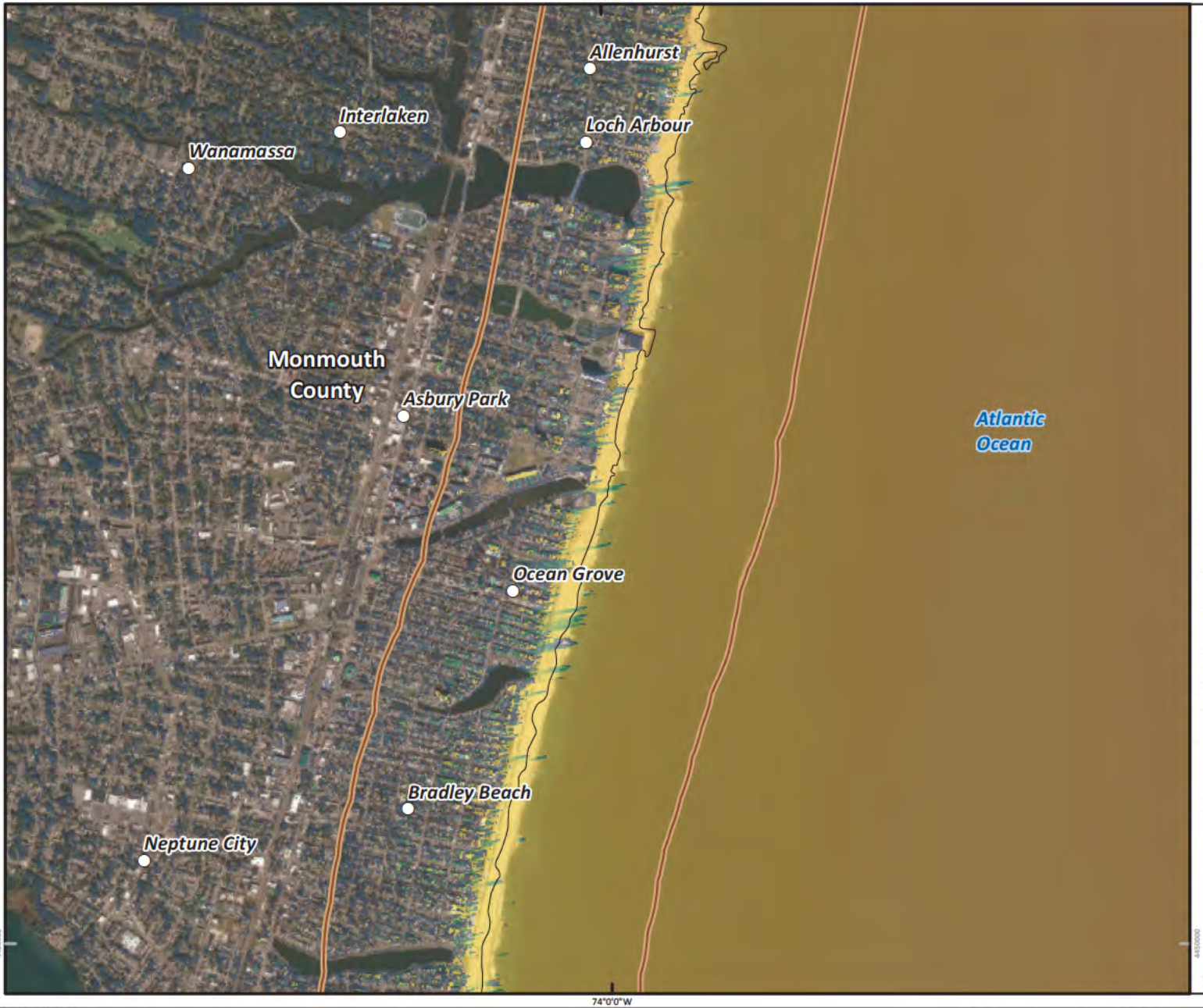

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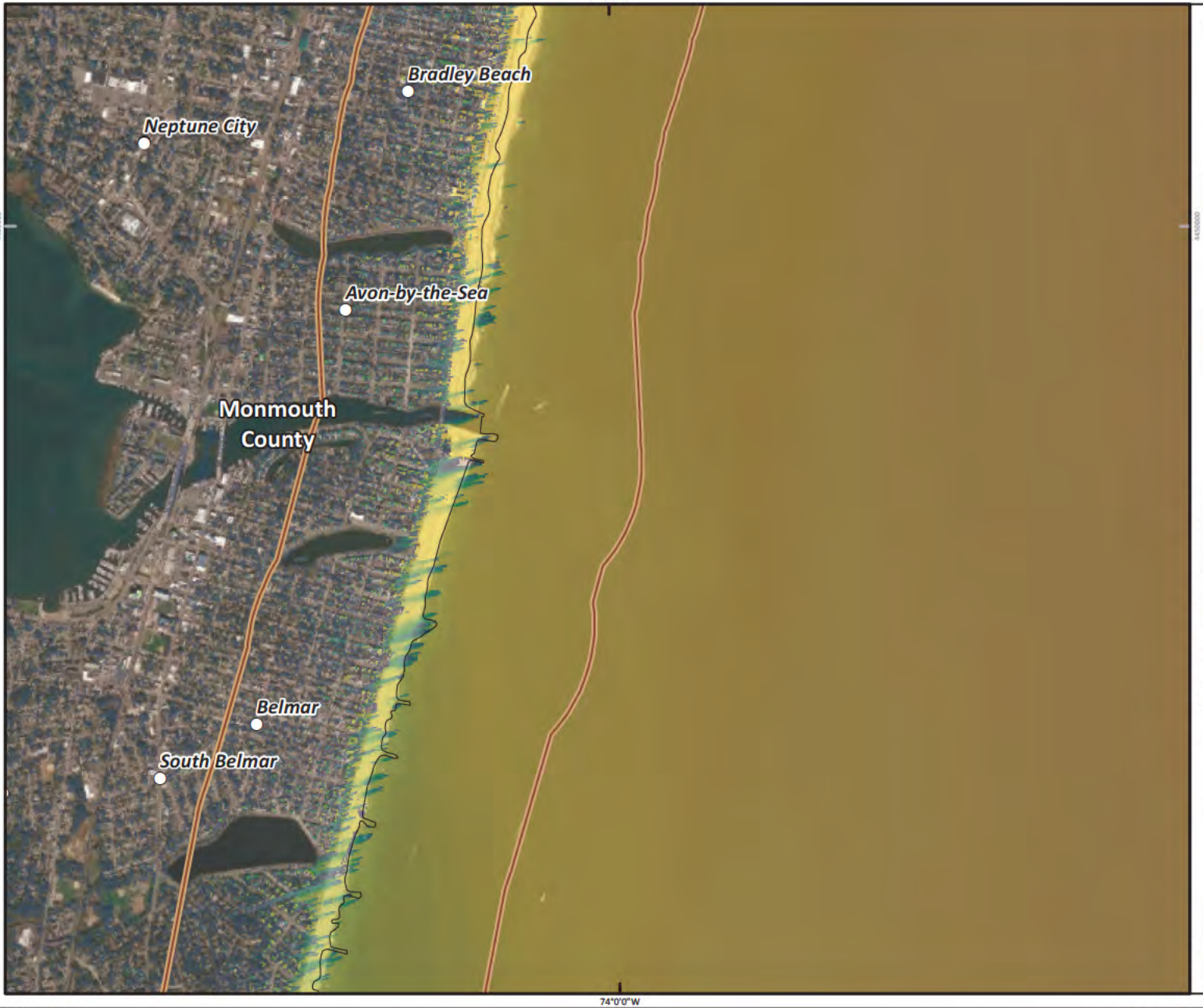

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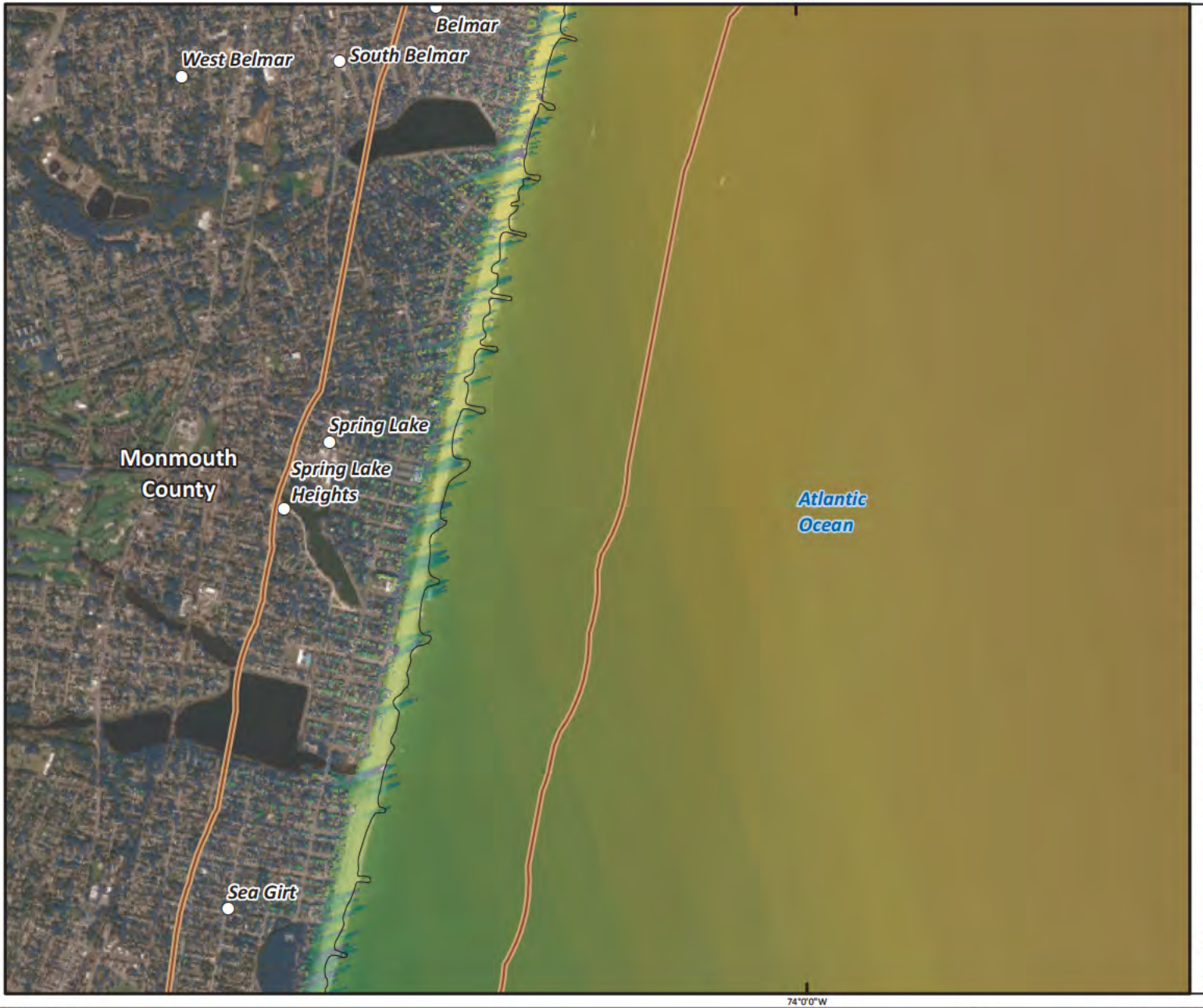

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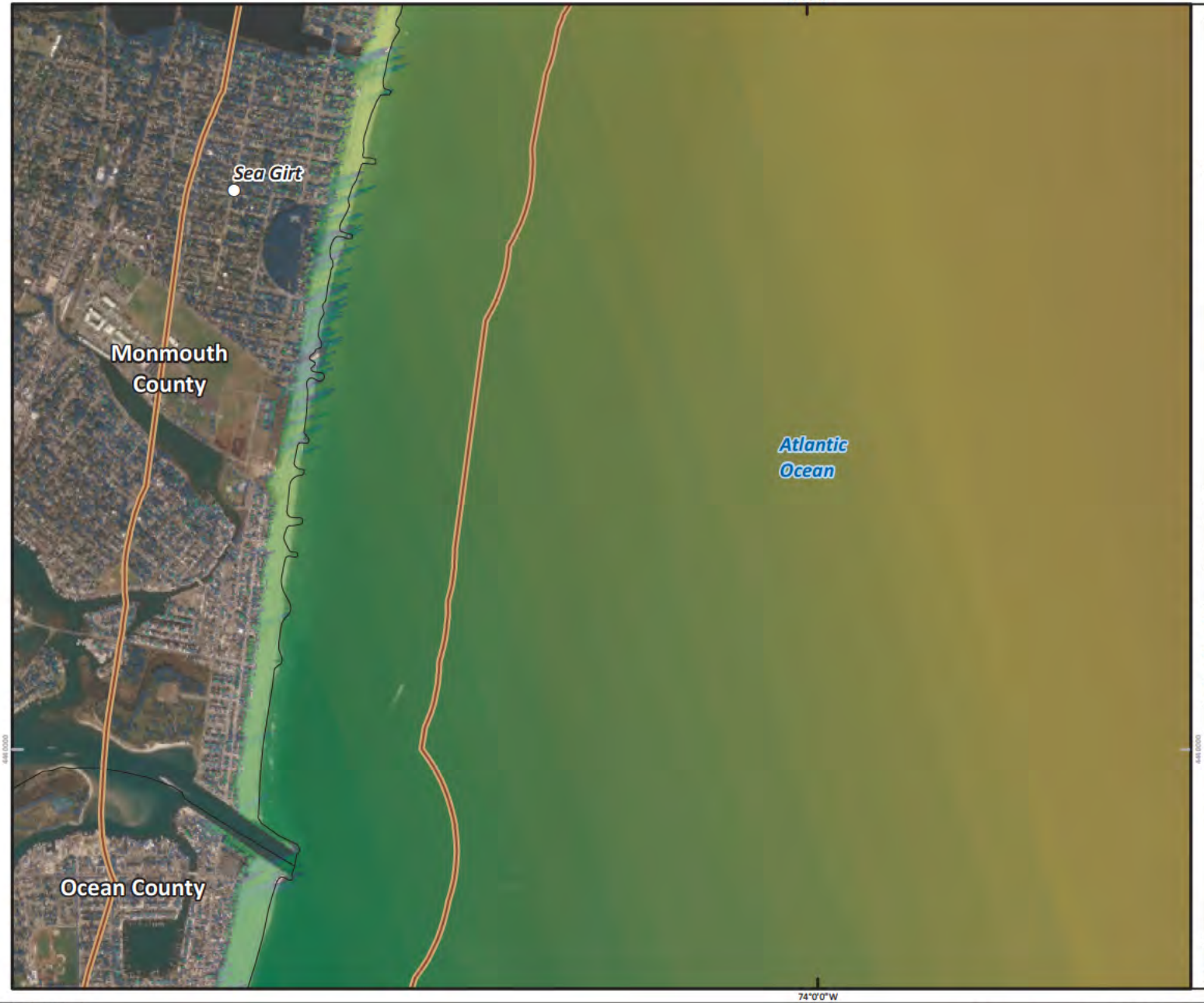

EMPIRE OFFSHORE WIND LEASE: OCS-A 0512 EMPIRE WIND PROJECT

equinor

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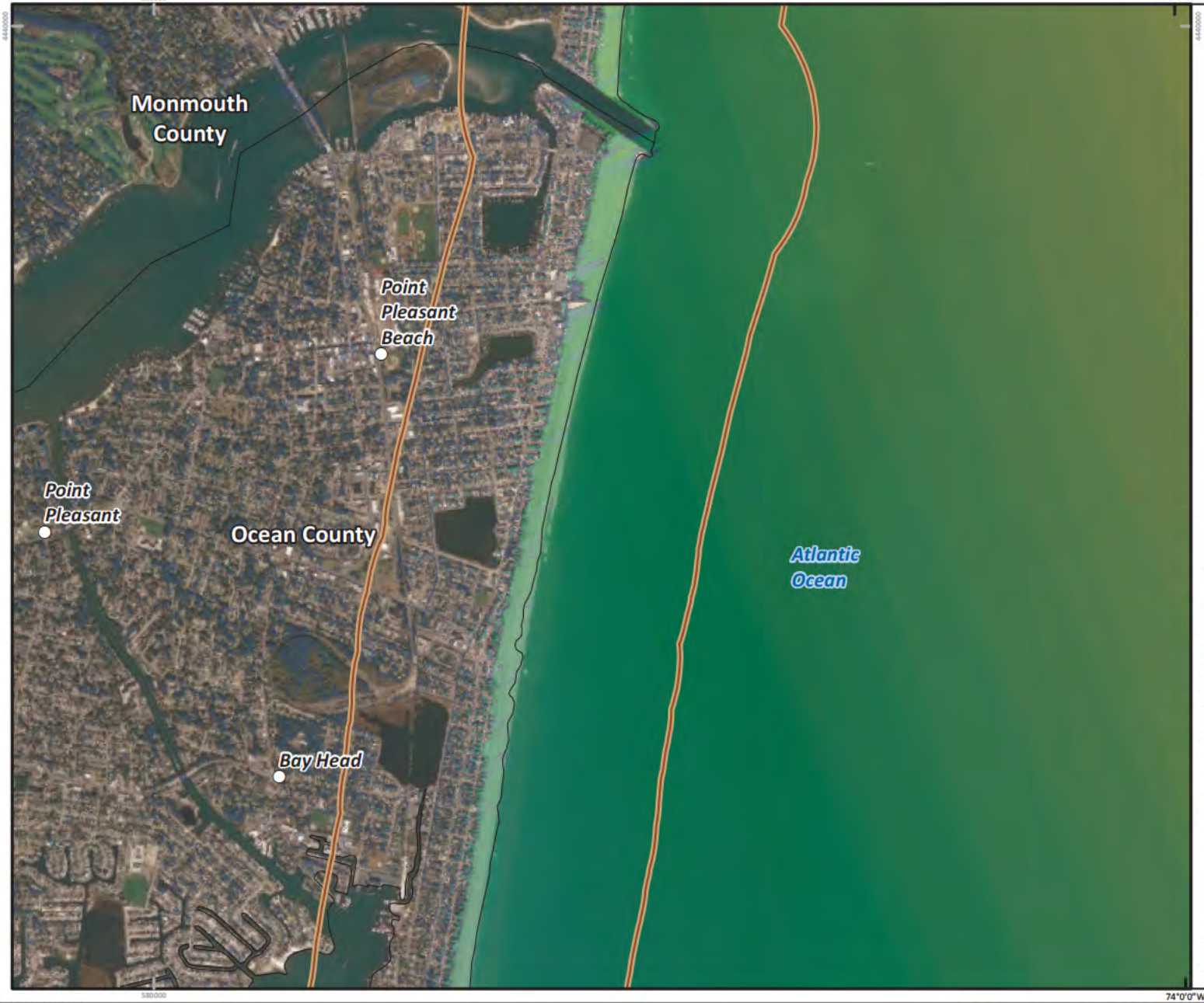

EMPIRE OFFSHORE WIND LEASE: OCS-A 0512 EMPIRE WIND PROJECT

equinor

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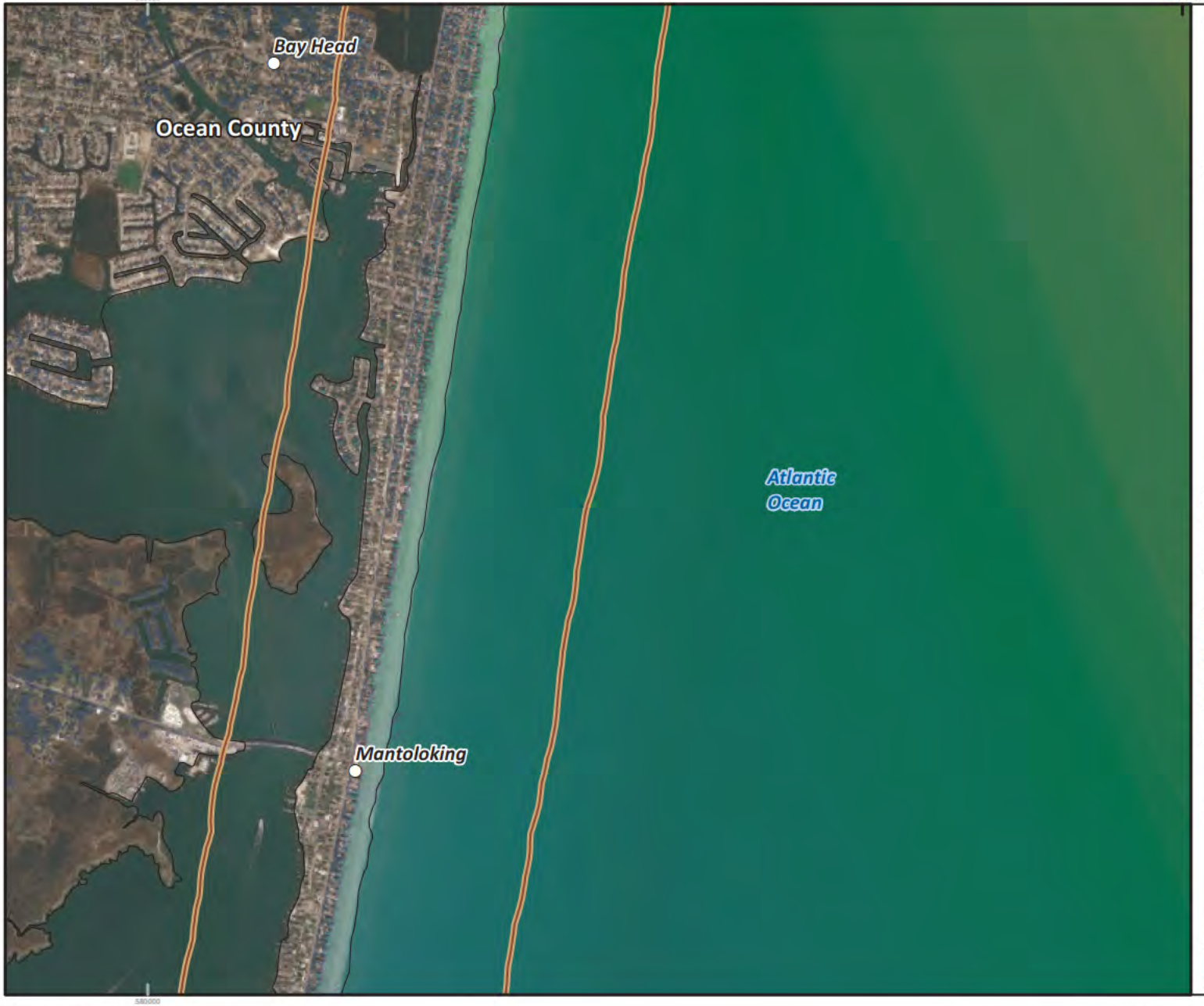

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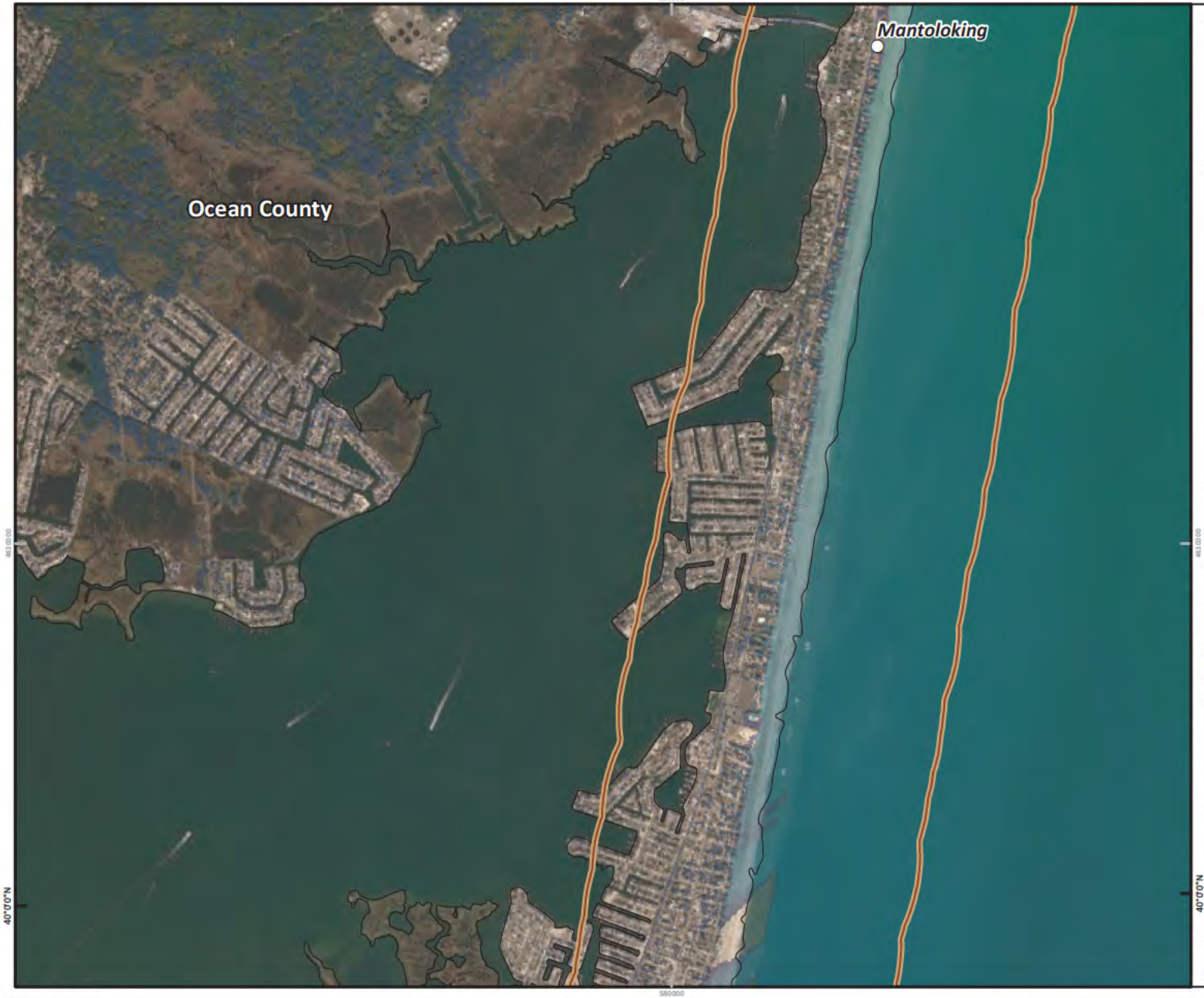

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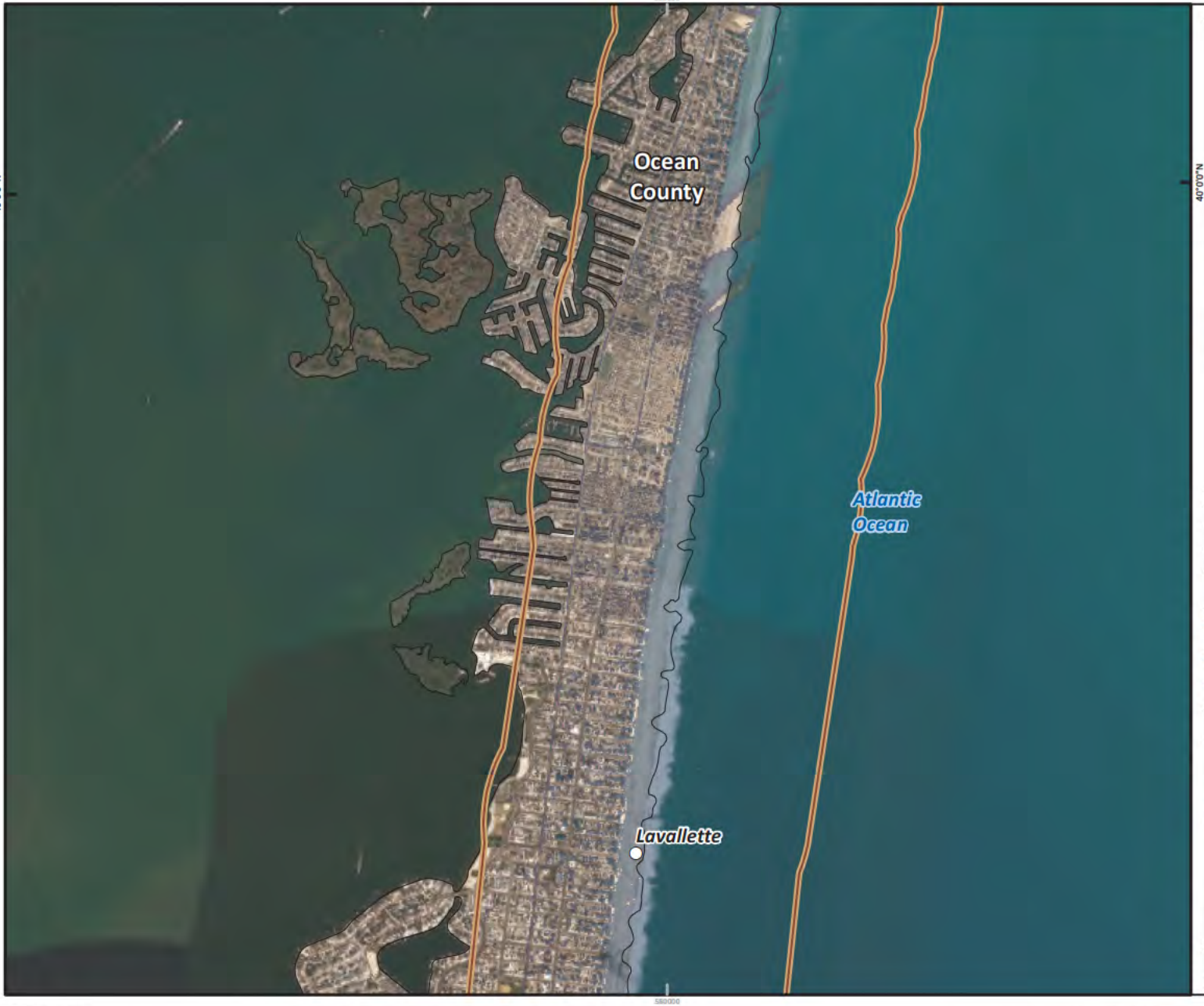

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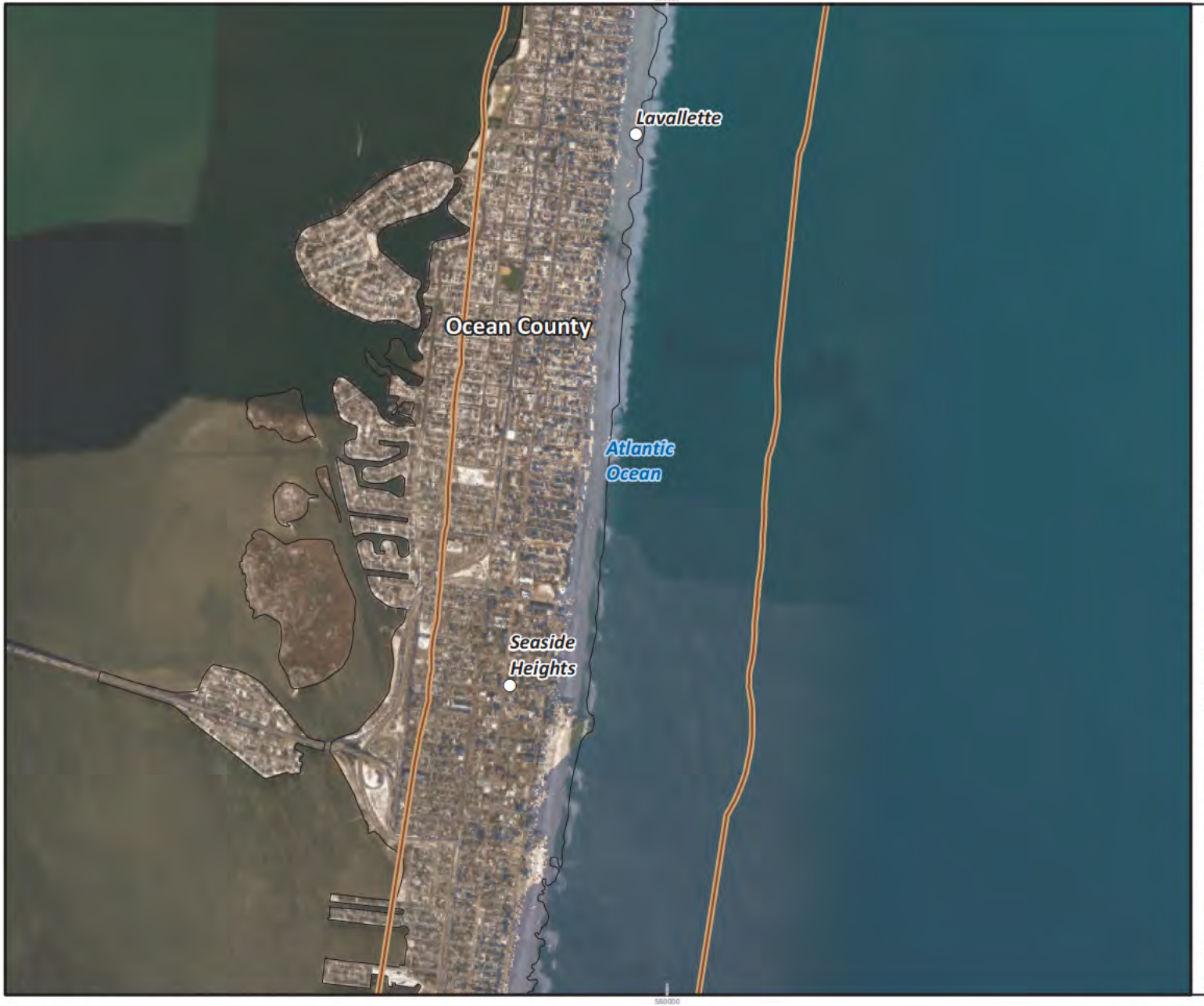

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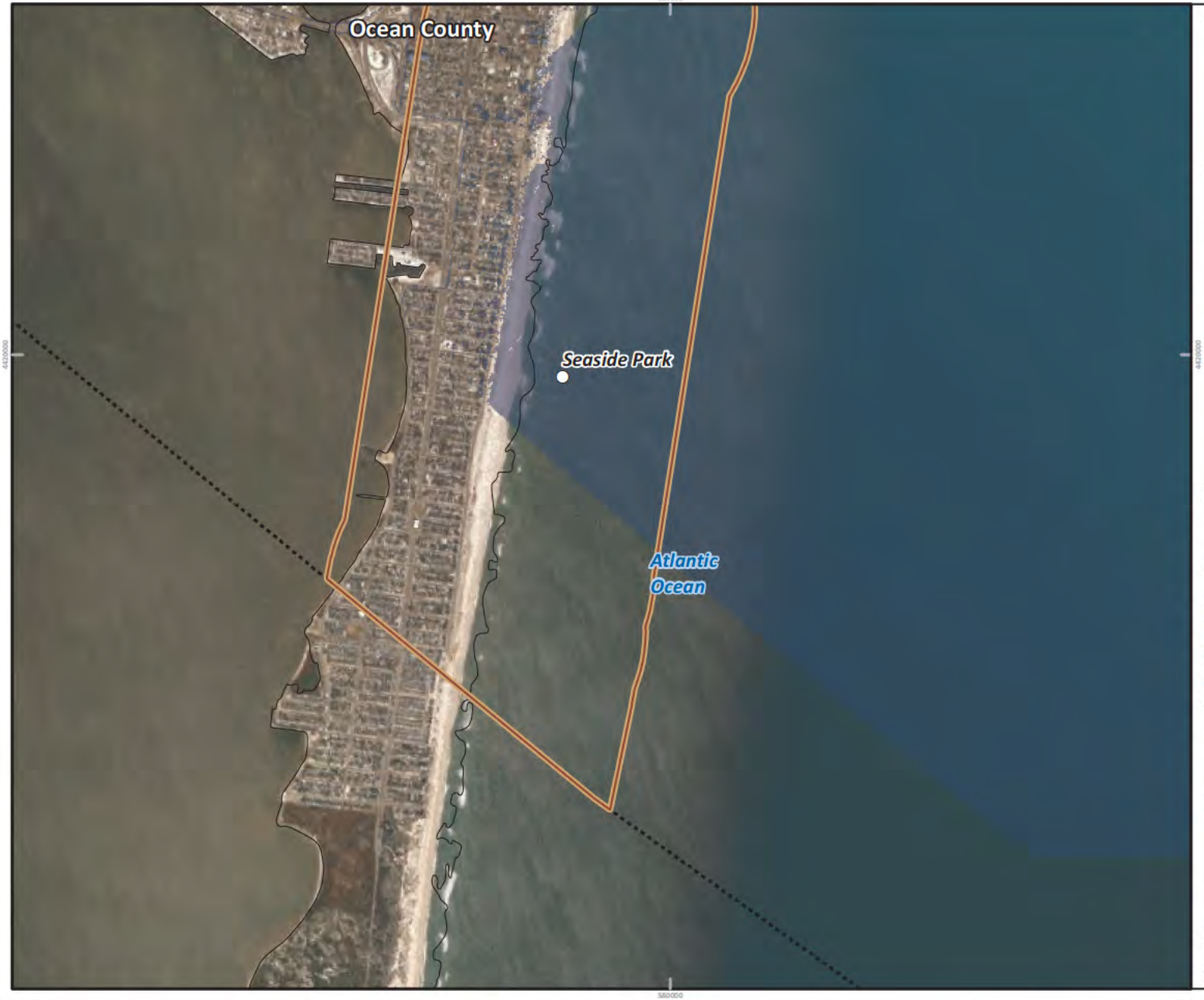

EMPIRE OFFSHORE WIND LEASE: OCS-A 0512 EMPIRE WIND PROJECT

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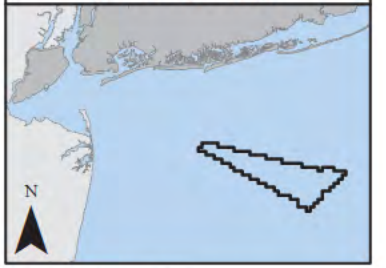


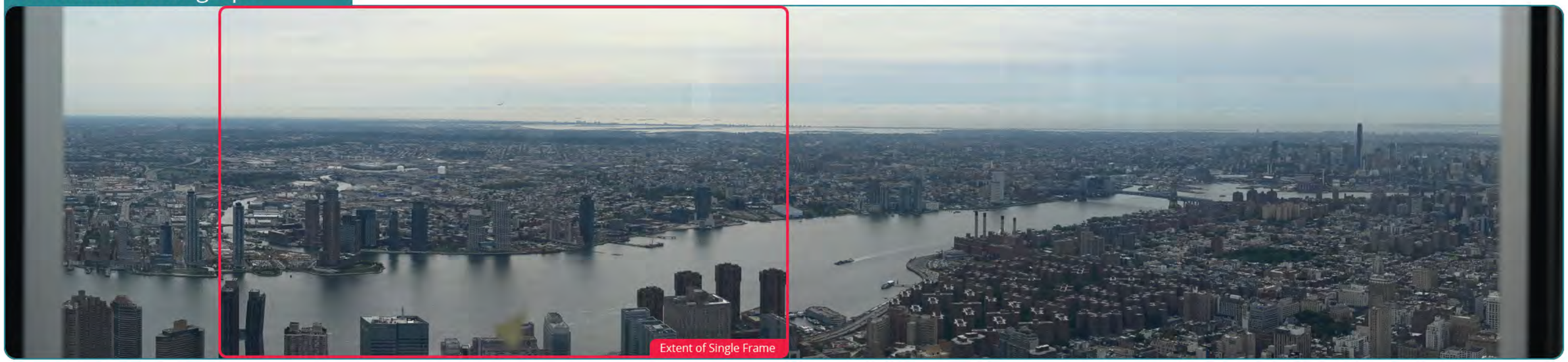
Data Sources: BOEM ESRI NOAA NJ DEP
Service Layer Credits: Source: Esri Maxar Earthstar Geographics and the GIS User Community

NOT FOR CONSTRUCTION

ATTACHMENT 2

VISUAL SIMULATIONS FROM THE EMPIRE STATE BUILDING AND STATUE OF LIBERTY PEDESTAL

Panoramic Photograph

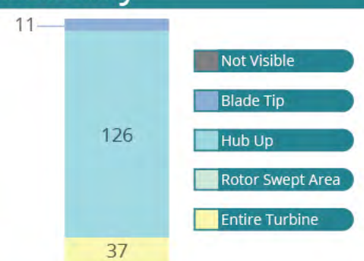


Vicinity Map

Photograph Information

Viewpoint Location:	Empire State Building 102nd Floor
Date of Photograph:	September 30, 2022
Time of Photograph:	9:30 AM (EDT)
Weather Condition:	Hazy Overcast
Latitude:	40.748476° N
Longitude:	-73.985883° W
Viewing Direction:	Southeast
Ground Elevation + Tripod Height:	1,250 feet

Turbine Visibility



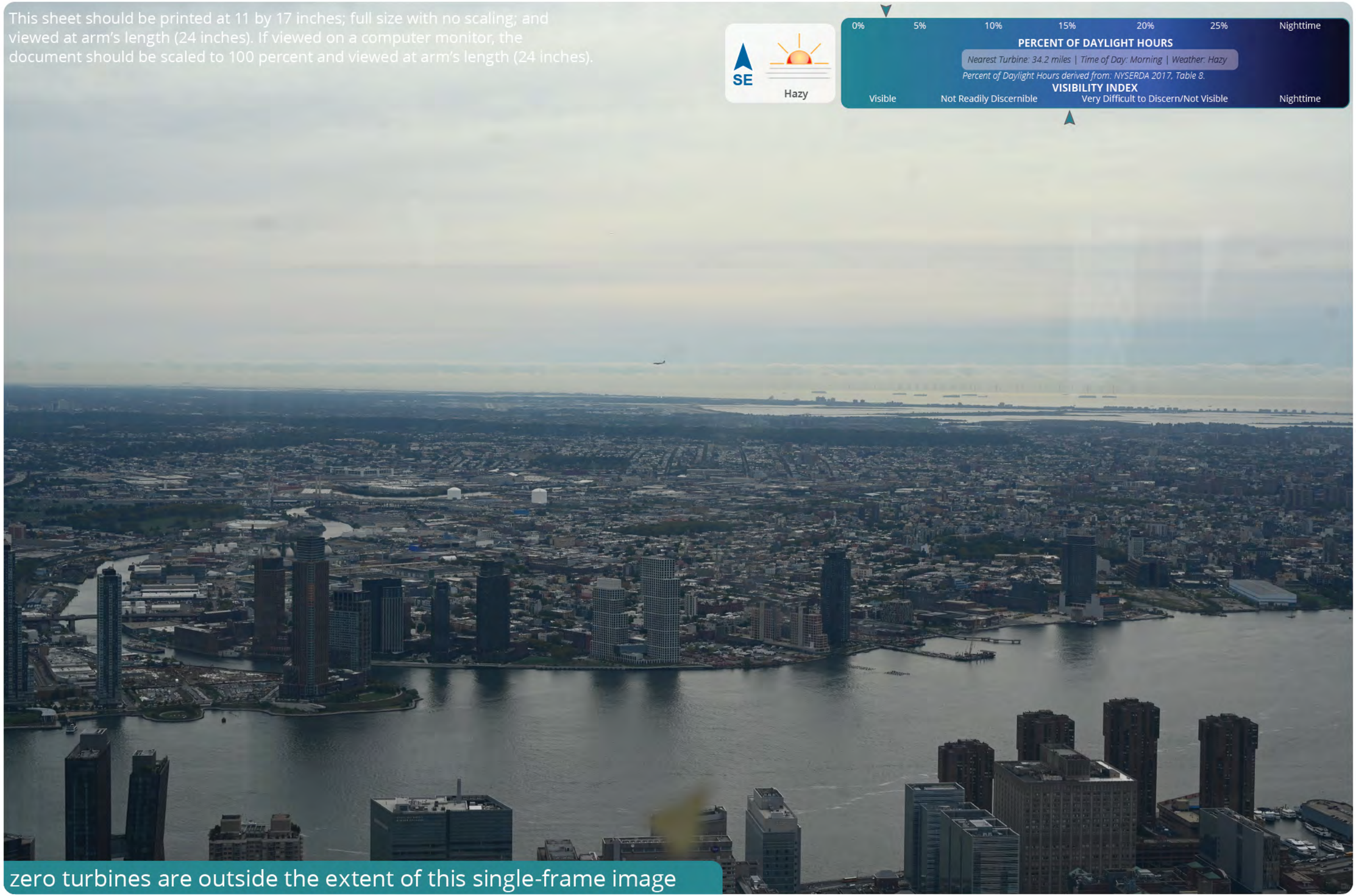
Turbine Data

Representative Wind Turbine

Viewpoint Visibility	
Closest Visible Turbine	34.2 miles
Farthest Visible Turbine	56.7 miles
Structures Potentially Visible	174 of 174 total

*Fewer turbines may be visible in the simulation due to screening from topography or vegetation

This sheet should be printed at 11 by 17 inches; full size with no scaling; and viewed at arm's length (24 inches). If viewed on a computer monitor, the document should be scaled to 100 percent and viewed at arm's length (24 inches).



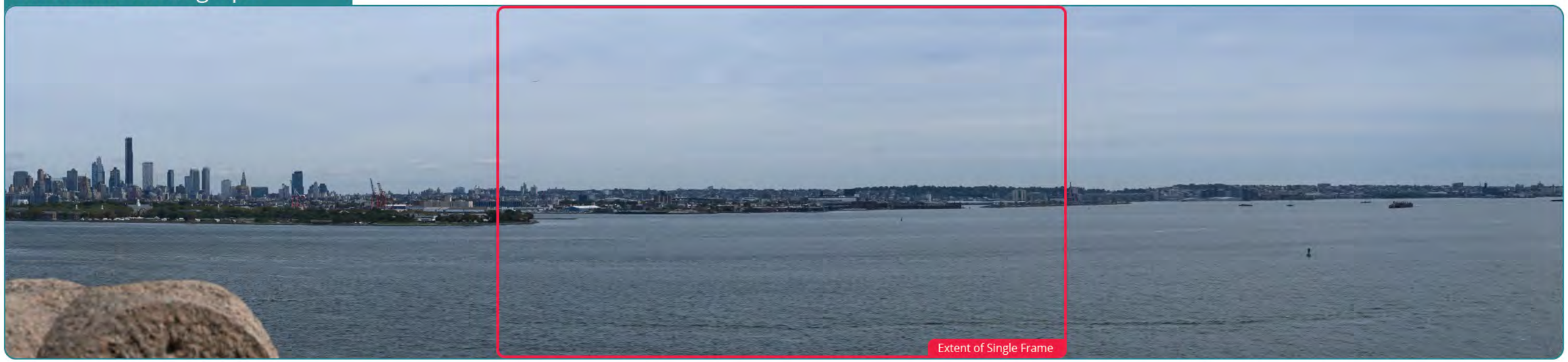
zero turbines are outside the extent of this single-frame image

Empire Offshore Wind: Empire Wind Project (EW 1 and EW 2)

Empire State Building: 102nd Floor

equinor

Panoramic Photograph

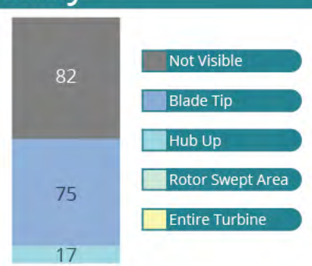


Vicinity Map

Photograph Information

Viewpoint Location:	The Statue Of Liberty
Date of Photograph:	September 30, 2022
Time of Photograph:	12:00 PM (EDT)
Weather Condition:	Overcast
Latitude:	40.689298° N
Longitude:	-74.044553° W
Viewing Direction:	Southeast
Ground Elevation + Tripod Height:	95 feet

Turbine Visibility



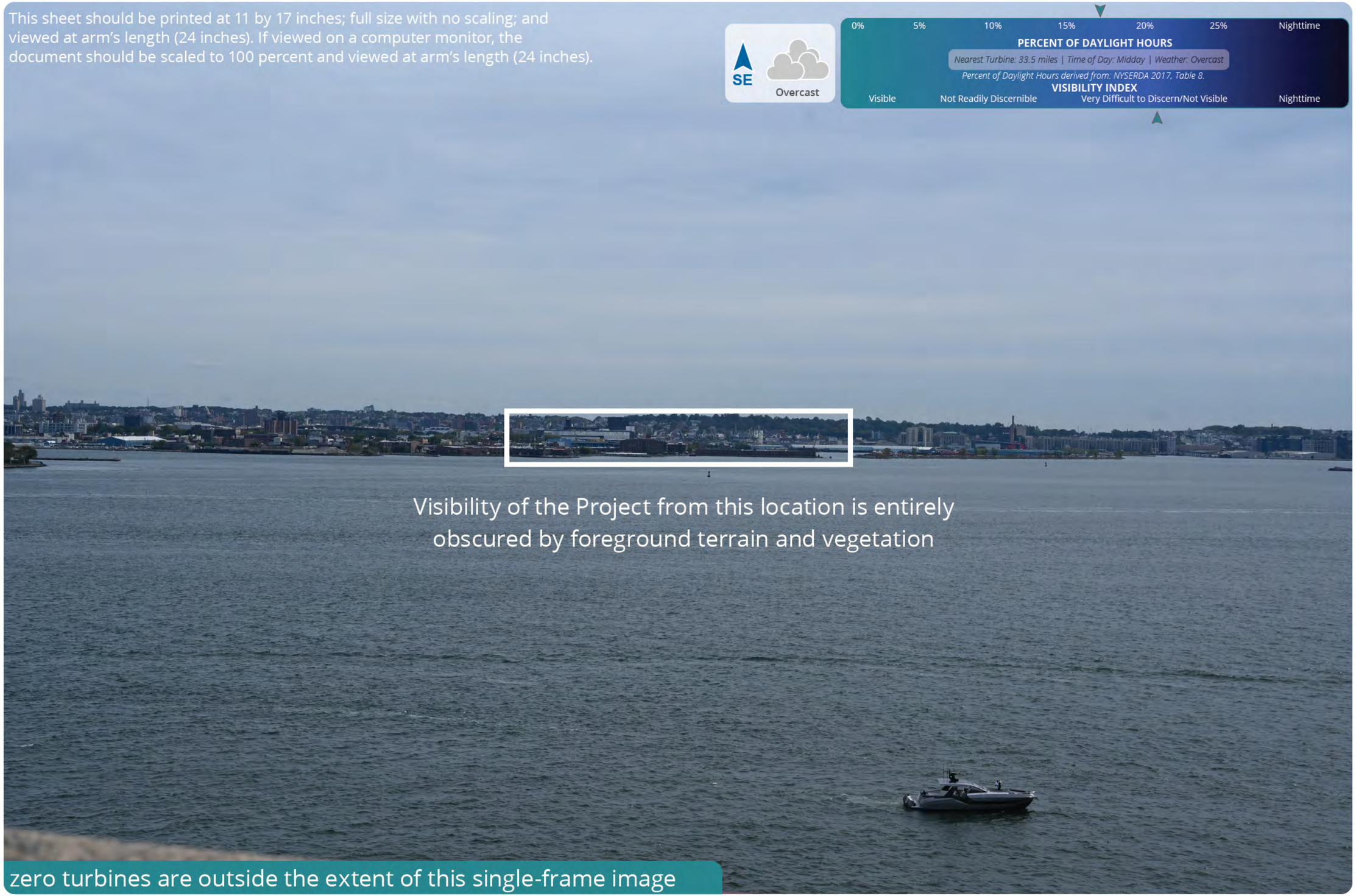
Turbine Data

Representative Wind Turbine

Viewpoint Visibility	
Closest Visible Turbine	33.5 miles
Farthest Visible Turbine	49.6 miles
Structures Potentially Visible	92 of 174 total

*Fewer turbines may be visible in the simulation due to screening from topography or vegetation

This sheet should be printed at 11 by 17 inches; full size with no scaling; and viewed at arm's length (24 inches). If viewed on a computer monitor, the document should be scaled to 100 percent and viewed at arm's length (24 inches).



Visibility of the Project from this location is entirely obscured by foreground terrain and vegetation

zero turbines are outside the extent of this single-frame image

Empire Offshore Wind: Empire Wind Project (EW 1 and EW 2)

The Statue Of Liberty

equinor

ATTACHMENT 6 – MONITORING AND POST-REVIEW DISCOVERIES PLAN FOR TERRESTRIAL ARCHAEOLOGICAL RESOURCES

Unanticipated Discoveries Plan for Submerged Archaeological sites, Historic Properties, and Cultural Resources including Human Remains, Empire Offshore Wind: Empire Wind Project (EW 1 and EW 2) for Lease Area OCS-A 0512
Construction and Operations Plan

Report

Prime Contract: 4600016849
Subcontract 1142996

Prepared for

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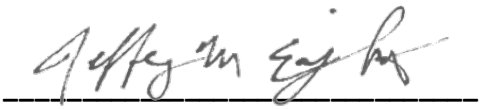
Authored by

Joseph Grinnan, MA, RPA, Benjamin C. Wells, MA, RPA, and Jeffrey M. Enright, MA, RPA



Jeff Enright, MA, RPA
Qualified Marine Archaeologist

SEARCH

www.searchinc.com

November 2022

INTRODUCTION

Empire Offshore Wind LLC (Empire) proposes to construct and operate the Empire Offshore Wind Project: Empire Wind 1 (EW 1) and Empire Wind 2 (EW 2) (Project), within the Bureau of Ocean Energy Management (BOEM) Renewable Energy Lease Area OCS-A 0512 (Lease Area) and two submarine export cable routes (ECRs) to shore. Empire's Construction and Operations Plan (COP) for the Project supports the development, operation, and eventual decommissioning of Project infrastructure, including offshore wind turbines, offshore substations, interarray cables, and submarine export cables. The Project will comprise the following components: up to 174 wind turbines connected by a network of interarray cables, up to two offshore substations, and up to five submarine export cables to bring power to shore. SEARCH provided technical expertise to Empire's environmental consultant, Tetra Tech, Inc (Tetra Tech), by providing a Qualified Marine Archaeologist (QMA), pursuant to 30 CFR 585, which established BOEM procedures for the issuance and administration of offshore renewable energy leases.

SEARCH developed this Unanticipated Discoveries Plan (UDP) to assist Empire and its contractors to preserve and protect potential cultural resources from adverse impacts caused by Project construction, operation and maintenance, and decommissioning activities. The UDP sets forth guidelines and procedures to be used in the event potential submerged cultural resource are encountered during bottom disturbing activities and assists Empire in its compliance with Section 106 of the National Historic Preservation Act (NHPA) (Title 54 U.S.C. § 306108), Native American Graves Protection and Repatriation Act (Title 25 U.S.C. § 3001 et seg.), Lease OCS A-0512 Lease Stipulations, and other relevant state and local laws as applicable. This UDP is subject to revisions based on consultations with interested parties pursuant to Section 106 of the National Historic Preservation Act or the Act's implementing regulations at 36 CFR Part 800.

ROLES AND RESPONSIBILITIES

Implementation of the provisions and procedures in the UDP will require the coordinated efforts of Empire and their contractors during all construction, operations and maintenance, and decommissioning activities with the potential to impact the seafloor. The following sections identify key participants in the UDP and outlines their roles and responsibilities.

EMPIRE

Implementation of the provisions and procedures outlined in this plan is ultimately the responsibility of Empire or its designee, who will be responsible for the following:

- Ensuring procedures and policies outlined in the UDP and UDP training materials are implemented;
- Identifying a responsible party within Empire tasked with overseeing implementation of the UDP during all project and contractor activities;
- Developing cultural resource and UDP awareness training programs for all project staff and contractors;
- Requiring all project and contractor staff complete cultural resource and UDP awareness training;
- Coordinating and facilitating communication between the QMA, project staff, and contractors if a potential cultural resource is encountered during project activities; and
- Participating in and/or facilitating consultations with state and federal agencies (BOEM, New Jersey Historic Preservation Office [NJ HPO], New York State Parks – Division for Historic Preservation [NY SHPO], etc…), federally recognized Tribes'/Tribal Nations' Tribal Historic Preservation Offices (THPOs), and other consulting parties, as appropriate.

QUALIFIED MARINE ARCHAEOLOGIST

Empire will retain the services of a QMA to provide cultural resource advisory services during implementation of the UDP. The QMA will be responsible for the following:

- Assist Empire with the development and implementation of the procedures outlined in the UDP;
- Assist Empire in developing a cultural resource and UDP awareness training program and informational graphic;
- Review and document potential submerged cultural resources identified by the project and/or contractor staff;

- Assist Empire with the Section 106 consultation process that may arise as a result of an unanticipated submerged cultural resource; and
- Conduct archaeological investigation of unanticipated submerged cultural resources following coordination with appropriate consulting parties.

TRAINING AND ORIENTATION

As described in the previous section, Empire will be responsible for ensuring Project and contractor staff complete a cultural resources and UDP awareness training program prior to the start of bottom disturbing activities. The training will be sufficient to allow Project and contractor staff to identify common types of marine cultural resources and implement the UDP procedures. The training will be delivered as a standalone training and/or combined with the Project's or contractors' general health and safety (H&S) or environment, health, and safety (EHS) induction training.

The training program will include, but not be limited to, the following elements:

- A review of applicable state and federal cultural resource laws and regulations;
- Characteristics of common types of submerged cultural resources found on the Atlantic Outer Continental Shelf (e.g. wooden shipwrecks, metal shipwrecks, downed aircraft, post-Contact artifacts, pre-Contact artifacts, bone and faunal remains, etc.);
- How to identify potential submerged cultural resources during bottom disturbing activities; and
- Procedures to follow and parties to notify if potential submerged cultural resources/materials are encountered during project activities.

The SEARCH QMA will develop draft cultural resources and UDP awareness training in coordination with Empire. The training program will be provided to BOEM and the SHPOs for review and comment before the training program is finalized.

In additional to the training program, the SEARCH QMA will generate an informational graphic summarizing the UDP and the materials discussed in the cultural resources and UDP awareness training program. The informational graphic will include:

- Images of common types of submerged cultural resources and materials;
- A flow chart depicting the UDP reporting process;
- A notice to all employees of their stop work authority if potential cultural resources are encountered; and
- Contact information for the Empire staff responsible for overseeing implementation of the UDP and the QMA.

The informational graphic will be placed in a conspicuous location on each project and contractor vessel where workers can see it and copies will be made available to project and/or contractor staff upon request.

PROCEDURES WHEN CULTURAL MATERIAL ARE OBSERVED

As part of its COP submission, Empire conducted an extensive marine archaeological resources assessment (MARA) of the Project's preliminary area of potential effects (PAPE). The MARA identified 30 potential submerged cultural resources (Targets 01-30) and 20 ancient submerged landform features (ASLFs) (Targets 31-52) within the PAPE. Empire anticipates avoidance of Targets 01-11, 14-16, 18-24, and 26-30 and their associated recommended avoidance buffers. Empire anticipates construction activities may extend into the avoidance buffers for Targets 12-13, 17, and 25, but would avoid the actual targets. As the final design is not known, the degree of adverse effects to Targets 31-52 is currently unknown. Additionally, Empire is conducting micro-siting efforts to minimize the adverse effects to Targets 31-52. Empire is developing a Mitigation Framework to aid in avoiding, minimizing, and/or mitigating adverse effects upon historic properties.

Even with the extensive preconstruction marine archaeological surveys, it is impossible to ensure that all cultural resources have been identified within the PAPE. Even at sites that have been previously identified and assessed, there is a potential for the discovery of previously unidentified archaeological components, features, or human remains that may require investigation and assessment. Furthermore, identified historic properties may sustain effects that were not originally anticipated. Therefore, a procedure has been developed for the treatment of unanticipated discoveries that may occur during site development.

The implementation of the final UDP will be overseen by Empire and a QMA who meets or exceeds the Secretary of the Interior's *Professional Qualifications Standards for Archaeology* [48 FR 44738-44739] and has experience in conducting HRG surveys and processing and interpreting data for archaeological potential [BOEM 2020]. See **Figure 1** for a flow chart of the communications and notification plan for unanticipated discoveries.

If unanticipated submerged cultural resources are discovered, the following steps should be taken:

(1) Per Lease Stipulation 4.3.7.1, all bottom-disturbing activities in the immediate area of the discovery shall cease and every effort will be made to avoid or minimize impacts to the potential submerged cultural resource(s).
(2) The project or contractor staff will immediately notify Empire of the discovery.
(3) Empire will notify the QMA and provide them with sufficient information/documentation on the potential find to allow the QMA to evaluate the discovery and determine if the find is a cultural resource. If necessary, the QMA may request to visit the find site or the vessel that recovered the cultural material to inspect the find. If the find is a cultural resource, the QMA will provide a preliminary assessment as to its potential to be a historic property as defined in 36 CFR Part 800.
(4) Per Lease Stipulation 4.3.7.2, BOEM shall be notified of the potential submerged cultural resource within 24 hours of the discovery. Empire shall also notify the State Historic Preservation Officer (SHPO) of New Jersey and/or New York, appropriate State

Archaeologist(s), and the Tribal Historic Preservation Officers (THPOs) or other designated representatives of the consulting tribal governments.

(5) Within 72 hours of being notified of the discovery, Empire shall issue a report in writing to BOEM providing available information concerning the nature and condition of the potential submerged cultural resource and observed attributes relevant to the resource's potential eligibility for listing in the National Register of Historic Places (NRHP).

(6) Empire shall consult with BOEM, as feasible, to obtain technical advice and guidance for the evaluation of the discovered cultural resource.

(7) If the impacted resource is determined by BOEM to be NRHP eligible, a mitigation plan shall be prepared by Empire for the discovered cultural resource. This plan must be reviewed by BOEM prior to submission to the NJ HPO, NY SHPO, and representatives from consulting federally recognized Tribes/Tribal Nations for their review and comment. The NJ HPO, NY SHPO, and Tribes/Tribal Nations will review the plan and provide comments and recommendations within a one week, with final comments to follow as quickly as possible.

(8) Per Lease Stipulation 4.3.6, Empire may not impact a known archaeological resource in federal waters without prior approval from BOEM. No development activities in the vicinity of the cultural resource will resume until either a mitigation plan is executed or, if BOEM determines a mitigation plan is not warranted, BOEM provides written approval to Empire to resume bottom disturbing activities. For discoveries in state waters, Empire will not impact a known archaeological resource with prior approval from BOEM and appropriate SHPO.

If suspected human remains are encountered, the below procedures, which comply with the Advisory Council on Historic Preservation's (ACHP) *Policy Statement Regarding Treatment of Burial Sites, Human Remains and Funerary Objects*, should be followed.

(1) All work in the near vicinity of the human remains shall cease and reasonable efforts should be made to avoid and protect the remains from additional impact. Encountered potential material shall be protected, which may include keeping the remains submerged in an onboard tank of sea water or other appropriate material.

(2) The Onboard Representative shall immediately notify the County Medical Examiner, State Archaeologist(s), the Forensic Anthropology Unit of the New Jersey and/or New York State Police, and Empire as to the findings.

(3) Empire will notify the QMA and provide them with sufficient information/documentation on the potential find to allow the QMA to evaluate the discovery and determine if the find is a cultural resource. If necessary, the QMA may request to visit the vessel to inspect the potential human remains. If the find is a cultural resource, the QMA will provide a preliminary assessment. The QMA will document and inventory the remains and any associated artifacts, and assist in coordinating with federal, state, and local officials.

(4) A plan for the avoidance of any further impact to the human remains and/or mitigative excavation, reinternment, or a combination of these treatments will be developed in consultation with the State Archaeologist(s), the NJ HPO, the NY SHPO, BOEM, and appropriate Indian tribes or closest lineal descendants. All parties will be expected to

respond with advice and guidance in an efficient time frame. Once the plan is agreed to by all parties, the plan will be implemented.

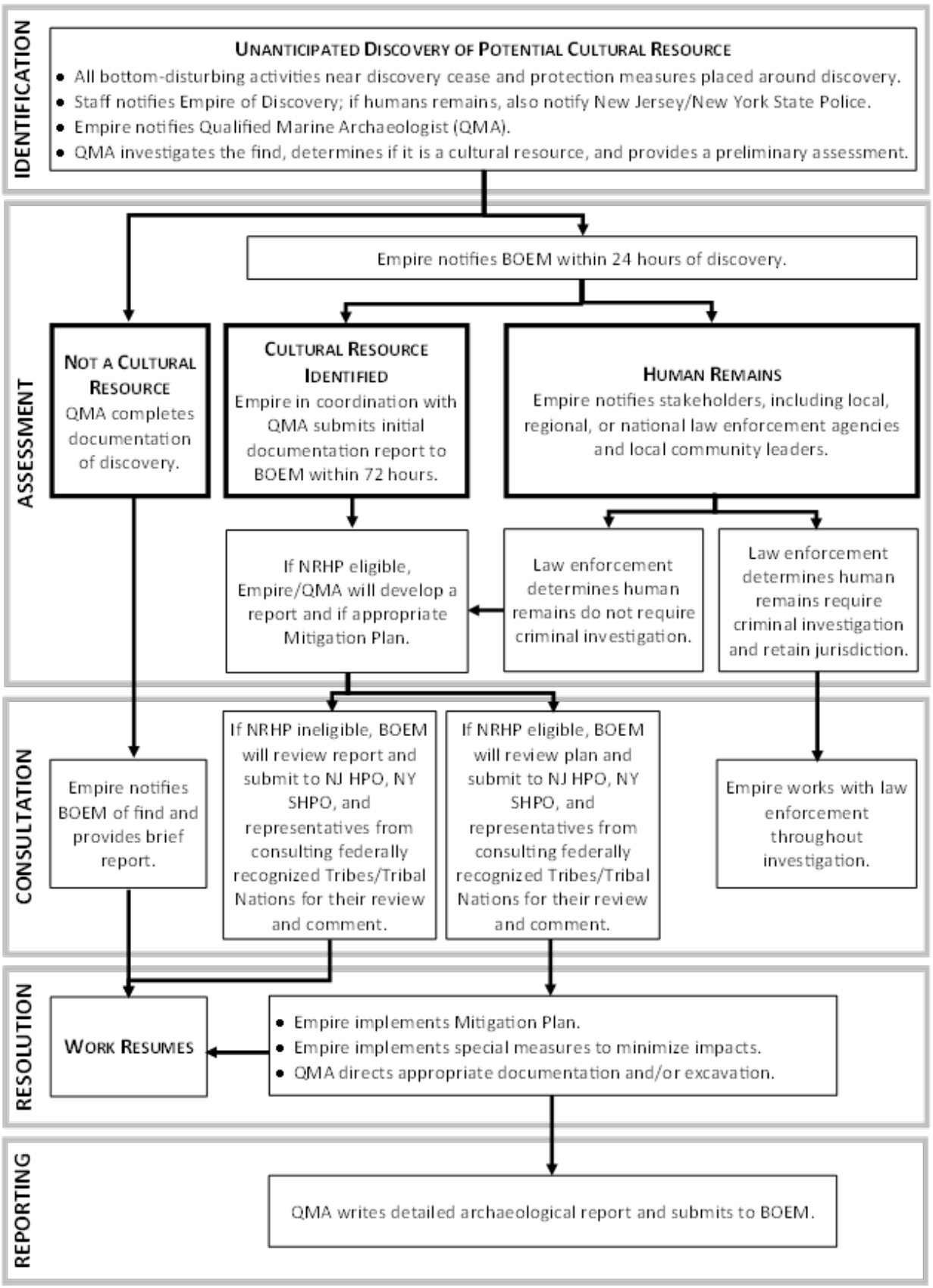


Figure 1. Communications and notification plan for unanticipated discoveries.

ARCHAEOLOGICAL INVESTIGATION OF A SUBMERGED UNANTICIPATED DISCOVERY

Archaeological investigation of a submerged unanticipated discovery may be necessary in order to evaluate the find, determine its eligibility for listing in the NRHP, and/or assess any construction impacts that may have occurred. The following is a recommended procedure for complying with the UDP and providing the BOEM and SHPO(s) with the necessary information to make informed decisions to approve continuation of bottom disturbing activities. After each step, consultation among the appropriate parties will occur.

(1) Initial assessment of unanticipated discovery via a refined HRG survey and/or ROV investigation (Phase Ia reconnaissance survey).
    a. May result in no further recommended action (i.e., target is not a historic property) or additional investigation.
(2) Develop an avoidance zone based upon Step 1.
    a. Minimally, construction activity will remain outside of the avoidance zone for a period of time necessary to allow archaeological investigation, if required.
    b. Determine whether construction activity can remain outside of the avoidance zone permanently.
(3) Identify the source, delineate the site boundary, and assess potential impacts that led to the unanticipated discovery (Phase Ib identification).
    a. Accomplished utilizing archaeological/scientific diving and/or ROV investigation.
    b. May result in no further recommended action (i.e., target is not a historic property) or additional investigation.
(4) Determine eligibility for listing in the NRHP (Phase II NRHP evaluation).
    a. Accomplished utilizing archaeological/scientific diving.
    b. May require extensive excavation.
    c. May require archival research.
(5) Develop a strategy to resolve adverse effects to the historic property that occurred as a result of the unanticipated discovery and to minimize or mitigate potential future adverse effects as construction proceeds.
(6) On-site monitoring of bottom disturbing activities at the location.

Not all of these steps may be necessary, and the appropriate course of action will be determined at the time of discovery and in consultation with BOEM and if applicable, SHPO(s).

NOTIFICATION LIST

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REFERENCES CITED

Advisory Council on Historic Preservation's (ACHP)

2007 *Policy Statement Regarding Treatment of Burial Sites, Human Remains and Funerary Objects*.https://www.achp.gov/sites/default/files/policies/2018-06/ACHPPolicyStatementRegardingTreatmentofBurialSitesHumanRemainsandFunerary Objects0207.pdf, Digital article accessed December 9, 2021.

Bureau of Empire Energy Management (BOEM)

2020 *Guidelines for Providing Archaeological and Historical Property Information Pursuant to 30 CFR Part 585.* United States Department of the Interior, Office of Renewable Energy Programs.

ATTACHMENT 7 – POST-REVIEW DISCOVERIES PLAN FOR SUBMERGED ARCHAEOLOGICALSITES, HISTORIC PROPERTIES, AND CULTURAL RESROUCES INCLUDING HUMAN REMAINS

Construction and Operations Plan
Empire Offshore Wind: Empire Wind Project
(EW 1 and EW 2)

Monitoring and Unanticipated Discoveries Plan for Terrestrial Archaeological Resources

Prepared for:

Empire Offshore Wind LLC
600 Washington Blvd, Suite 800
Stamford, Connecticut 06901

Prepared by:

6 Century Drive, Suite 300
Parsippany, NJ 07054

November 2022

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TABLES

ATTACHMENTS

ACRONYMS AND ABBREVIATIONS

APE	Area of Potential Effects
Archaeological Resource	A cultural resource that is often found below the present-day ground surface, is represented by a tool or object used by people in the past during historic periods or pre-Contact periods.
Area of Potential Effects	Locations within a project that will undergo ground-disturbing activity that may affect cultural resources.
Artifact	Object created and/or used by people during historic or pre-Contact cultural periods. Common artifacts include: pottery (broken sherds or whole vessels), metal objects, wood objects, brick, clay or wood smoking pipe (or fragments), stone tools (projectile points or stone fragments that are residuals of stone tool manufacture), items manufactured from animal bone, and remnant animal bone left from a meal or animal processing activity.
BOEM	Bureau of Ocean Energy Management
CFR	Code of Federal Regulations
Cultural Resource(s)	Aboveground structure(s), landscape(s), archaeological resources including archaeological sites, objects (artifacts), and features, and human remains and associated grave goods. May relate to the historic period or pre-Contact cultural periods associated with Native American cultural periods.
Cultural Resources Sensitivity	Likelihood of areas of a project that may contain undisturbed deposits that could contain cultural resources of interest to local professionals and /or that may be eligible to the National Register of Historic Places.
EW 1	Empire Wind 1
EW 2	Empire Wind 2
GCPM	General Contractor Project Manager
Lease Area	Renewable Energy Lease Area OCS-A 0512
LPC	Landmarks Preservation Commission
OCME	Office of the Chief Medical Examiner
Plan	Unanticipated Discoveries Plan
Qualified Professional Archaeologist [QPA]	Archaeologist whose education and training meet the criteria specified in the Professional Qualifications Standards set for an archaeological professional by the Secretary of the Interior[1]
SHPO	State Historic Preservation Office

[1] *Standards and Guidelines for Archeology and Historic Preservation* (https://www.nps.gov/subjects/historicpreservation/standards.htm; previously 36 CFR Part 61)

1. Introduction

Empire Offshore Wind LLC (Empire) proposes to construct and operate an offshore wind farm located in the designated Renewable Energy Lease Area OCS-A 0512 (Lease Area). Empire proposes to develop the Lease Area in two wind farms, known as Empire Wind 1 (EW 1) and Empire Wind 2 (EW 2) (collectively referred to hereafter as the Project). The Lease Area covers approximately 79,350 acres (32,112 hectares) and is located approximately 14 statute miles (12 nautical miles, 22 kilometers) south of Long Island, New York and 19.5 miles (16.9 nautical miles, 31.4 kilometers) east of Long Branch, New Jersey.

EW 1 and EW 2 will be electrically isolated and independent from each other. Each wind farm will connect via offshore substations to separate Points of Interconnection at onshore locations by way of export cable routes and onshore substations. In this respect, the Project includes two onshore locations in New York where the renewable electricity generated will be transmitted to the electric grid.

A Construction and Operations Plan was submitted to the Bureau of Ocean Energy Management (BOEM) in January 2020 and revised in September 2020, April 2021, July 2021, and May 2022, as required by 30 Code of Federal Regulations (CFR) Part 585. BOEM's approval of the Construction and Operations Plan, allowing for construction and operations of the Project, is contingent in part on the completion of archaeological investigations to identify potentially significant archaeological resources, which may be subject to disturbances due to Project activities within the area of potential effects (APE; 30 CFR § 585.626(a)(5)). The APE will be defined by BOEM through the Section 106 process, therefore, this report describes the preliminary APE, as identified by Tetra Tech, Inc. (Tetra Tech).

Project activities at EW 1 will include an export cable landfall, installation of an onshore export and interconnection cable route, and construction of an onshore substation. An O&M Base is also proposed to be constructed adjacent to the EW 1 onshore substation at SBMT. While the O&M Base will serve both EW 1 and EW 2, it is included within the EW 1 Onshore Study Area for the purposes of the Construction and Operations. Project activities at EW 2 will include an export cable landfall, installation of an onshore export and interconnection cable route, and construction of an onshore substation.

1.1 Purpose

This document provides protocols to be followed in the event that ground-disturbing activities during construction activities at EW 1 and EW 2 result in the unanticipated discovery of:

- Cultural materials (i.e., objects or deposits of possible archaeological or historical importance); or
- Human remains.

This Monitoring and Unanticipated Discoveries Plan (Plan) was prepared by Tetra Tech, contractor to Empire, the Project proponent.

The stipulations of the Plan as set forth below are in accordance with current federal, state, and city statutes, regulations, and guidelines as listed:

- Federal Guidelines and Regulations:
    - Sections 106 and 110 of the National Historic Preservation Act, as amended (54 United States Code 306108 and 306101 *et seq.*);
    - Secretary of the Interior's Standards for Archaeology and Historic Preservation (48 CFR 44716-42);

- Advisory Council for Historic Preservation: Policy Statement Regarding Treatment of Burial Sites, Human Remains, and Funerary Objects (February 23, 2007); and
- Native American Graves Protection and Repatriation Act (25 United States Code 3001 *et seq.*).

- New York State Guidelines and Regulations:
  - The New York State Historic Preservation Act of 1980 (§ 14.09 of the New York State Parks, Recreation and Historic Preservation Law), and its implementing regulations at 9 NYCRR 426-428; and
  - New York State Historic Preservation Office (SHPO)/New York State Office of Recreation and Historic Preservation, *Human Remains Protocol*[2]

- New York City Guidelines and Regulations:
  - Landmarks Preservation Commission, Guidelines for Archaeological Work in New York City.[3]

1.2 Training

Empire will advise all construction personnel on the procedures to follow if cultural resources (i.e., archaeological sites, objects [artifacts], and features, related to the historic period or pre-Contact cultural periods associated with Native American cultural periods) or human remains (i.e., whole or fragmented, articulated, or disarticulated human bone, teeth, hair, or preserved soft tissue) are revealed during construction activities. Training will occur as part of the on-site training program for all construction personnel. Consulting party Tribal Nations will be invited to participate in the on-site training program.

Training of construction personnel should be conducted by a professional archaeologist who meets the Secretary of Interior's Professional Qualification Standards (36 CFR Part 61) for archaeology. Training should include:

- A brief overview of the history of the region and description of the nature and type of archaeological resources that may be encountered within the Project's APE, including historic and precontact artifacts, deposits, and features;
- A description of the procedures for unanticipated archaeological discoveries and human remains encountered during Project construction activities, and reporting requirements, as detailed within this Plan;
- Review and education on federal and state laws protecting cultural resources;
- A review of BOEM's responsibility to identify and protect cultural resources and resource integrity; and

A review of the consequences of failing the cultural resources monitoring protocol.Copies of this Plan will be incorporated into all relevant construction documents and will be available in hard copy format onsite during construction. The training will emphasize the procedures to follow if an unanticipated discovery is encountered during Project construction. Appropriate educational handouts will be developed for the training and posted in the field office(s) illustrating the unanticipated discovery procedures and types of artifacts that could be encountered.

[2] August 2018, https://parks.ny.gov/shpo/environmental-review/documents/HumanRemainsProtocol.pdf
[3] September 2018, https://www1.nyc.gov/assets/lpc/downloads/pdf/2018_Guidelines%20for%20Archaeology_Final_high%20res.pdf

All contractor personnel who will work onsite must be aware of this Plan and its procedures. They should be informed of the potential for discovery of archaeological resources that may be exposed during Project construction. Additional trainings will be conducted throughout construction activities as new contractor personnel are added to the Project. Refresher training(s) may also be conducted as deemed necessary by Empire or by the Archaeological Monitor descried in Section 1.4.

1.3 Documentation

A copy of this Plan will be available in each field office at all times during construction activities. At least one hardcopy of the environmental compliance documents, including this Plan, or electronic copy on a tablet or phone, will also be available at the construction site at all times when construction crews are present, for immediate reference to the applicable procedures.

The General Contractor Project Manager (GCPM) will maintain a log with the names and signatures of contractor personnel who have read this Plan. The GCPM will be responsible for compliance with the provisions of this Plan including coordination with city and state representatives responsible for this Project and coordination with appropriate stakeholders as may be required.

1.4 Archaeological and Tribal Monitors

At least one archaeological monitor will be assigned for onshore construction activities, and the archaeological monitor will be present onsite at all times during onshore Project construction. Tribal Monitors may also request to be onsite (at their discretion) per the ongoing consultation for this Project. When Tribal Monitors request to be onsite, the Archaeological Monitor will coordinate logistics with ensuring proper access, safety, training and timelines for participation of any Tribal Monitors.

1.4.1 Process for Determining if Monitoring a Construction Activity is Necessary

Archaeological monitoring will be conducted during construction activities during onshore Project construction, including in identified areas of cultural resources sensitivity within the onshore Project area. Per the Terrestrial Archaeological Resources Assessment, archaeological monitoring will be conducted in an area of the Empire Wind 2 Project in the northern portion of Barnum Island. Specifically, archaeological monitoring will be conducted within the following seven potential locations during construction phase excavation of the onshore export cable trench:

- An approximately 1,000-ft (300-m) section of EW 2 Route IP-A from the intersection of Williams Lane and Long Beach Road to the intersection of Long Beach Road and the Long Island Railroad in the incorporated village of Island Park and the unincorporated hamlet of Barnum Island, Town of Hempstead, Nassau County, New York. Tetra Tech recommends monitoring be undertaken from the vicinity of No. 520 Long Beach Road (latitude 40.610198ºN, longitude -73.650853ºW) northeastward along Long Beach Road to the vicinity of the intersection of Long Beach Road and the Long Island Railroad (latitude 40.611958ºN, longitude -73.648596ºW).

- An approximately 330-ft (100-m) section of EW 2 Route IP-B at the southern terminus of Parente Lane North northward to the intersection of IP-B with IP-C, in the unincorporated hamlet of Barnum Island, Town of Hempstead, Nassau County, New York. Tetra Tech recommends monitoring undertaken from a point near the southern terminus of Parente Lane North (latitude 40.609920ºN, longitude -73.648570ºW) to the corridor's junction with EW 2 Route IP-C (latitude 40.610805ºN, longitude -73.648451ºW).

- An approximately 650-ft (200-m) section of EW 2 Route IP-C from the intersection of Saratoga Boulevard and Sherman Road, under the Long Island Railroad, to the intersection of IP-C with IP-A at Long Beach Road, then northeastward to the intersection of Long Beach Road and, in the unincorporated hamlet of Barnum Island, Town of Hempstead, Nassau County, New York. Tetra Tech recommends monitoring be undertaken from the vicinity of No. 33 Saratoga Boulevard (latitude 40.610690°N, longitude -73.647847°W) northward along D'Amato Drive to the intersection of Long Beach Road and the Long Island Railroad (latitude 40.611911°N, longitude -73.648633°W).

- An approximately 370-ft (112-m) section of EW 2 Route IP-F from near No. 11 Parente Lane North to the intersection of Kildare Road in the unincorporated hamlet of Barnum Island, Town of Hempstead, Nassau County, New York. Tetra Tech recommends monitoring undertaken from a point opposite No. 11 Parente Lane North (latitude 40.610487ºN longitude -73.648496ºW) north and westward along Parente Lane North to the intersection of Kildare Road and Parente Lane North (latitude 40.610855ºN, longitude -73.649474ºW).

- An approximately 110-ft (35-m) section of EW 2 Route IP-F along Kildare Road from the intersection of Parente Lane North northward to the intersection of Long Beach Road in the unincorporated hamlet of Barnum Island, Town of Hempstead, Nassau County, New York. Tetra Tech recommends monitoring undertaken from the intersection of Parente Lane North (latitude 40.610855ºN, longitude -73.649474ºW) to the intersection of Long Beach Road (latitude 40.611188ºN, longitude -73.649505ºW).

- An approximately 475-ft (145-m) section of EW 2 Route IP-F along Long Beach Road from the intersection of Kildare Road northeastward to the intersection of North Nassau Lane with Waterford Road in the unincorporated hamlet of Barnum Island, Town of Hempstead, Nassau County, New York. Tetra Tech recommends monitoring undertaken from the intersection of Long Beach Road and Kildare Road (latitude 40.611188ºN, longitude -73.649505ºW) to the intersection of Waterford Road and North Nassau Lane (latitude 40.612314ºN, longitude -73.649209ºW).

- An approximately 800-ft (245 m) section of EW 2 Route IP-G along Long Beach Road from the intersection of Sherman Road northeastward to the intersection of Long Beach Road and McCarthy Road in the unincorporated hamlet of Barnum Island, Town of Hempstead, Nassau County, New York. Tetra Tech recommends monitoring undertaken from the intersection of Long Beach Road and Sherman Road (latitude 40.612256ºN, longitude -73.648163ºW) to the intersection of Long Beach Road and McCarthy Road (latitude 40.613648ºN, longitude -73.646087ºW).

If the construction contractor is unsure whether archaeological monitoring is necessary for a specific activity or location, the construction contractor will contact the Archaeological Monitor. The Archaeological Monitor will consult with BOEM cultural resources staff to determine if monitoring of the activity/location is necessary. If deemed necessary by BOEM, the Archaeological Monitor will be present onsite for onshore construction activities. Additionally, Tribes may request cultural monitoring by the Archaeological Monitor in areas they deem to be culturally sensitive. Tribes may also request that a Tribal Monitor be present during onshore construction activities.

1.5 Reporting

The Archaeological Monitor submit a weekly update via email. Weekly updates via email will be submitted at the end of day every Friday, providing a summary of the week's activities, indicating if archaeological monitoring was conducted and will provide a look-ahead of upcoming activities for the following week. The weekly

summary will also include photographs of the construction work activities, as appropriate. During weeks where archaeological monitoring was not required, the weekly email will indicate as much. The weekly email will be sent to BOEM, NY SHPO, Consulting Tribal Nations, and the Empire.

The Archaeological Monitor will prepare a monitoring report, which will be submitted to the consulting parties following the completion of onshore construction activities. The monitoring report for onshore construction will be provided to the consulting parties no later than three (3) months following completion of the onshore construction activities.

2. Potential Discoveries and Effects of Project Activities

An Archaeological Monitor who satisfies the Secretary of the Interior's Standards for Qualified Professional Archaeologist (QPA) will be present onsite at all times during onshore Project construction. This Plan provides procedures to be followed if cultural materials, including archaeological artifacts, features, and human remains and funerary objects, are revealed during Project construction. The Plan ensures that finds of potential archaeological interest will be reported in a timely manner, evaluated professionally, and recorded as appropriate to prevent the inadvertent loss of historical information and destruction of objects and features of archaeological value in accordance with federal, state, and city laws and guidelines.

Anticipated cultural remains may include stone or bone materials that may represent artifacts related to former Native American presence in the area and historic period artifacts that may include glass, metal, pottery, and faunal remains.

The Plan has specifically been developed to guide engineering staff and contractors, under the supervision of the QPA, in how to respond to the unplanned discovery of objects, features, or remains of potential historical and archaeological interest during ground-disturbing construction activities.

3. Notification and Assessment Procedures (Not Including Human Remains)

The following steps outline the protocols to be taken in the event an unanticipated discovery is made during Project construction:

1. If any member of the work force believes that he/she has found an archaeological resource, they shall stop work in the area of discovery and immediately contact the Archaeological Monitor.

2. An archaeological resource discovery could consist of, but is not limited to:

    - An area of charcoal or charcoal-stained soil below the topsoil level;
    - Arrowheads, stone tools, or chips of stone produced by stone tool manufacture and similar debris;
    - Burned rocks in association with stone tools or debitage; or
    - Cans, bottles, or other historic artifacts older than 100 years.

3. No work shall occur at the location of the find or within a buffer area 50 feet in radius around the find until the area has been evaluated by the onsite qualified professional archaeological monitor (the "QPA"). The Archaeological Monitor will expand the 50-foot buffer if deemed necessary.

4. The person in charge of the work area will take appropriate steps to protect the area of discovery by installing a physical barrier such as exclusionary fencing. Prohibit vehicles, equipment, and unauthorized persons from traversing the area of discovery. The area of work stoppage will be adequate to provide for the security, protection, and integrity of the resource.

5. The QPA will promptly digitally photograph the find (use a scale in the photograph) and contact the GCPM. Within the next 24 hours, the QPA will evaluate the discovery and confirm or refute that the find may represent an archaeological discovery. If the QPA confirms that the find(s) represent an archaeological discovery, the QPA will inform Empire to inform BOEM, and will coordinate in notifying the Landmarks Preservation Commission (LPC) and NY SHPO, as appropriate.

6. BOEM will advise the NY SHPO and LPC of the find, and as appropriate will notify the consulting party Tribal Nations if the resource relates to a pre-Contact time period.

7. The QPA will recommend whether the discovery is potentially eligible for listing in the National Register of Historic Places. BOEM, NY SHPO, Empire, and the QPA will make a good faith effort to accommodate requests from the appropriate Native American nation(s) if they request to be present during the implementation of assessments related to archaeological resources determined to be of Native American origin.

8. Within 24 hours following consultation with NY SHPO and LPC, the QPA will develop a draft treatment plan.

9. If the discovery appears to be related to Native American occupation, the BOEM will consult with NY SHPO and the consulting party Tribal Nations, if the resource relates to a pre-Contact time period, to discuss recommended treatment(s).

10. The QPA will prepare a letter report to describe the situation, observations, treatment recommendations, and results of treatment implementation.

11. Empire will provide a copy of the final report describing the treatment actions and results to BOEM for approval. BOEM will be responsible for transmitting reports and coordinating comments to and from the NY SHPO, LPC, consulting party Tribal Nations, if the resource relates to a pre-Contact time period, and other stakeholders, if appropriate.

12. After acceptance of the report by BOEM, NY SHPO, the LPC (as appropriate), and other appropriate stakeholders and implementation of the agreed upon treatment, Empire will inform the GCPM that construction in the area of the discovery may resume.

4. Notification and Assessment Procedures (Human Remains)

Human remains are physical remains of a human body or bodies including, but not limited to, bones, teeth, hair, and preserved soft tissues (mummified or otherwise preserved) of an individual. Remains may be articulated or disarticulated bones or teeth. Disturbance of human remains, burial places and or burial offerings and other grave furnishings without appropriate permits is a felony in New York State.

Any human remains discovered shall always be treated with the utmost dignity and respect, and information about the find shall be treated as confidential. No photographs shall be taken of human remains and no contact with press or via social media shall occur.

The following steps are based on "Burials and Human Remains: Detailed Discovery Procedures," Section D of the LPC's *Guidelines for Archaeological Work in New York City* (September 2018). In addition, the steps conform to the SHPO's "Human Remains Discovery Protocol" (August 2018). Both are included as **Attachment A**. These protocols should be followed in the event an unanticipated discovery of human remains is made during Project construction. The Notifications and Contacts List is provided in **Section 5**.

1. If any member of the work force believes he/she has made an unanticipated discovery of human remains, the worker shall immediately stop work in the area of discovery and its immediate surroundings and immediately contact the Archaeological Monitor.

2. No work shall occur at the location of the find or within a buffer area 50 feet in radius around the find until the area has been evaluated by law enforcement, and, if deemed to be not of forensic interest, by a qualified professional archaeologist. The Archaeological Monitor will expand the 50-foot buffer if deemed necessary.

3. As possible, human remains and associated artifacts will be left in place and not disturbed. No human remains or materials associated with the remains will be collected or removed until evaluation by law enforcement and after appropriate consultations have taken place, if deemed to be not of forensic interest.

4. Immediately upon discovery, the worker who made the discovery will notify the person in charge of the relevant work area.

5. The QPA will, after confirming that work has stopped in the vicinity of the find, immediately notify the GCPM and Empire of a find of possible human remains.

6. The person in charge of the work area will promptly, and before the end of the current work shift, protect the area of the discovery by installing a physical barrier such as exclusionary fencing, and prohibiting vehicles, equipment, and unauthorized persons from traversing the discovery location. The area must be adequate to provide for the security, protection, and integrity of the remains.

7. Once notified of the discovery of human remains, Empire will immediately contact BOEM and NY SHPO, call the New York City Police Department at 911 and Office of Chief Medical Examiner (OCME)—Forensic Anthropology Unit, and the Archaeology Director of the LPC.

8. Empire will request the QPA to review the discovery, and develop recommendations for follow-up. The QPA will not interfere with the context of the discovery (if found in-situ) prior to review by law enforcement, BOEM, NY SHPO, and LPC. The QPA will visit the site within 48 hours of the discovery, in coordination with Empire.

9. If the discovery is of forensic interest, the OCME will direct all next steps.

10. If the discovery is deemed to be not of forensic interest by OCME, then BOEM, with assistance from LPC, Empire, and the QPA, will obtain an agreement with interested parties regarding the disinterment and re-interment of the remains if necessary.

11. The QPA will develop a draft treatment plan to address the discovery. The QPA will present the draft treatment plan to Empire within 48 hours following the site visit. Empire will provide the treatment plan to BOEM, NY SHPO, and LPC, as appropriate.

12. Empire and the QPA will assist BOEM and LPC in obtaining a New York City Department of Health permit for disinterment of the remains.

13. BOEM will advise LPC and NY SHPO of the find, and as appropriate will notify the consulting party Tribal Nations nations if the remains are determined to be of Native American origin. Notifications to consulting party Tribal Nations will occur promptly.

14. If the remains are determined to be archaeological (not forensic), they will be left in place (if found in place) and protected from all disturbance. If the remains were discovered not in place, the QPA and other parties will seek to determine their onsite source and will assess the potential that additional remains might still be present at that source.

15. Empire, BOEM, and NY SHPO will make a good faith effort to accommodate requests from interested consulting party Tribal Nations (e.g., that Native American representative will be present during the implementation of archaeological assessments related to human remains determined to be of Native American origin).

16. If disinterment of Native American human remains is necessary, BOEM and coordinating agencies (NY SHPO, LPC, and the appropriate consulting party Tribal Nations) will jointly determine the appropriate mitigation measures including custodianship of the human remains. All decisions shall be documented and signed by all participating parties.

17. If the human remains are determined to be non-Native American, BOEM will consult with the LPC, NY SHPO, and other appropriate stakeholders to determine a plan of action.

18. All actions taken will be described in a letter report written by the QPA. The letter report will be provided to Empire and BOEM. BOEM will be responsible for distributing reports and other documentation to the LPC, NY SHPO, and as appropriate, consulting party Tribal Nations.

19. After completion of the consultation and implementation of agreed upon treatment plan, Empire will inform the GCPM that construction work may resume in the area of the discovery.

5. Notifications Contacts List

Table 1 Unanticipated Discoveries Plan Contacts Table

General Contractor Project Manager (GCPM)	
General Contractor Project Manager (GCPM) (To be filled out upon selection of general contractor) Name: Street address: City, state ZIP: Tel # office: Tel # cell: Email:	General Contractor Project Manager (GCPM) - Alternate (To be filled out upon selection of general contractor) Name: Street address: City, state ZIP: Tel # office: Tel # cell: Email:
Bureau of Ocean Energy Management (BOEM)	
Marine Archaeologist Christopher Horrell 45600 Woodland Rd Sterling, VA 20166 Email: christopher.horrell@boem.gov	Lead Historian Sarah Stokely 45600 Woodland Rd Sterling, VA 20166 Email: sarah.stokely@boem.gov
Project Archaeologist Laura Schnitzer 45600 Woodland Rd Sterling, VA 20166 Email: laura.schnitzer@boem.gov	
Tetra Tech, Inc.	

Project Archaeologist (PA)
Rob Jacoby, M.A., RPA
Cultural Resources Specialist
6 Century Drive, Suite 300
Parsippany, NJ 07054
Tel: (973) 630-8371
Cell: (973) 271-6416
Email: rob.jacoby@tetratech.com

New York City Landmarks Preservation Commission

Amanda Sutphin, RPA
Director of Archaeology
NYC Landmarks Preservation Commission
One Centre Street – 9th Floor North
New York, NY 10007
Tel: (212) 669-7823
Cell: (347) 556-1296
Email: asutphin@lpcnyc.gov

Alternate
Name: Timothy Frye
Director of Special Projects and Strategic Planning
NYC Landmarks Preservation Commission
One Centre Street – 9th Floor North
New York, NY 10007
Tel: (212) 669-7855 *(front desk)*
Email: tfrye@lpc.nyc.gov

State Historic Preservation Office

Nancy Herter
Coordinator – Archaeology Review
New York State Historic Preservation Office (SHPO)
Peebles Island Resource Center
P.O. Box 189
Waterford, NY 12188-0189
Tel: (518) 268-2185
Email: *Use Cultural Resources Information System (CRIS)*

Interested Native American Nations

Delaware Tribe
Susan Bachor, M.A.
Archaeologist
Delaware Tribe Historic Preservation
126 University Circle, Rm. 437
East Stroudsburg, PA 18301
Tel.: (610) 761-7452
Email: sbachor@delawaretribe.org

Delaware Nation
Dana Kelly
Archive Asst./106 Asst.
31064 State Highway 281, PO Box 825
Anadarko, OK 73005
Tel: (405) 247-2448 ext.1407
Email:dkelly@delawarenation.com

Delaware Nation
Erin Thompson Paden
Historic Preservation Director
31064 State Highway 281, PO Box 825
Anadarko, OK 73005
Tel.: (405) 247-2448 ext. 1403
Email: epaden@delawarenation-nsn.gov

Delaware Nation *(To be cc'd, with attachments)*
Nekole Alligood
NAGPRA Projects Officer Delaware Nation
103 W. Broadway
Anadarko, OK 73005
Tel.: (405) 247-1177
Email: NAlligood@delawarenation.com

Shinnecock Indian Nation Chairman Randy King PO Box 5006 Southampton, NY 11969 Tel: (631) 283-6143 Email: adminoffice@shinnecock.org	Shinnecock Indian Nation Josephine Smith Director of Cultural Resources PO Box 5006 Southampton, NY 11969 Tel: (631) 283-6143. Email: JosephineSmith@Shinnecock.org
Interested Native American Nations (continued)	
Shinnecock Indian Nation Lori Gomez Executive Director of Tribal Operations PO Box 5006 Southampton, NY 11969 Tel.: (631) 283-6143 Email:LoriGomez@shinnecock.org	Shinnecock Indian Nation Kyle Cause Office & Records Manager PO Box 5006 Southampton, NY 11969 Tel.: (631) 283-6143 Extension #9 Email: KyleCause@shinnecock.org
Stockbridge Munsee Community Band of Mohican Indians Nathan Allison Tribal Historic Preservation Officer Stockbridge-Munsee Mohican Tribal Historic Preservation Extension Office 65 1st Street Troy, NY 12180 Tel.: (518) 244-6891 Email: nathan.allison@mohican-nsn.gov	Unkechaug Indian Nation Harry Wallace (Chief) 151 Poospatauck Lane Mastic, NY 11950 Tel.: (631) 281-6464 Email: unkechaugnation@gmail.com
Law Enforcement Contacts	
New York Police Department Tel: 911 (**for emergencies only**, *including discovery of human remains*) Tel: 311 *(for non-emergencies*)	
Nassau County Police Department Tel: 911 (**for emergencies only**, *including discovery of human remains*) Tel: 311 (*for non-emergencies*)	
New York City Office of Chief Medical Examiner (OCME) Forensic Anthropology Unit	
New York City Office of Chief Medical Examiner 520 First Avenue New York, NY 10016 Attn: Department of Forensic Anthropology Tel.: 212-227-2030; *ask for the Forensic Anthropology Unit*	
Nassau County Office of Chief Medical Examiner (OCME)	
Nassau County Medical Examiner 2251 Hempstead Turnpike East Meadow, NY 11554 Tel: (516) 572-6400	

Attachment A
SHPO and LPC Guidance Related to Discovery of Human Remains

Burials and Human Remains: Detailed Discovery Procedures

Likely shroud pins from the Tweed Courthouse Excavations in the collections of the NYC Archaeological Repository.

Human remains should be treated with great care and respect. When human remains are encountered during archaeological projects, it is often as primary burials or as fragmentary remains. Section D.1 discusses LPC protocols for the treatment of human remains found during archaeological investigations. Section D.2 addresses the treatment of human remains found unexpectedly.

Identified Potential for Human Remains in a Project Area

Whenever human remains are encountered in New York City, work must cease in the area and the New York Police Department (NYPD) immediately notified at 911. The Office of Chief Medical Examiner (OCME) must also be contacted at 212-447-2030 (ask for the Forensic Anthropology Unit). If OCME determines the discovery is of forensic interest, then they will direct all next steps. Further work cannot occur until OCME provides direction. LPC must be alerted to any discoveries on projects under its review at 212-669-7817 (see Section C.6.3). In addition, should human remains need to be disinterred, reinterred, or moved within New York City, the Department of Health (DOH) must issue a permit which may only be secured by a licensed funeral director.

Whenever proposed work is due to occur in an area that is identified as having the potential to contain human remains, LPC should be contacted as early as possible in the planning stages so that the appropriate project-specific archaeological methods and protocol governing the work can be developed. Projects requiring federal or state review must contact NY SHPO. In general, NY SHPO should also be contacted for questions about the Native American Graves Protection and Repatriation Act.

The documentary research should have indicated if a project has the potential to contain human remains **AND** identified the appropriate descendant

group(s), including Indian Nations, descendant churches, families, etc. Once identification has been made, the applicant needs to consult with the descendant group(s) about the proposed work, what to do with any remains that may be found at the time of discovery, and what should ultimately be done with the remains.

D.1.1
Personnel Qualifications

A qualified archaeologist must be present for all phases of excavation in an area that may contain human remains. Areas with potential for graves must be hand-excavated by the qualified archaeological staff. During subsequent site preparation, construction, and post-construction restoration any work within an area that may contain human remains should be monitored by a qualified archaeologist.

A qualified **physical anthropologist** must be available to come to the field as needed to identify and appropriately treat any human remains that may be encountered during archaeological investigation or construction work. This individual must have a graduate degree in a relevant field and significant research experience with human remains found in archaeological contexts. LPC maintains a list of physical anthropologists which will be provided upon request. LPC will review the qualifications of any individual who is not on the list to ensure that he/she has sufficient experience. Note that there are individuals who may be qualified both as an archaeologist and a physical anthropologist. In that case, only one such professional is needed for the project. In all others, at least two professionals, a PI and a physical anthropologist, will be needed.

D.1.2
Work Plan

For projects that are identified as having the potential to contain human remains, the work plan must include the following in addition to what is noted in Section C.1. It must describe the type and extent of physical anthropological study and if any special provisions have been agreed to in consultation with the descendant community. It must also define the reporting obligations of the archaeologist and the physical anthropologist. Once any human remains have actually been found, the physical anthropologist should submit a scope for analysis to LPC that delineates the actual analysis to be completed. This analysis should, when possible, identify the minimum number of individuals the bones may represent, sex, age, cause of death, pathology, etc. LPC recommends that remains be reinterred in consultation with descendant communities and interested parties.

The work plan must also note how the project will consult with the Office of Chief Medical Examiner, Forensic Anthropology Unit (which can be reached at anthropology@ocme.nyc.gov) when human remains are found—as they must be. In general, the principal archaeologist should provide the unit with digital photographs that clearly show the discovery and include a scale, a synthesis of the history of the site, a project map showing the discovery location, and information about any related artifacts that were uncovered such as coffin nails or personal items such as buttons and jewelry. The Unit will determine what, if any, further involvement they wish to have with the project.

D.1.3
Preservation of Primary Burials in Place

As a general policy, LPC recommends that primary burials be left in place and that projects be redesigned to avoid disturbing them. The project must be planned in a manner that attempts to avoid disturbing primary burials. In the work plan, the PI must document the location of known graves, whether marked or unmarked, using such references as the plans of the cemetery, historic descriptions, photos, and other sources. In cases where documentation does not exist, remote sensing technology may be used. Mechanical stripping is strongly discouraged, as is any type of probe such as borings.

D.1.4

Disposition of Human Remains

The project's work plan must include the protocol for temporary and permanent disposition of human remains found in the course of the project. The protocol should designate how and where remains will be temporarily stored, what the consultation process with descendant communities and interested parties will be, curation plans, and plans for the permanent disposition (e.g., reburial on or off the site or permanent curation). If permanent curation is proposed then the descendant community must agree to such an option. Applicants should note that LPC will need to review and approve any proposal to put an exterior marker or memorial in a designated historic district, scenic landmark, or individual landmark.

Unanticipated Discovery of Human Remains

In the event that primary burials or fragmentary remains are found in New York City, the following actions should be taken immediately:

1. **STOP WORK at the location of the find and for a distance of 50 feet around the find.**

2. **Immediately call the New York Police Department at 911 and Office of Chief Medical Examiner at 212-227-2030** and ask the operator to direct the call to the Forensic Anthropology Unit. If the project is under the review of LPC or was reviewed by LPC, call **212-669-7817** or the LPC general number at 212-669-7855.

OCME will make a determination of forensic significance.

If disarticulated bone or human bone fragments are found after they have been excavated, secure the area and call NYPD and OCME as noted above. If the discovery is made once the remains are in the laboratory, secure the remains and contact OCME to determine next steps.

If OCME determines that the site is of forensic interest, they will direct all next steps. If they determine that it is not, then an agreement between the landowner and other interested parties should be developed. If the project location is under LPC review, LPC will assist in the development of the agreement. If it is not, LPC will offer assistance. A New York City Department of Health permit is required for the disinterment and reinterment of all human remains. DOH may be contacted at: nycdohvr@health.nyc.gov.

State Historic Preservation Office/
New York State Office of Parks, Recreation and Historic Preservation
Human Remains Discovery Protocol
(August 2018)

If human remains are encountered during construction or archaeological investigations, the New York State Historic Preservation Office (SHPO) recommends that the following protocol is implemented:

- Human remains must be treated with dignity and respect at all times. Should human remains or suspected human remains be encountered, work in the general area of the discovery will stop immediately and the location will be secured and protected from damage and disturbance.

- If skeletal remains are identified and the archaeologist is not able to conclusively determine whether they are human, the remains and any associated materials must be left in place. A qualified forensic anthropologist, bioarchaeologist or physical anthropologist will assess the remains in situ to help determine if they are human.

- No skeletal remains or associated materials will be collected or removed until appropriate consultation has taken place and a plan of action has been developed.

- The SHPO, the appropriate Indian Nations, the involved state and federal agencies, the coroner, and local law enforcement will be notified immediately. Requirements of the corner and local law enforcement will be adhered to. A qualified forensic anthropologist, bioarchaeologist or physical anthropologist will assess the remains in situ to help determine if the remains are Native American or non-Native American.

- If human remains are determined to be Native American, they will be left in place and protected from further disturbance until a plan for their avoidance or removal can be generated. Please note that avoidance is the preferred option of the SHPO and the Indian Nations. The involved agency will consult SHPO and the appropriate Indian Nations to develop a plan of action that is consistent with the Native American Graves Protection and Repatriation Act (NAGPRA) guidance. Photographs of Native American human remains and associated funerary objects should not be taken without consulting with the involved Indian Nations.

- If human remains are determined to be non-Native American, the remains will be left in place and protected from further disturbance until a plan for their avoidance or removal can be generated. Please note that avoidance is the preferred option of the SHPO. Consultation with the SHPO and other appropriate parties will be required to determine a plan of action.

- To protect human remains from possible damage, the SHPO recommends that burial information not be released to the public.

ATTACHMENT B
FIGURES

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Marine Archaeological APE Figures

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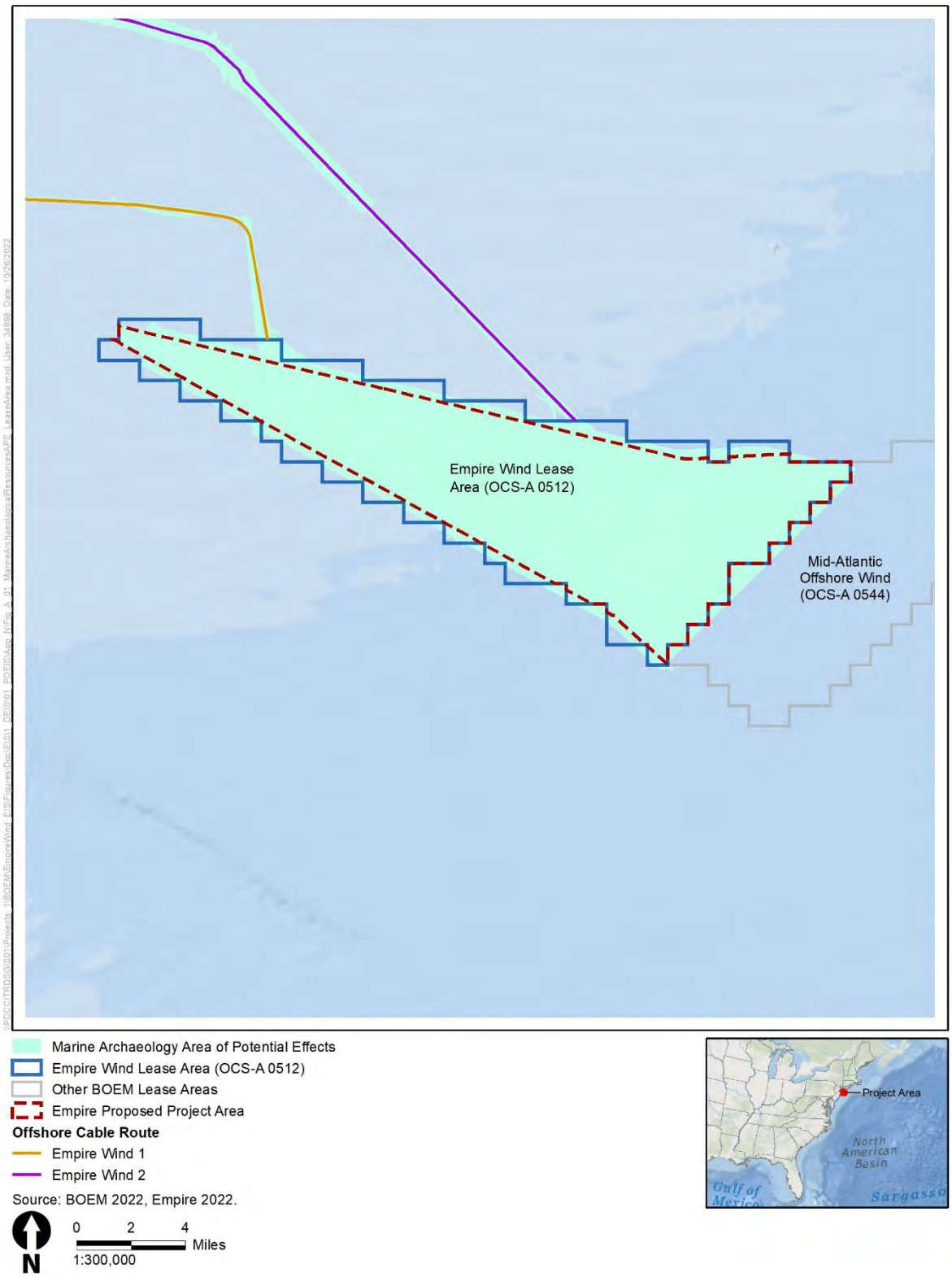

Figure 1 Marine Archaeological Resources APE for Activities within the Lease Area

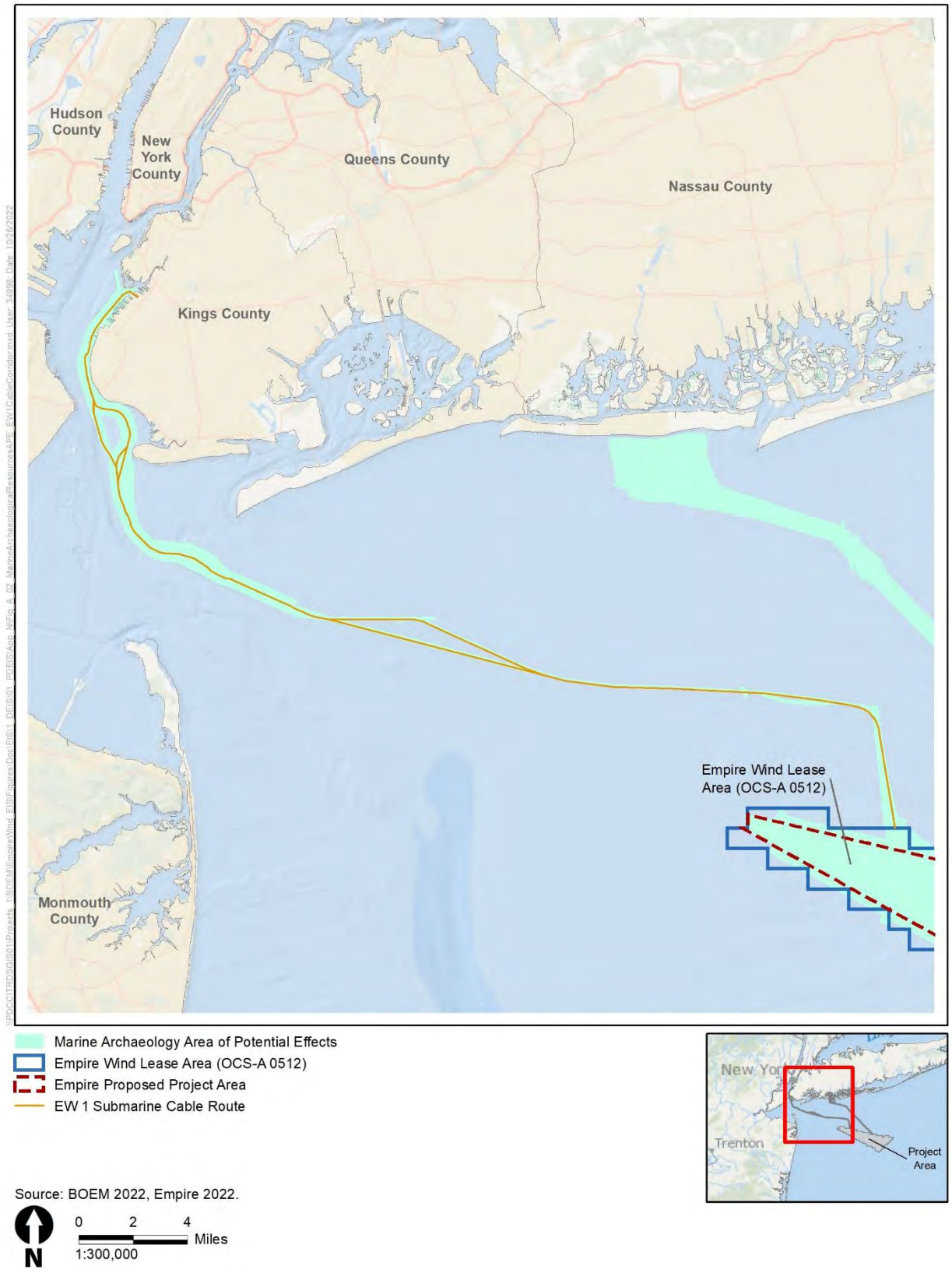

Figure 2 Marine Archaeological Resources APE for Activities within the EW 1 Cable Route Corridor

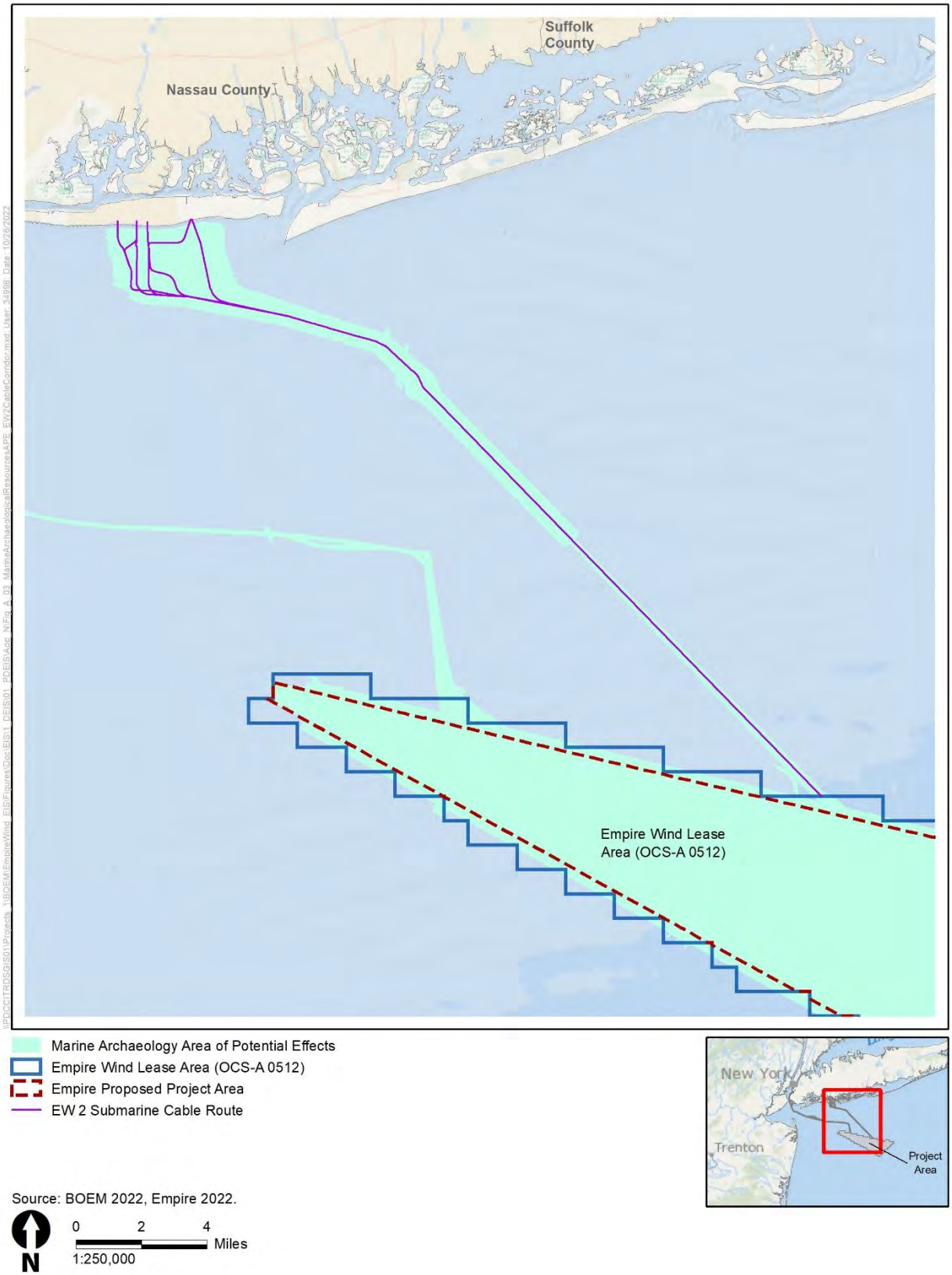

Figure 3 Marine Archaeological Resources APE for Activities within the EW 2 Cable Route Corridor

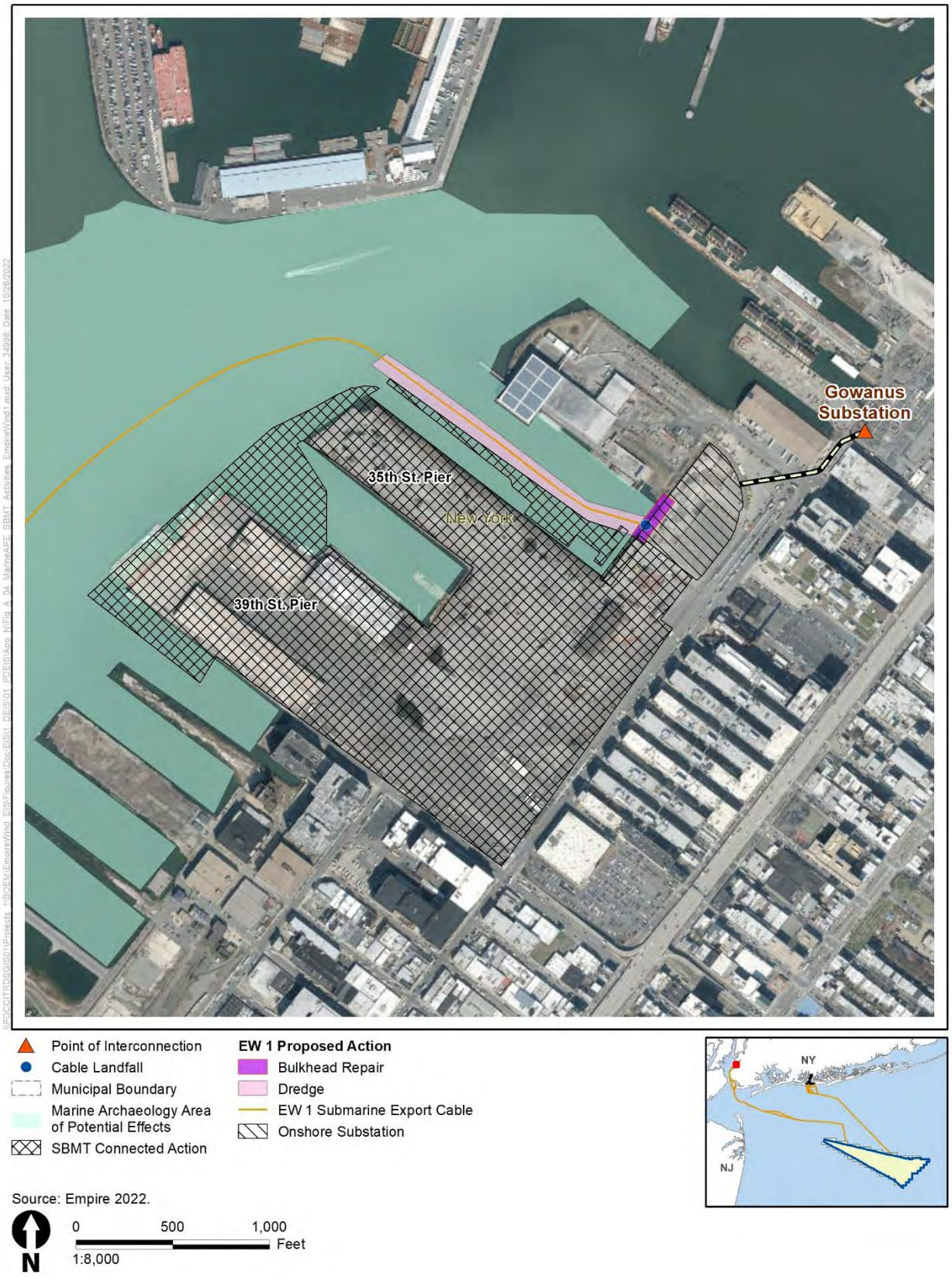

Figure 4 Marine Archaeological Resources APE for Connected Action Activities

Terrestrial Archaeological Resources APE Figures

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Figure 5 EW 1 Terrestrial Archaeological Resources APE

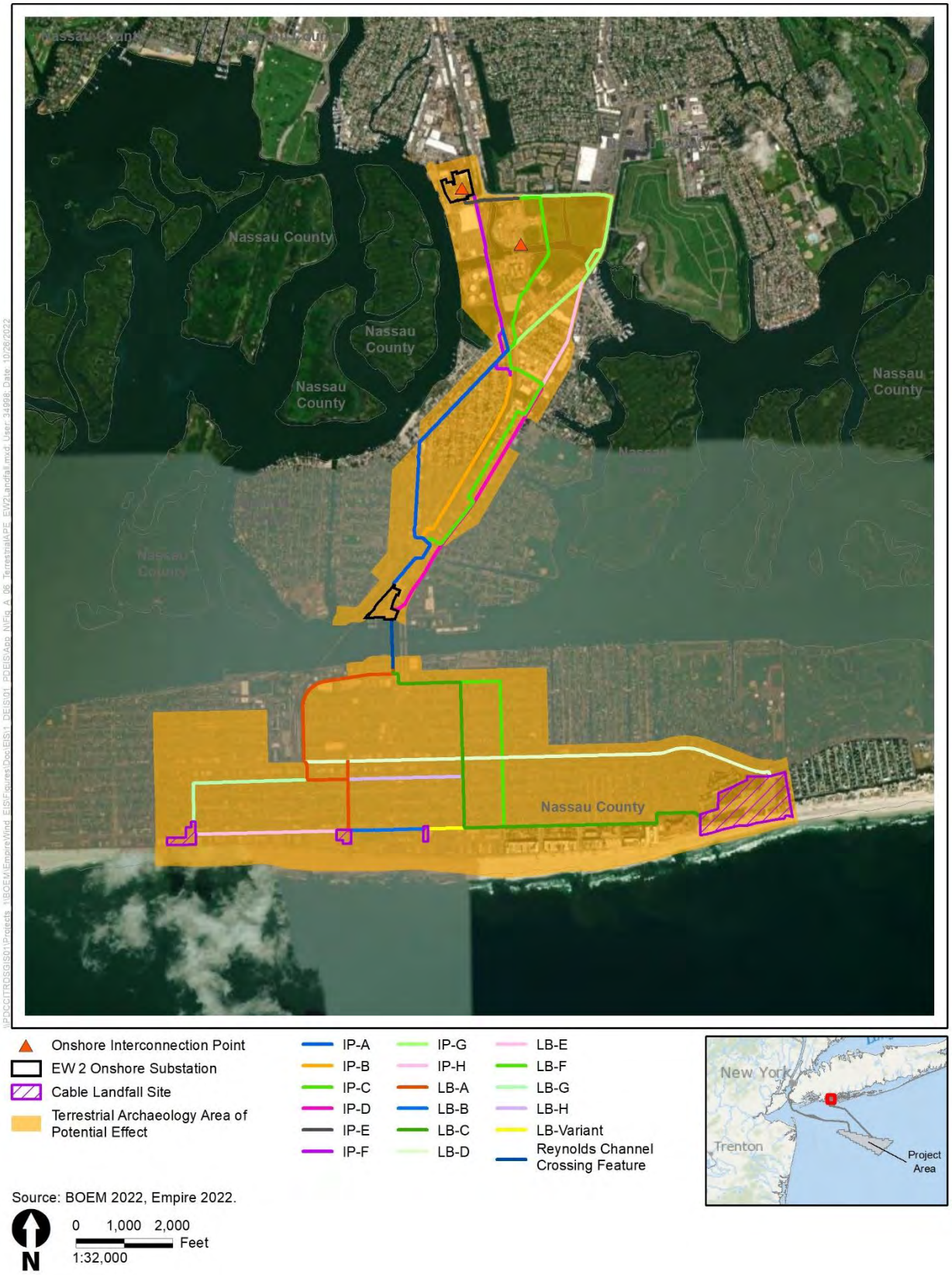

Figure 6 EW 2 Terrestrial Archaeological Resources APE

Offshore Visual APE Figures

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Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

0 1,000 2,000 Feet

1:24,000

Figure 7 - New Jersey Offshore Visual APE
Map 1 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

0 1,000 2,000 Feet

1:24,000

Figure 7 - New Jersey Offshore Visual APE
Map 2 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

0 1,000 2,000 Feet

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Figure 7 - New Jersey Offshore Visual APE
Map 3 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 7 - New Jersey Offshore Visual APE
Map 4 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 7 - New Jersey Offshore Visual APE
Map 5 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 7 - New Jersey Offshore Visual APE
Map 6 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 7 - New Jersey Offshore Visual APE
Map 7 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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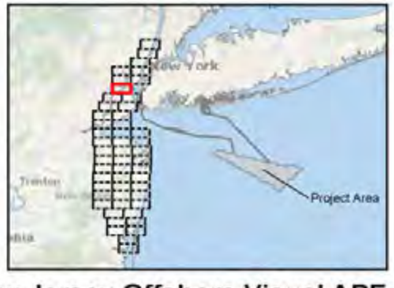
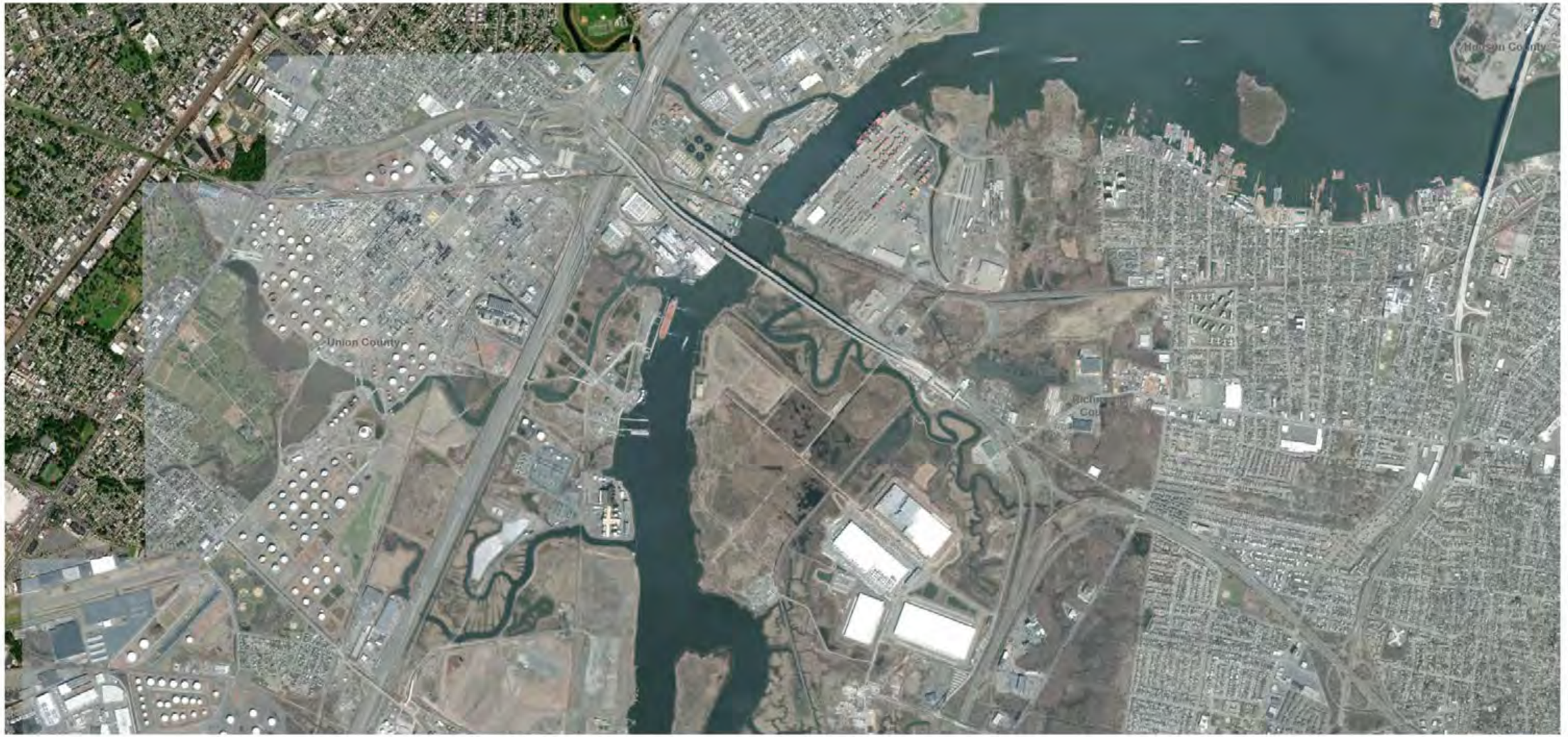


Figure 7 - New Jersey Offshore Visual APE
Map 8 of 51



Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 7 - New Jersey Offshore Visual APE
Map 9 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 7 - New Jersey Offshore Visual APE
Map 10 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 7 - New Jersey Offshore Visual APE
Map 11 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 7 - New Jersey Offshore Visual APE
Map 12 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 7 - New Jersey Offshore Visual APE
Map 13 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 7 - New Jersey Offshore Visual APE
Map 14 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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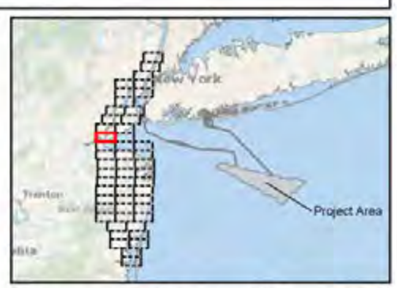

Figure 7 - New Jersey Offshore Visual APE
Map 15 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 7 - New Jersey Offshore Visual APE
Map 16 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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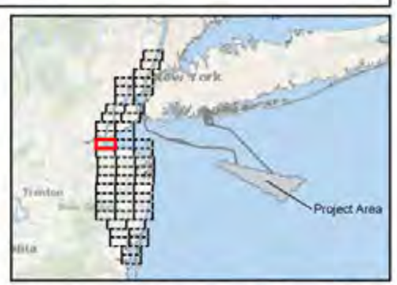

Figure 7 - New Jersey Offshore Visual APE
Map 17 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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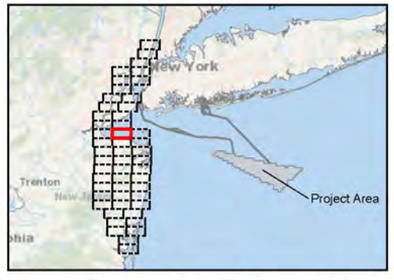

Figure 7 - New Jersey Offshore Visual APE
Map 18 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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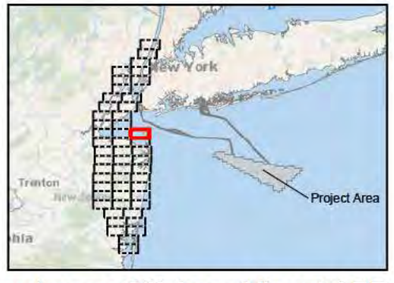

Figure 7 - New Jersey Offshore Visual APE
Map 19 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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1:24,000

Figure 7 - New Jersey Offshore Visual APE
Map 20 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 7 - New Jersey Offshore Visual APE
Map 21 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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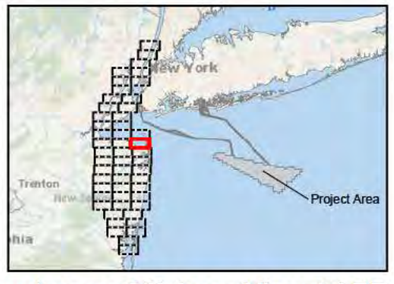

Figure 7 - New Jersey Offshore Visual APE
Map 22 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 7 - New Jersey Offshore Visual APE
Map 23 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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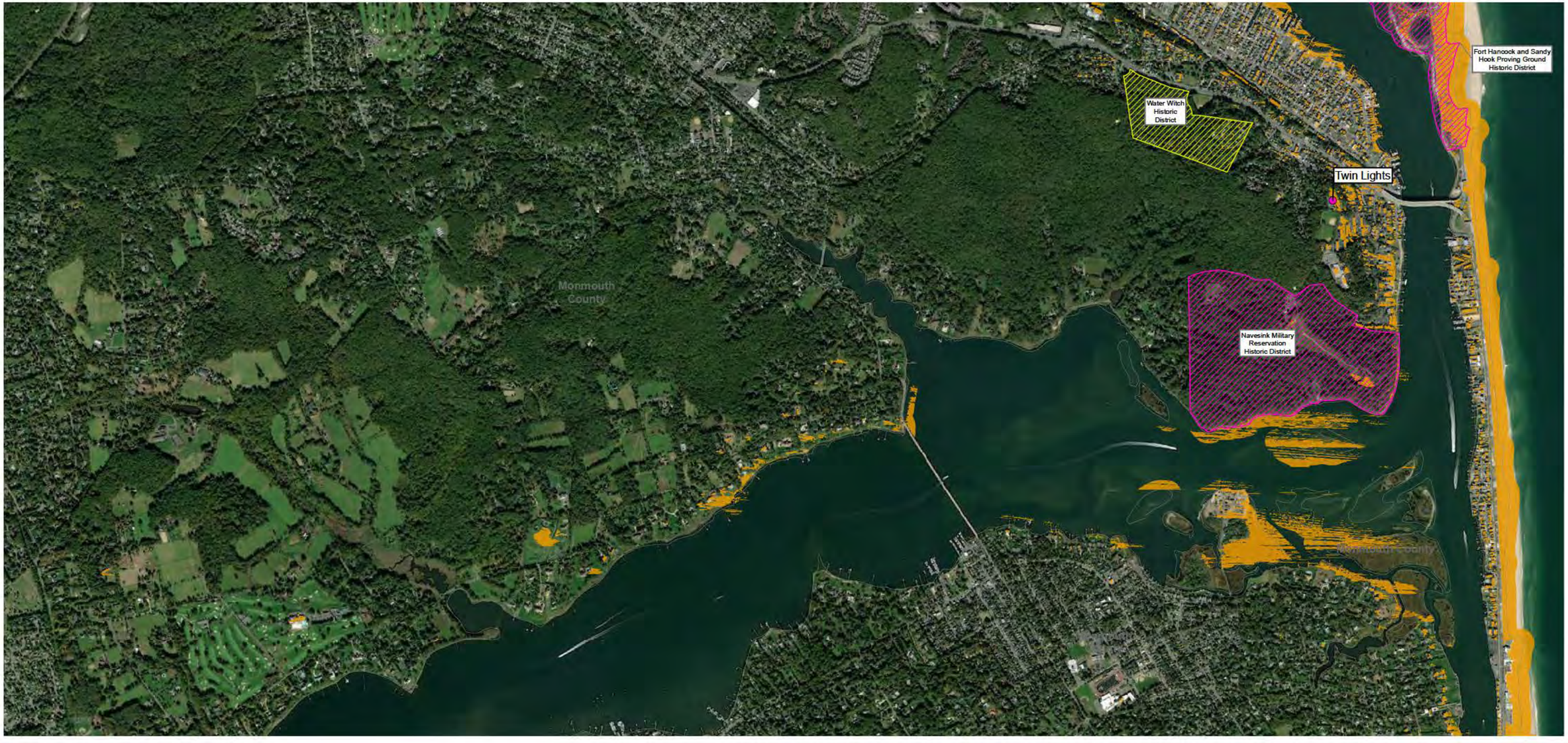
Figure 7 - New Jersey Offshore Visual APE
Map 24 of 51



Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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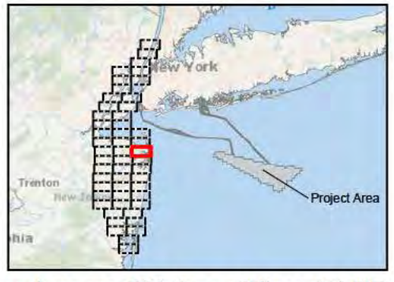

Figure 7 - New Jersey Offshore Visual APE
Map 25 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 7 - New Jersey Offshore Visual APE
Map 26 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 7 - New Jersey Offshore Visual APE
Map 27 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 7 - New Jersey Offshore Visual APE
Map 28 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 7 - New Jersey Offshore Visual APE
Map 29 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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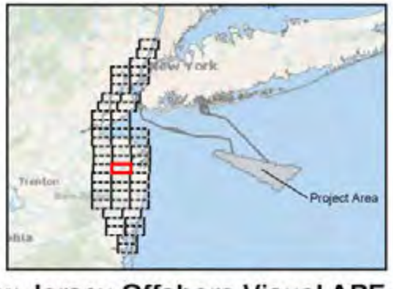
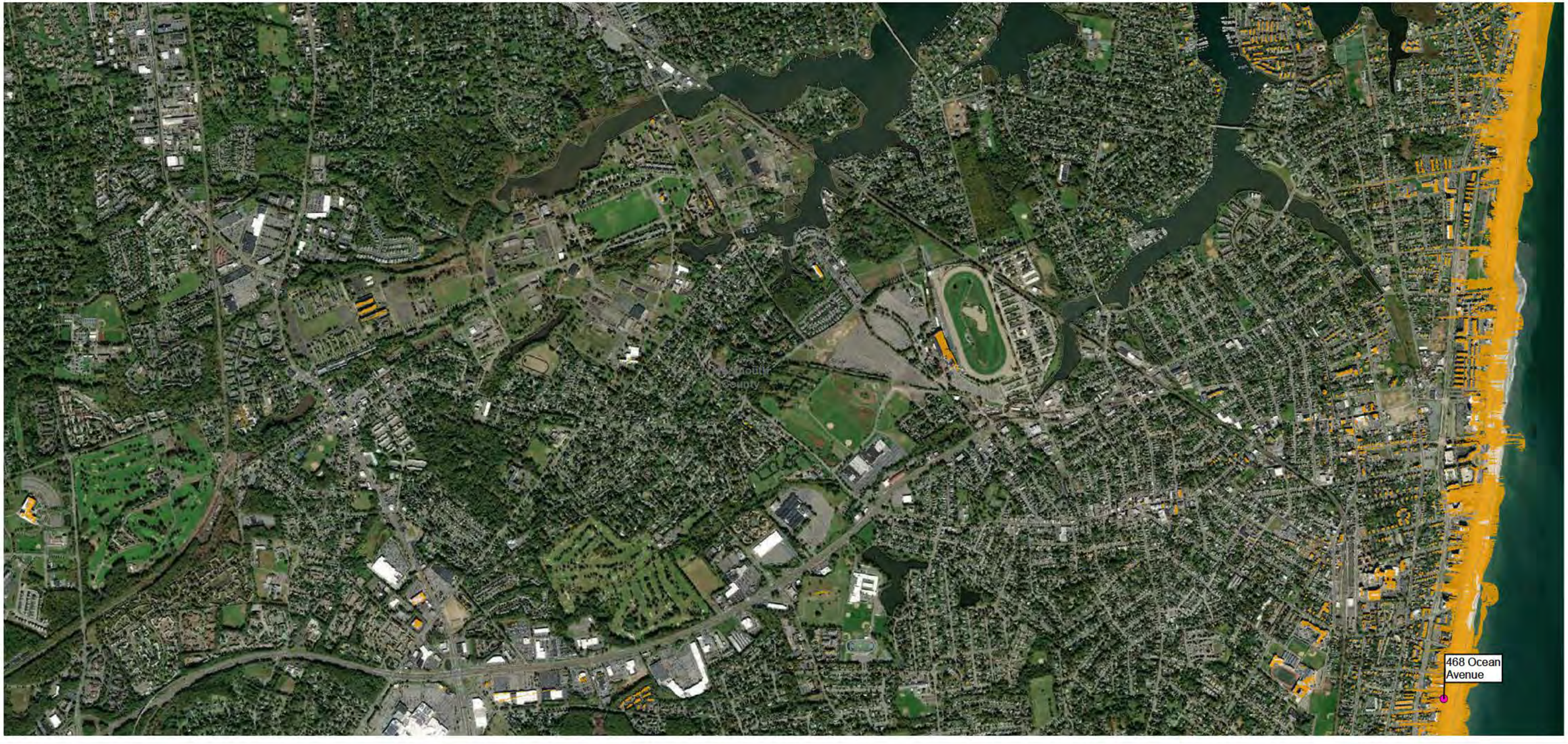


Figure 7 - New Jersey Offshore Visual APE
Map 30 of 51



Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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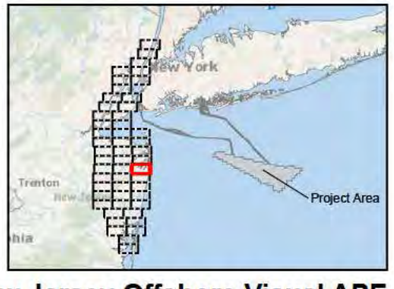

Figure 7 - New Jersey Offshore Visual APE
Map 31 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 7 - New Jersey Offshore Visual APE
Map 32 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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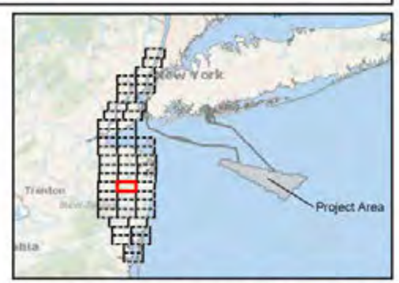
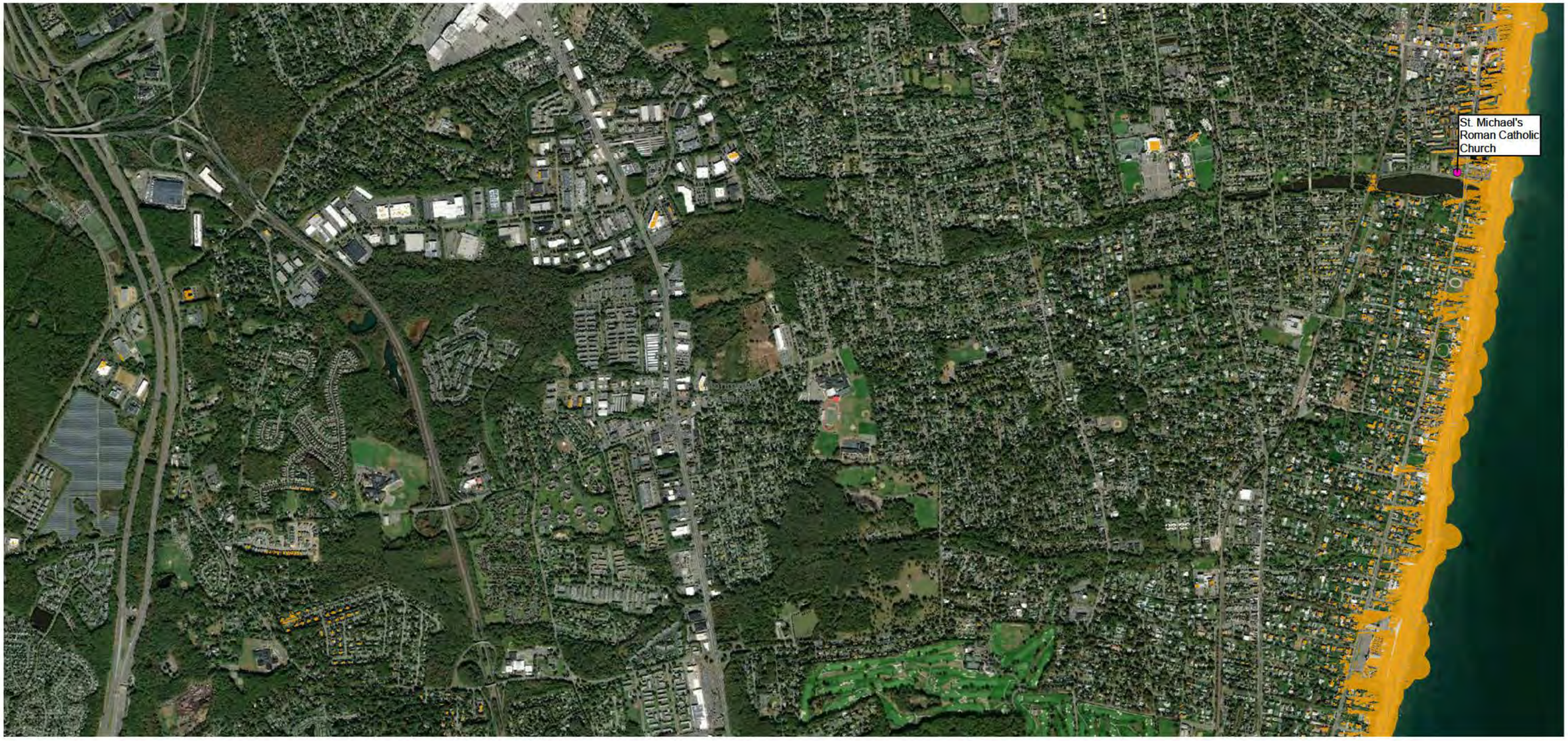


Figure 7 - New Jersey Offshore Visual APE
Map 33 of 51



Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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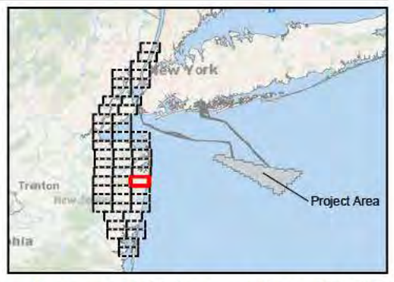

Figure 7 - New Jersey Offshore Visual APE
Map 34 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 7 - New Jersey Offshore Visual APE
Map 35 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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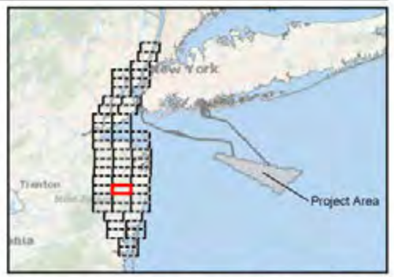
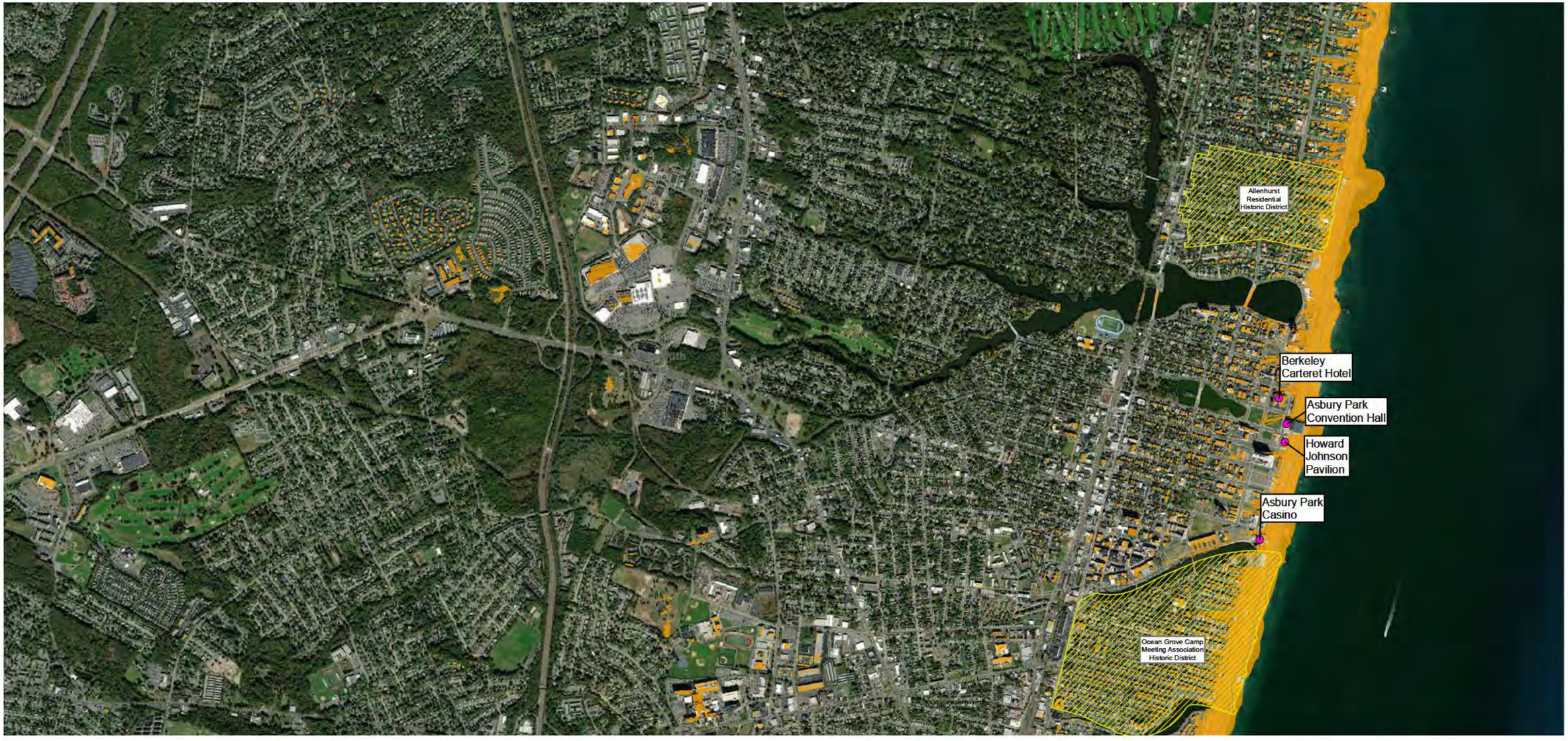


Figure 7 - New Jersey Offshore Visual APE
Map 36 of 51



Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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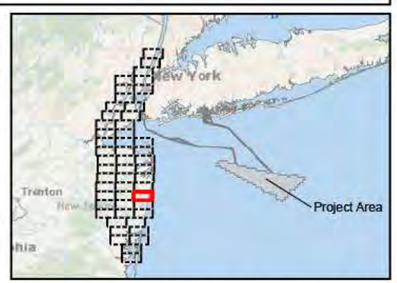

Figure 7 - New Jersey Offshore Visual APE
Map 37 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 7 - New Jersey Offshore Visual APE
Map 38 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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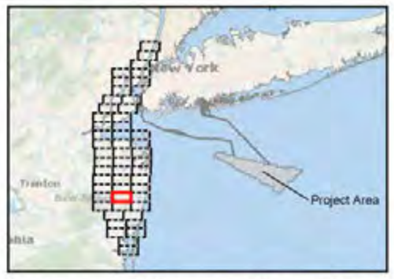

Figure 7 - New Jersey Offshore Visual APE
Map 39 of 51

Figure 7 - New Jersey Offshore Visual APE
Map 40 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 7 - New Jersey Offshore Visual APE
Map 41 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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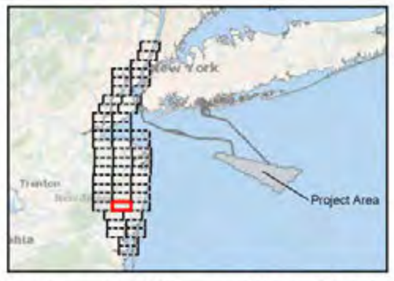
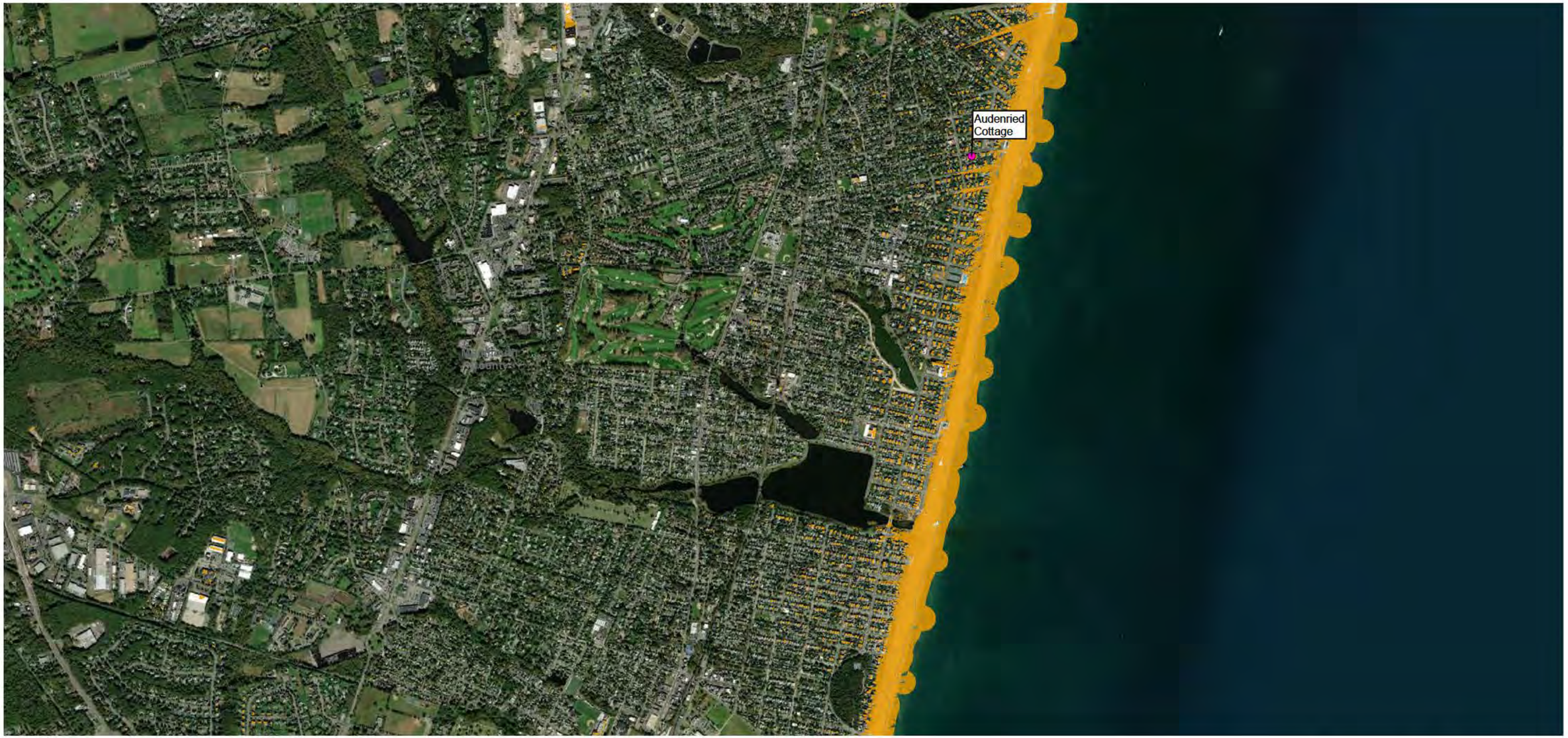


Figure 7 - New Jersey Offshore Visual APE
Map 42 of 51



Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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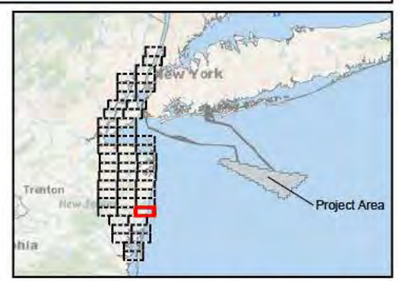

Figure 7 - New Jersey Offshore Visual APE
Map 43 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 7 - New Jersey Offshore Visual APE
Map 44 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 7 - New Jersey Offshore Visual APE
Map 45 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 7 - New Jersey Offshore Visual APE
Map 46 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 7 - New Jersey Offshore Visual APE
Map 47 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 7 - New Jersey Offshore Visual APE
Map 48 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 7 - New Jersey Offshore Visual APE
Map 49 of 51

Figure 7 - New Jersey Offshore Visual APE
Map 50 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 7 - New Jersey Offshore Visual APE
Map 51 of 51

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 1 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 8 - New York Offshore Visual APE
Map 2 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 8 - New York Offshore Visual APE
Map 3 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 8 - New York Offshore Visual APE
Map 4 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 8 - New York Offshore Visual APE
Map 5 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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1:24,000

Figure 8 - New York Offshore Visual APE
Map 6 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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1:24,000

Figure 8 - New York Offshore Visual APE
Map 7 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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1:24,000

Figure 8 - New York Offshore Visual APE
Map 8 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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1:24,000

Figure 8 - New York Offshore Visual APE
Map 9 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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1:24,000

Figure 8 - New York Offshore Visual APE
Map 10 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 8 - New York Offshore Visual APE
Map 11 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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1:24,000

Figure 8 - New York Offshore Visual APE
Map 12 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 8 - New York Offshore Visual APE
Map 13 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 8 - New York Offshore Visual APE
Map 14 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 8 - New York Offshore Visual APE
Map 15 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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1:24,000

Figure 8 - New York Offshore Visual APE
Map 16 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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1:24,000

Figure 8 - New York Offshore Visual APE
Map 17 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 8 - New York Offshore Visual APE
Map 18 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 19 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 20 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 21 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 22 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 23 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 24 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 25 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 26 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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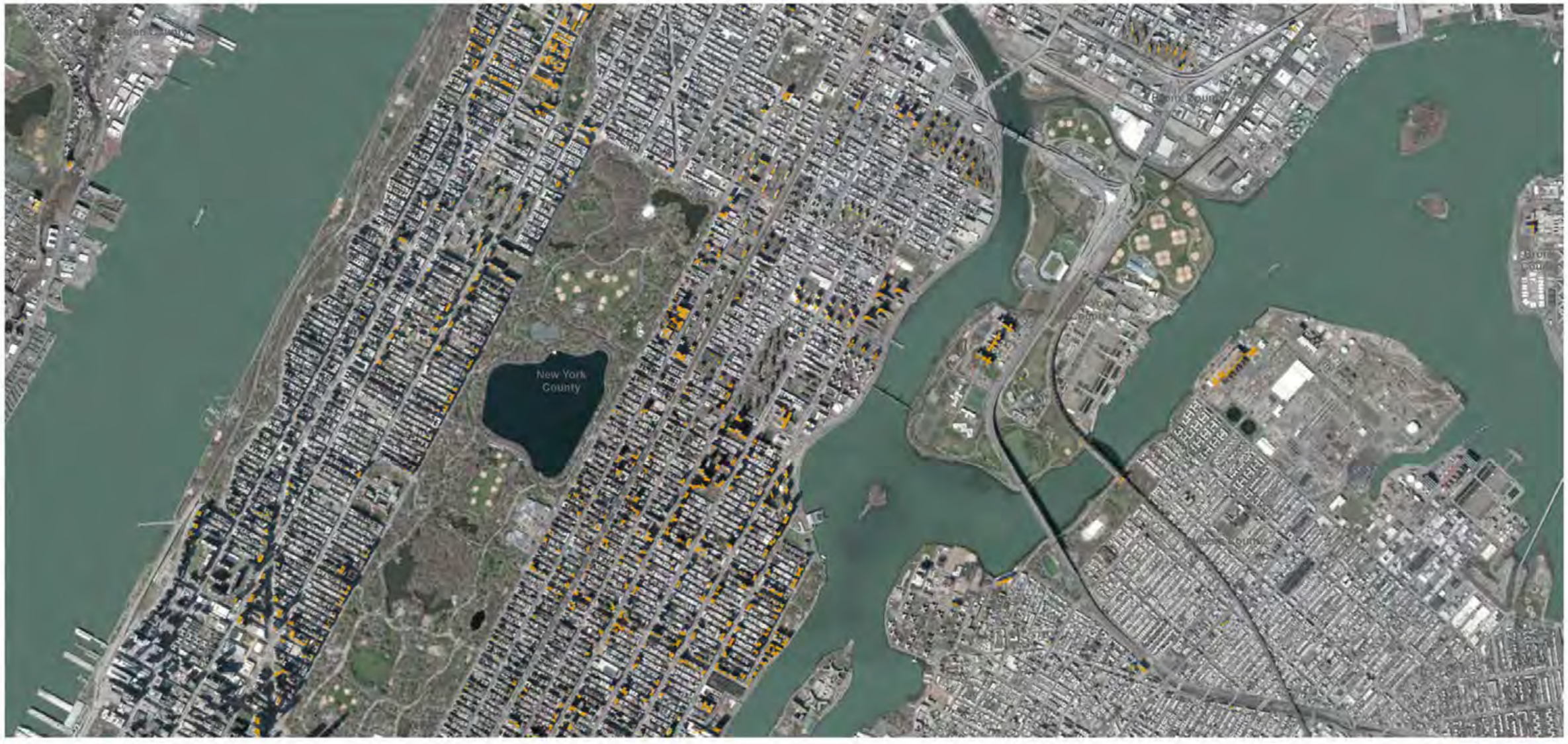
Figure 8 - New York Offshore Visual APE
Map 27 of 83



Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 28 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 29 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 30 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 31 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 32 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 33 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 34 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 35 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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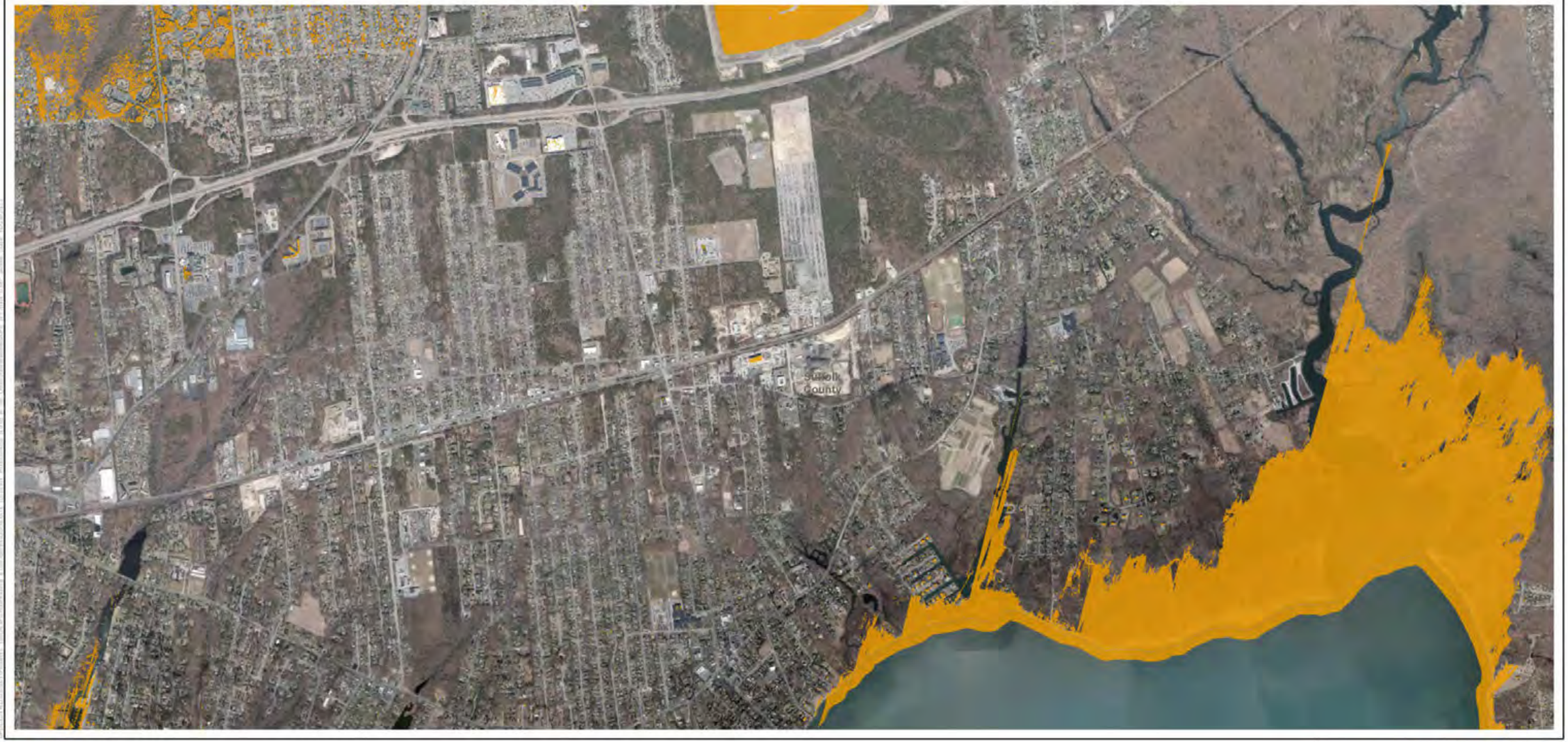
Figure 8 - New York Offshore Visual APE
Map 36 of 83



Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 37 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 38 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 39 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 40 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 41 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 42 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 43 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 44 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 45 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 46 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 47 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 48 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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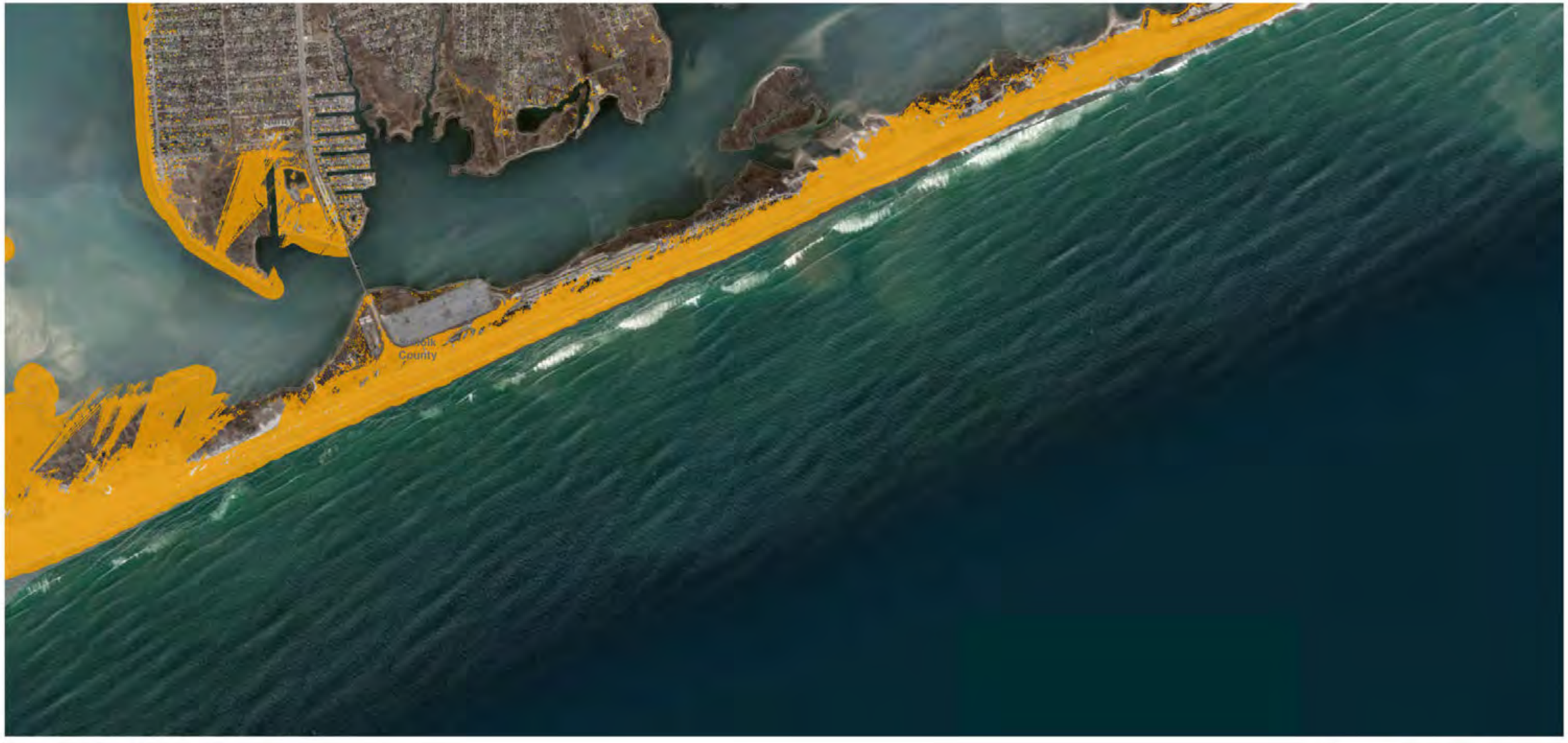
Figure 8 - New York Offshore Visual APE
Map 49 of 83



Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 50 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 51 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 52 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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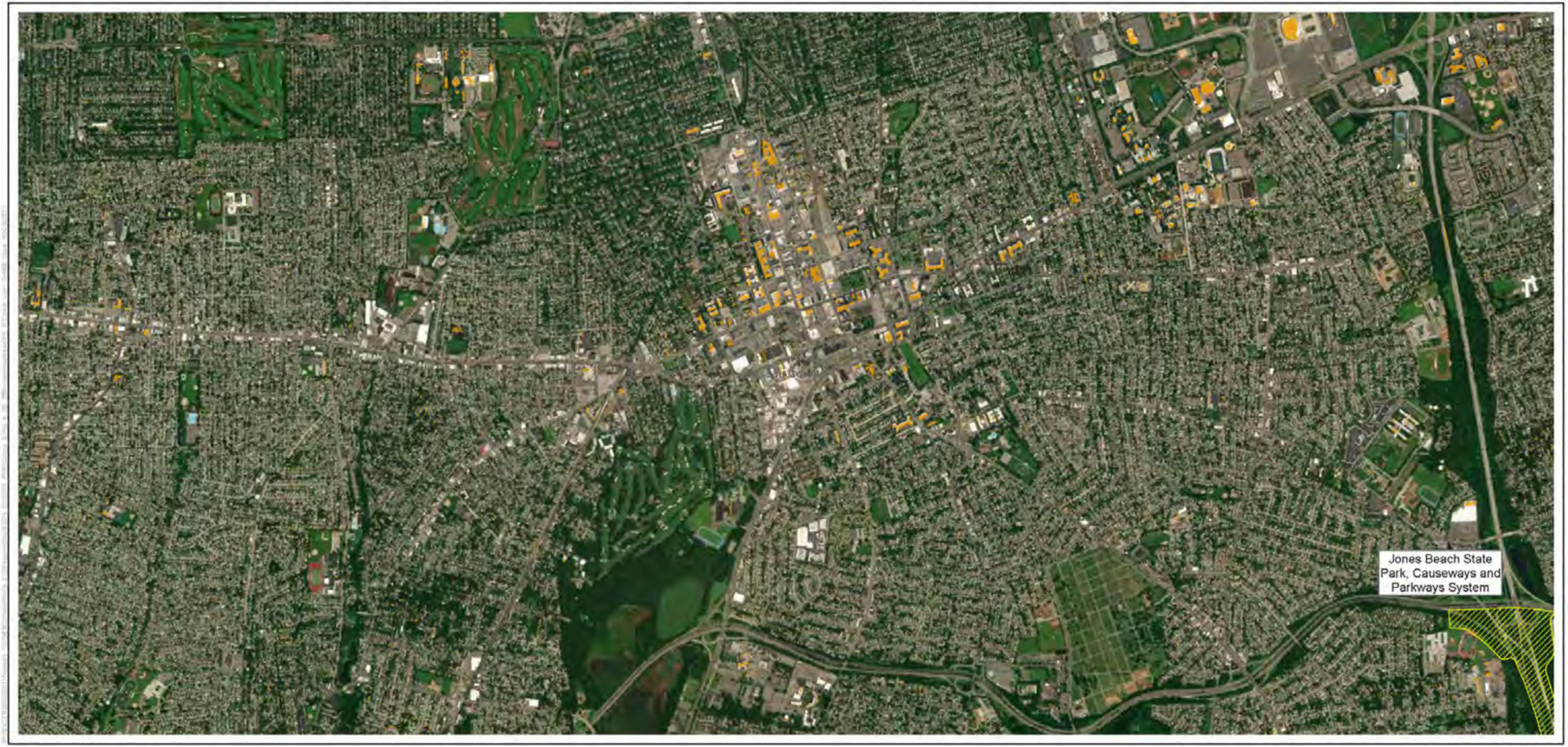
Figure 8 - New York Offshore Visual APE
Map 53 of 83



Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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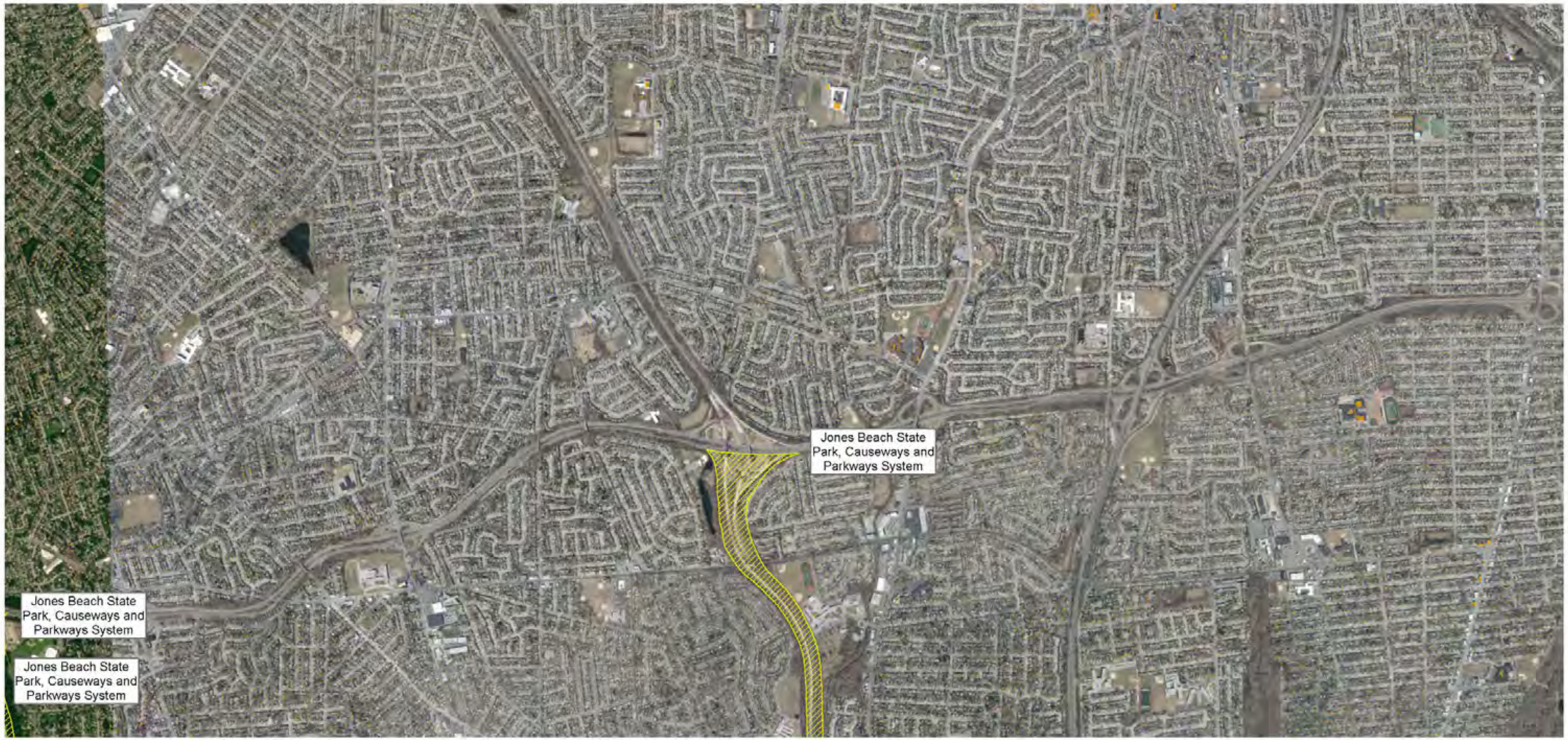
Figure 8 - New York Offshore Visual APE
Map 54 of 83



Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 55 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 56 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 57 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 8 - New York Offshore Visual APE
Map 58 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 59 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 60 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 61 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 62 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 63 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 64 of 83

Jones Beach State Park, Causeways and Parkways System

Jones Beach State Park, Causeways and Parkways System

Jones Beach State Park, Causeways and Parkways System

Jones Beach State Park, Causeways and Parkways System

Jones Beach State Park, Causeways and Parkways System

Nassau County

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 65 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 66 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 67 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 68 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 69 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 70 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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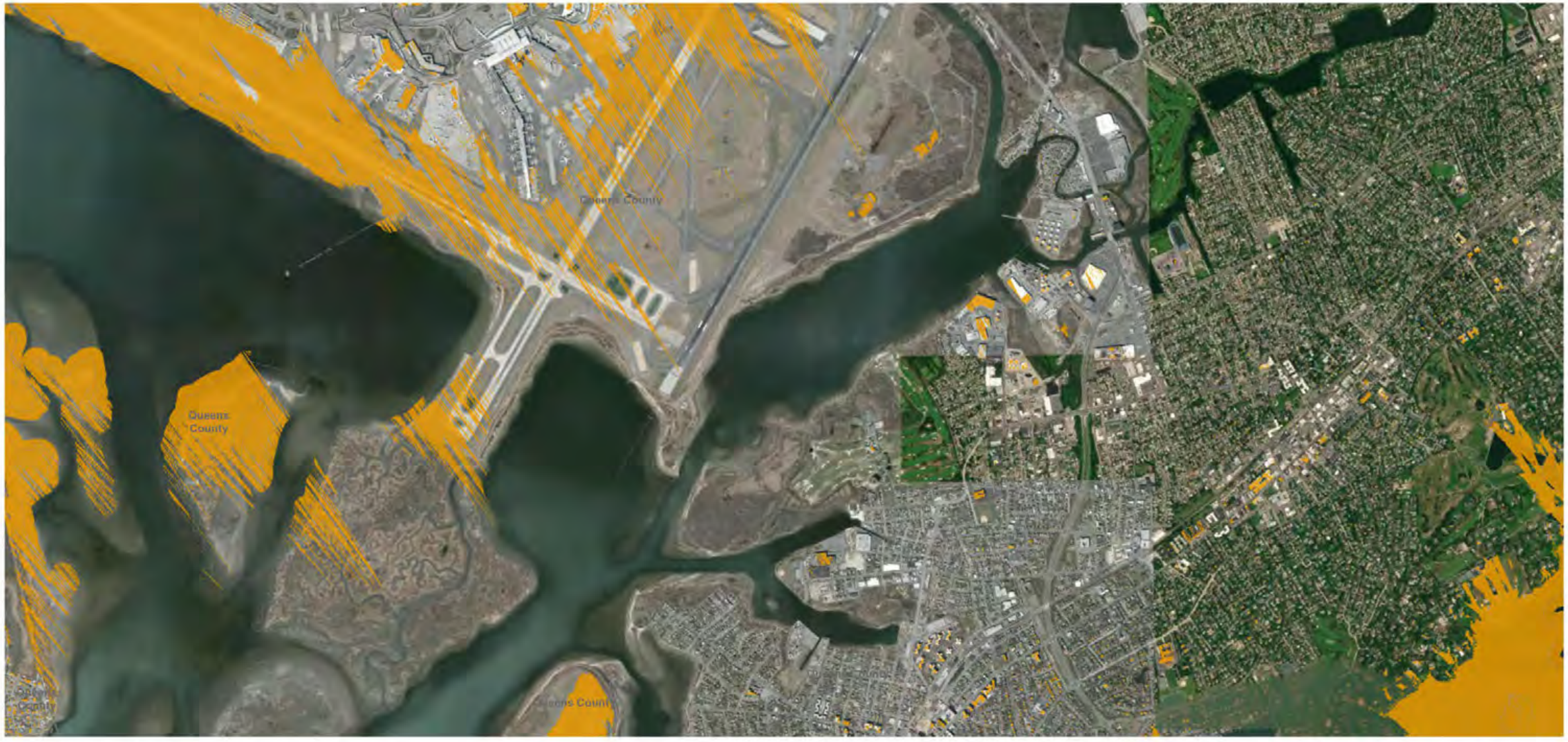
Figure 8 - New York Offshore Visual APE
Map 71 of 83



Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 72 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 73 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 74 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 75 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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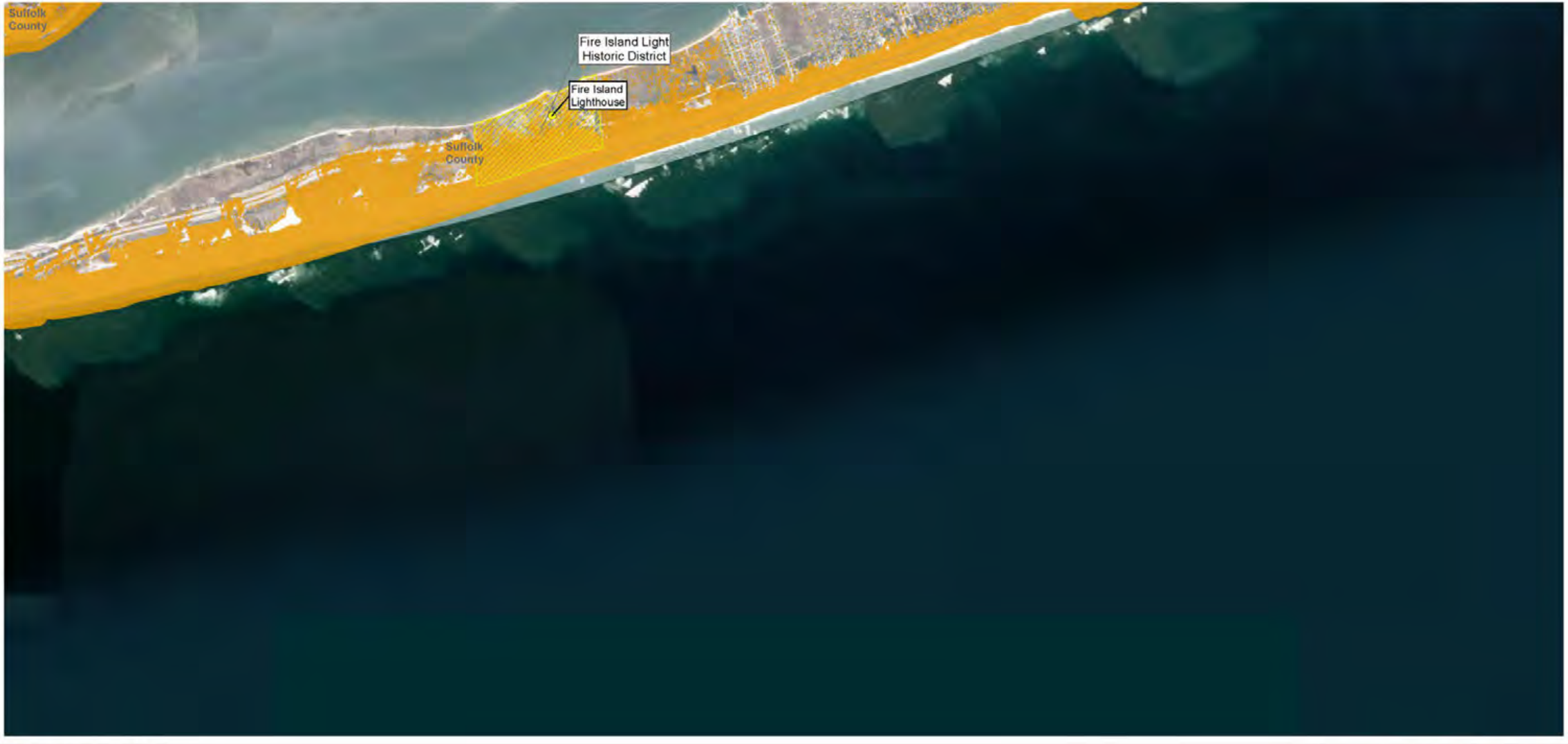
Figure 8 - New York Offshore Visual APE
Map 76 of 83



Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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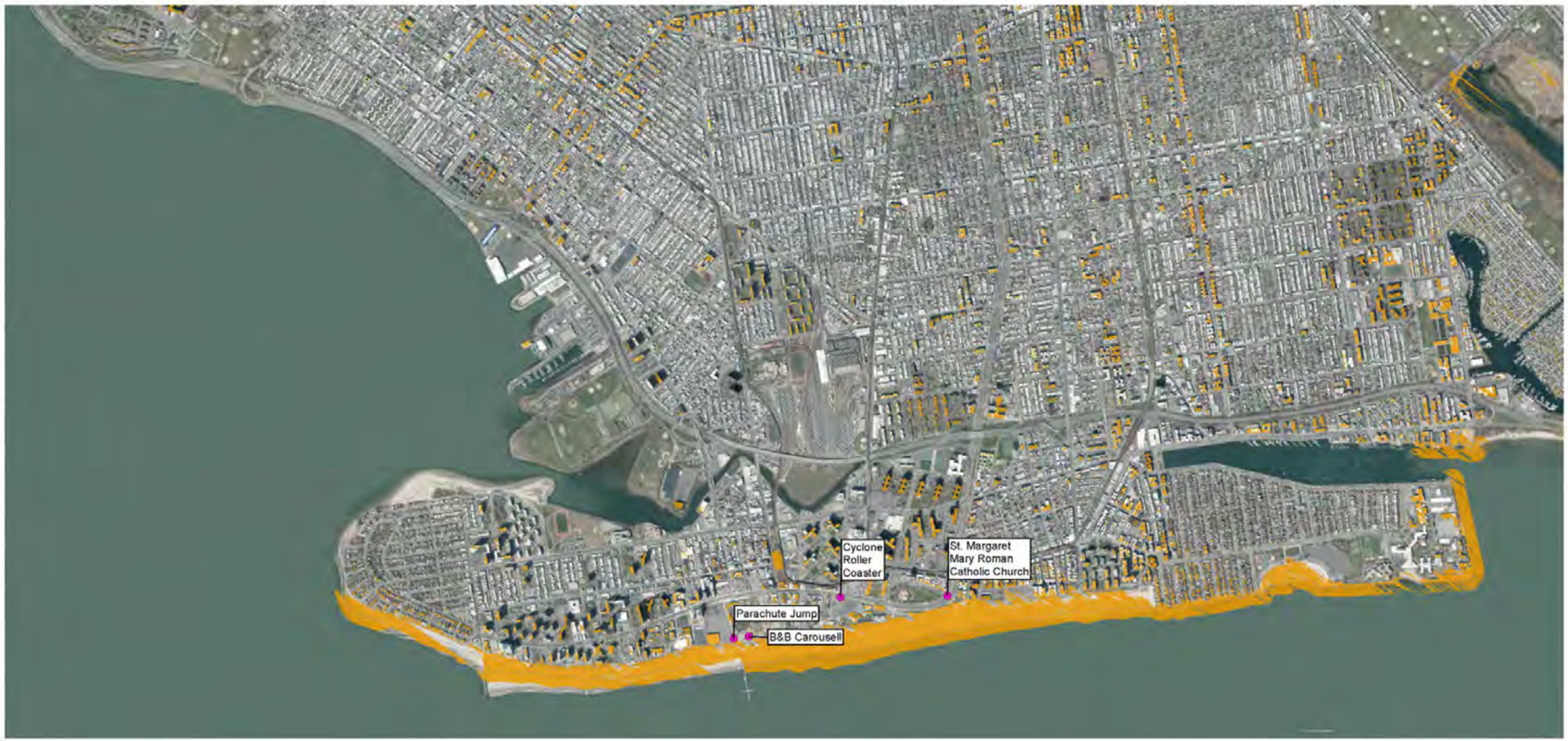
Figure 8 - New York Offshore Visual APE
Map 77 of 83



Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 78 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 79 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 80 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 81 of 83

Jones Beach State Park, Causeways and Parkways System

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

N

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Figure 8 - New York Offshore Visual APE
Map 82 of 83

Offshore Visual APE

Individual Historic Properties

- Adverse Effect
- No Adverse Effect

Historic District

- Adverse Effect
- No Adverse Effect

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Figure 8 - New York Offshore Visual APE
Map 83 of 83

Onshore Visual APE Figures

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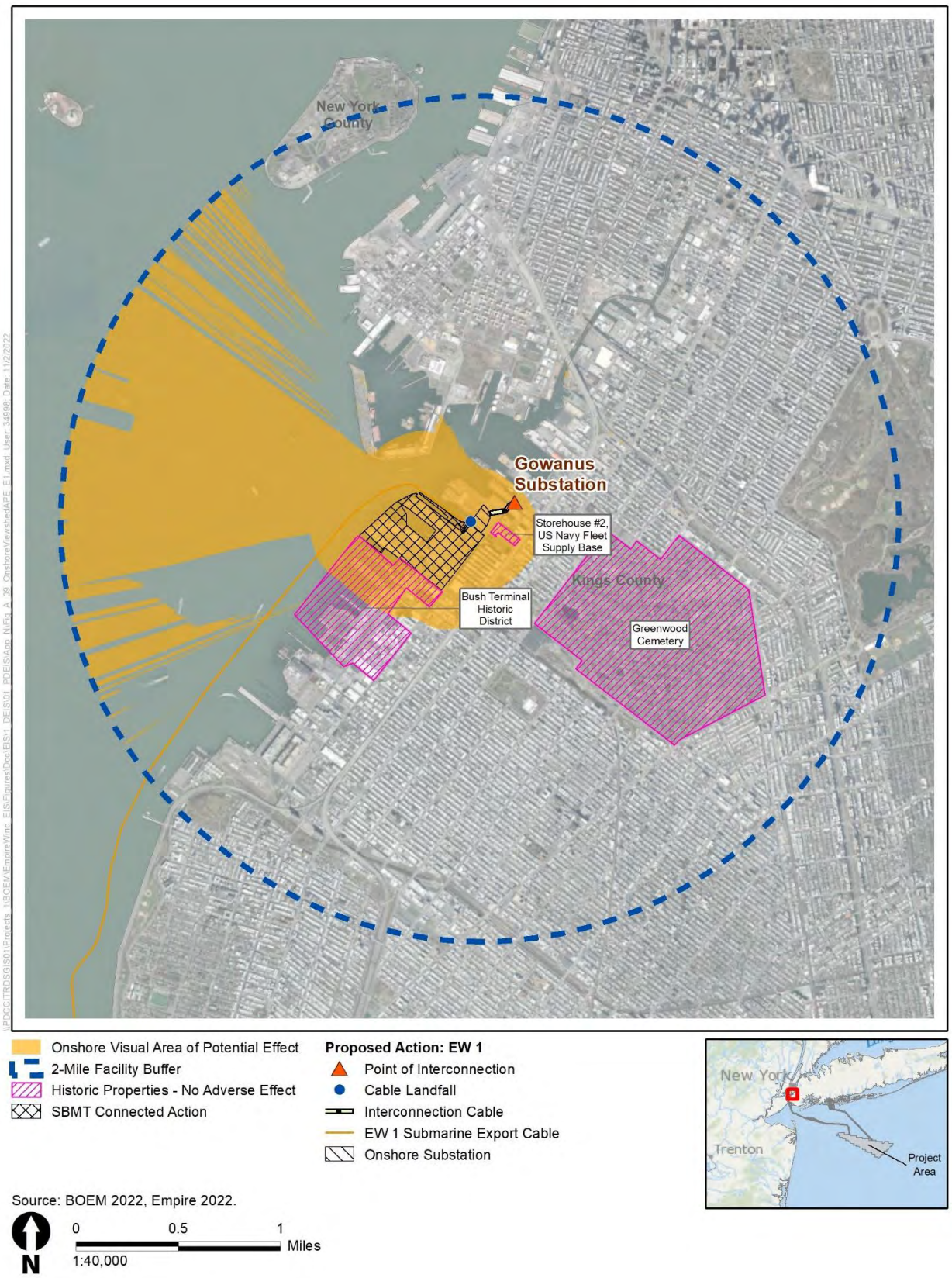

Figure 9 Onshore Visual APE for EW 1 Substation

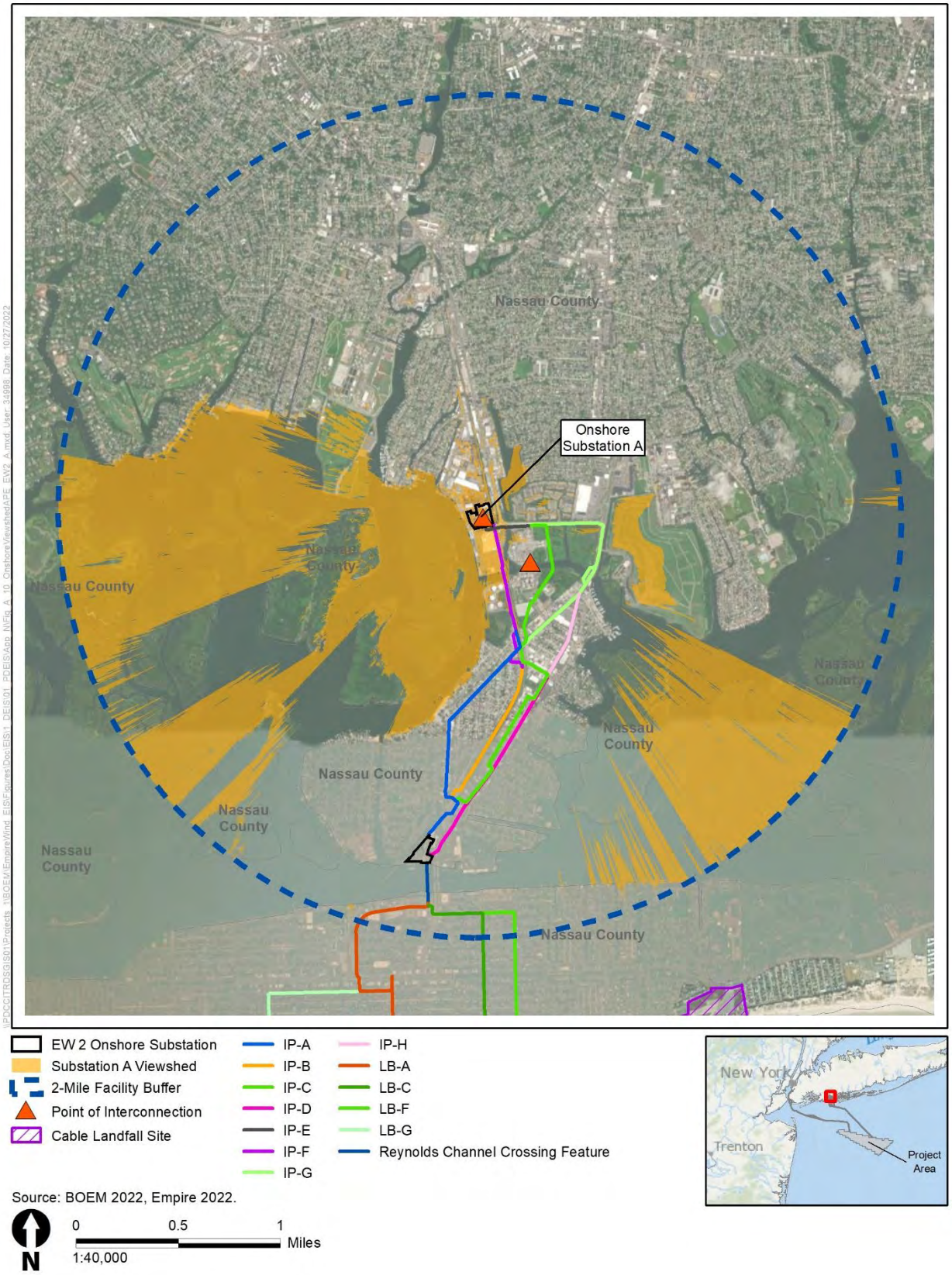

Figure 10 Onshore Visual APE for EW 2 Substation A

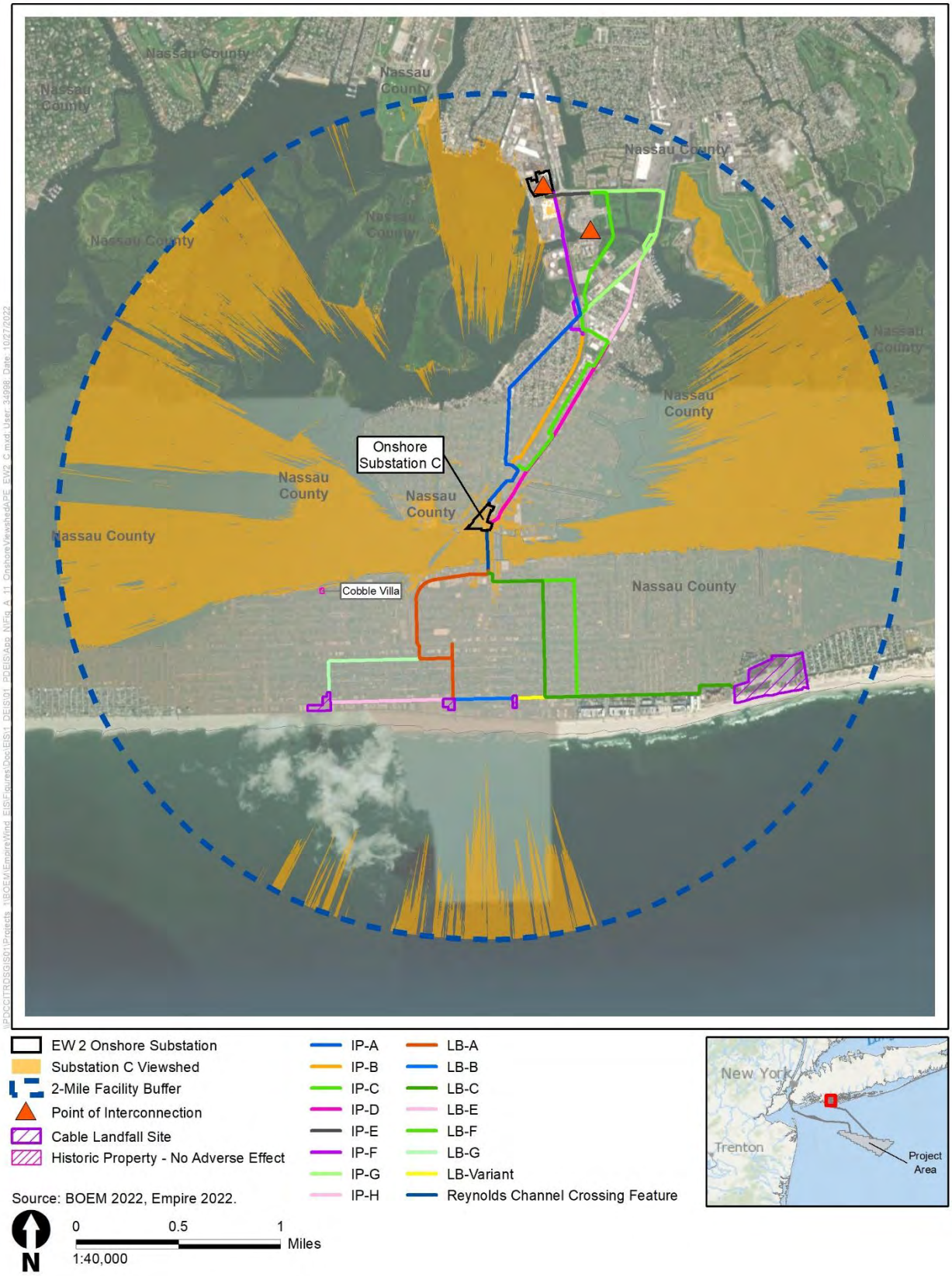

Figure 11 Onshore Visual APE for EW 2 Substation C

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ATTACHMENT C
ENTITIES INVITED TO BE CONSULTING PARTIES

The following is a list of governments and organizations that BOEM contacted and invited to be a consulting party to the NHPA Section 106 review of the Empire Wind Project, in April 2021. During the consultations, additional parties were made known to BOEM and were added as they were identified.

Participants in the Section 106 Process	Participating Consulting Parties
SHPOs and State Agencies	New Jersey Commission on Indian Affairs
	New Jersey Cultural Trust
	NJDEP, Historic Preservation Office
	New Jersey Division of Archives and Record Management
	New Jersey Historic Trust
	New Jersey Historical Commission
	New Jersey Office of Planning Advocacy
	New Jersey State Museum
	New Jersey State Parks, Forests and Historic Sites
	New York SHPO
	New York State Parks, Recreation and Historic Preservation
	New York State Parks, Recreation and Historic Preservation, Long Island State Parks, Region 9
	New York State Parks, Recreation and Historic Preservation, Region 9, Gilgo State Park
	New York State Parks, Recreation and Historic Preservation, Region 9, Jones Beach State Park
	New York State Parks, Recreation and Historic Preservation, Region 9, Robert Moses State Park
Federal Agencies	ACHP
	BSEE
	NOAA
	USACE
	USCG
	USEPA
	USFWS
	National Park Service
	National Park Service, Region 1
Federally Recognized Tribes	Absentee-Shawnee Tribe of Indians of Oklahoma
	Delaware Tribe of Indians
	Eastern Shawnee Tribe of Oklahoma
	Mohegan Tribe of Connecticut

Participants in the Section 106 Process	Participating Consulting Parties
	Shawnee Tribe
	Stockbridge-Munsee Community, Wisconsin/Band of Mohican Indians
	The Delaware Nation
	The Narragansett Indian Tribe
	The Shinnecock Indian Nation
Non-Federally Recognized Tribe	Nanticoke Indian Association, Inc.
	Nanticoke Lenni-Lenape Tribal Nation
	Powhatan Renape Nation
	Ramapough Lenape Indian Nation
	Ramapough Mountain Indians
	Lenape Indian Tribe of Delaware
Local Government	Aberdeen Township
	Allenhurst Borough
	Amityville Historical Society
	Asbury Park
	Atlantic Highlands Borough
	Avon-by-the-Sea Borough
	Belmar Borough
	Borough of Brooklyn
	Borough of Manhattan
	Borough of Queens
	Borough of Staten Island
	Borough of The Bronx
	Bradley Beach Borough
	Brick Township
	Bronx County
	City of Bayonne
	City of Bayonne Planning Board
	City of Hoboken
	City of Hoboken Historic Preservation Commission
	City of Jersey City
	City of Long Beach
	Deal Borough
	Highlands Borough
	Hudson County
	Incorporated Village of Lindenhurst
	Keyport Borough

Participants in the Section 106 Process	Participating Consulting Parties
	Kings County
	Lake Como Borough
	Loch Arbour Village
	Long Branch
	Manasquan Borough
	Middlesex County
	Middletown Township
	Monmouth Beach Borough
	Monmouth County
	Nassau County
	Neptune Township
	New York City
	New York City Department of Parks & Recreation
	New York City Landmarks Commission
	New York State Council of Parks
	Ocean County
	Old Bridge Township
	Queens County
	Richmond County
	Sea Bright Borough
	Sea Girt Borough
	Spring Lake Borough
	Suffolk County
	Town of Babylon
	Town of Brookhaven
	Town of Hempstead
	Town of Islip
	Town of Oyster Bay
	Union Beach Borough
	Village of Amityville
	Village of Bellport
	Village of Brightwaters
	Village of Mastic Beach
	Village of Patchogue
Nongovernmental Organizations or Groups	Alliance for Coney Island
	American Irish Historical Society
	American Jewish Historical Society

Participants in the Section 106 Process	Participating Consulting Parties
	Asbury Park Historical Society
	Atlantic Highlands Historical Society
	Bay Shore Historical Society
	Bayonne Community Museum, Inc.
	Bellport-Brookhaven Historical Society
	Belmar Historical Society
	Bradley Beach Historical Society
	Brick Township Historical Society
	Bronx County Historical Society
	Crossroads of the American Revolution in New Jersey
	East Islip Historical Society
	Equinor Wind US, LLC
	Friends of Asbury Park Environmental Shade Tree Commission
	Friends of Monmouth County Parks
	Friends of Sunset Park
	Greater Patchogue Historical Society
	Green-Wood Cemetery
	Hispanic Society of America
	Historic Districts Council
	Historic House Trust of New York City
	Historical Society for the Preservation of the Underground Railroad
	Historical Society of East Rockaway and Lynbrook
	Historical Society of Highlands
	Historical Society of Islip Hamlet
	Historical Society of Ocean Grove
	Hoboken Historical Museum
	Hudson County Historical Society
	Hudson County Register
	Huntington Historical Society
	Italian Historical Society of America (Brooklyn)
	Jersey City Landmarks Conservancy
	Keyport Historical Society
	Long Beach Historical and Preservation Society
	Long Branch Historical Museum Association
	Long Island Maritime Museum
	Malverne Historical and Preservation Society
	Mastic Peninsula Historical Society

Participants in the Section 106 Process	Participating Consulting Parties
	Matawan Historical Society
	Middletown Township Historical Society
	Monmouth County Historical Society
	Nassau County Historical Society
	Nassau Historical Society
	National Maritime Historical Society
	New Jersey Future
	New Jersey Historical Society
	New Jersey Lighthouse Society
	New Jersey Maritime Museum
	New York Central Historical Society
	New-York Historical Society
	Ocean County Historical Society
	Oyster Bay Historical Society
	Preservation Alliance of Spring Lake
	Preservation League of New York
	Preservation New Jersey
	Queens County Historical Society
	Queens Historical Society
	Richmond County Historical Society
	Romer Shoal Light
	Roosevelt Island Historical Society
	Sea Bright Historical Society
	Spring Lake Historical Society
	Squan Village Historical Society
	Staten Island Historical Society at Historic Richmond Town
	Suffolk County Historical Society
	The Archaeological Society of New Jersey
	The League of Historical Societies of New Jersey
	The Sandy Hook Foundation
	Thomas Warne Museum/Madison-Old Bridge Township Historical Society
	Twin Lights Historical Society
	Village of Babylon Historical Society
	West Islip Historical Society

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ATTACHMENT D
CONSULTING PARTIES TO THE EMPIRE WIND PROJECT

The following is a current list of consulting parties to the NHPA Section 106 review of the Empire Wind Project, as of August 15, 2021.

Government or Organization	Participating Consulting Parties	Contact
SHPOs and State Agencies	NJDEP, Historic Preservation Office	Katherine Marcopul, Administrator and Deputy Historic Preservation Officer (Primary) Jesse West-Rosenthal, Historic Preservation Specialist 2 (Alternate)
	New Jersey Office of Planning Advocacy	Lisa Avichal, Area Planner (Primary) Donna Rendeiro, Executive Director (Alternate)
	New York SHPO	R. Daniel Mackay, Deputy Commissioner for Historic Preservation (Primary)
	New York State Parks, Recreation and Historic Preservation	Erik Kullesaid, Commissioner, State Historic Preservation Officer (Primary) Tim Lloyd, Archaeologist (Alternate)
	New York State Parks, Recreation and Historic Preservation, Long Island State Parks Region 9	George Gorman, Jr., Regional Director (Primary) Kevin Connelly, Assistant Region Director (Alternate)
	New York State Parks, Recreation and Historic Preservation, Region 9, Gilgo State Park	Kevin Boone, Park Director (Primary) William Brown (Alternate)
	New York State Parks, Recreation and Historic Preservation, Region 9, Jones Beach State Park	Jeffery Mason, Park Director (Primary)
	New York State Parks, Recreation and Historic Preservation, Region 9, Robert Moses State Park	Kevin Boone, Park Director (Primary) William Brown (Alternate)
Federal Agencies	ACHP	Christopher Daniel, Federal Property Management Section, Program Analyst (Primary) Chris Koeppel, Federal Property Management Section, Assistant Director (Alternate)
	BSEE	Shawn Arnold, Historic Preservation Program National Lead
	U.S. Maritime Administration	Kris Gilson, Director, Office of Environmental Compliance
	National Park Service	Mary Krueger, Energy Specialist for the Northeast Region (Primary) Kathy Schlegel, Historic Landscape Architect (Alternate)

Government or Organization	Participating Consulting Parties	Contact
	USACE	Chris Minck, New York District, Regulatory, Project Manager
	USEPA	Viorica Petriman, Environmental Engineer, Air and Radiation Division, Region 2
Federally Recognized Tribes	Delaware Tribe of Indians	Susan Bachor, Archaeologist (Primary) Brad KillsCrow, Chief (Alternate)
	The Delaware Nation	Carissa Speck, Tribal Historic Preservation Director (Primary) Katelyn Lucas, Historic Preservation Office (Alternate) Deborah Dotson, President of Executive Committee (Alternate)
	The Shinnecock Indian Nation	Shavonne Smith, Director of Shinnecock Environmental Department (Primary) Bryan Polite, Chairman (Alternate)
	Wampanoag Tribe of Gay Head (Aquinnah)	Bettina Washington, THPO (Primary) Cheryl Andrews-Maltais, Chairwoman (Alternate)
Local Government	Atlantic Highlands Borough	Blake Deakin, Chairman Environmental Commission (Primary) Adam Hubeny, Administrator (Alternate)
	City of Long Beach	Joe Febrizio, Public Works Commissioner (Primary) Scott Kemins, Building Commissioner (Alternate)
	Highlands Borough	Michael F. Muscillo, Borough Administrator (Primary)
	Lake Como Borough	Kevin Higgins, Mayor (Primary) Christopher D'Antunono, Councilman (Alternate)
	Long Branch	Nicholas Graviano, PP, AICP, JD, Planning Director George Jackson, Business Administrator (Primary)
	Nassau County	Kendra Armstead, Special Assistant for Economic Development, Office of the Nassau County Executive (Primary) David Viana, Planner II, Nassau County Department of Public Works - Planning Division (Alternate)
	New York City Landmarks Commission	Gina Santucci, Director of Environmental Review (Primary) Timothy Frye, Director of Special Projects and Strategic Planning (Alternate)
		Nicole Leaf, Environmental Specialist I

Government or Organization	Participating Consulting Parties	Contact
	Ocean County	(Primary) Anthony Agliata, Department of Planning, Director (Alternate)
	Sea Girt Borough	Robert Walker, Planning Board Representative (Primary) Karen Brisben, Planning Board Secretary (Alternate)
	Suffolk County	Dorian Dale, Director of Sustainability (Primary) Sarah Lansdale, Director of Planning (Alternate)
	Town of Babylon	Marwa Fawaz, Comprehensive Planning and Downtown Revitalization (Primary) Rachel Scelfo, Office of Planning and Development (Alternate)
	Town of Hempstead	Christine Grillo (Primary) Douglas Tuman, Commissioner (Alternate)
	Town of Islip	George Munkenbeck, Town Historian (Primary)
	Village of Amityville	Dennis M. Siry, Mayor (Primary) Kevin Smith, Deputy Mayor (Alternate)
	Village of Bellport	Stephen Musolino, Planning Board Chair (Primary)
Nongovernmental Organizations or Groups	Bay Shore Historical Society	Barry R. Dlouhy, President (Primary)
	Equinor Wind US, LLC	Laura Morales, Head of Permitting - New York (Primary)
	Historical Society of Highlands	Shelia Weinstock, President (Primary)
	Point O'Woods Association	William J. Cook, Special Counsel (Primary) Jessica Krauss, Special Counsel (Alternate)
	Romer Shoal Light	Keith Kilgannon, President (Primary) Mike Martin (Alternate)
	The League of Historical Societies of New Jersey	Tim Hart, President (Primary)

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ATTACHMENT E
NEW YORK SHPO LETTER OF CONCURRENCE ON FINDING OF NO ADVERSE EFFECT ON HISTORIC PROPERTIES FROM SOUTH BROOKLYN MARINE TERMINAL PORT INFRASTRUCTURE UPGRADES

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NEW YORK STATE OF OPPORTUNITY. | Parks, Recreation, and Historic Preservation

KATHY HOCHUL
Governor

ERIK KULLESEID
Commissioner

March 21, 2022

Christopher Minck
Project Manager
USACE
26 Federal Plaza
16-406
New York, NY 10278

Re: USACE
South Brooklyn Marine Terminal Port Infrastructure Upgrades
22PR01402
NAN-2021-01202-EMI

Dear Christopher Minck:

Thank you for requesting the comments of the New York State Historic Preservation Office (SHPO). We have reviewed the provided documentation in accordance with Section 106 of the National Historic Preservation Act of 1966. These comments are those of the SHPO and relate only to Historic/Cultural resources. They do not include other environmental impacts to New York State Parkland that may be involved in or near your project. Such impacts must be considered as part of the environmental review of the project pursuant to the National Environmental Policy Act and/or the State Environmental Quality Review Act (NY Environmental Conservation Law Article 8).

We note that the South Brooklyn Marine Terminal is not eligible for listing in the State and National Registers of Historic Places. We further note that the following State and National Register eligible or listed resources are adjacent to the project area: the Bush Terminal Historic District, the American Can Company building, the Gowanus Expressway Viaduct, Storehouse #2, U.S. Navy Fleet Supply Base, and Intermediate School 136. We have reviewed the report submitted to our office on March 1st, 2022. Based upon our review, it is SHPO's opinion that the proposed work will have No Adverse Effect upon historic properties.

If you have any questions, I am best reached via e-mail.

Sincerely,

Olivia Brazee
Historic Site Restoration Coordinator
olivia.brazee@parks.ny.gov

via e-mail only

cc: A. Sutherland, Maritime Administration
A. Rachleff and N. Stehling, AECOM

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