SANDY HOOK TO BARNEGAT INLET, SEA BRIGHT TO MANASQUAN, NJ COASTAL STORM RISK MANAGEMENT GENERAL REEVALUATION STUDY DRAFT INTEGRATED GENERAL REEVALUATION REPORT AND ENVIRONMENTAL ASSESSMENT

APPENDIX A6 CULTURAL RESOURCES ASSESSMENT

February 2026

Table of Contents

Introduction

The existing Sandy Hook to Barnegat Inlet Beach Erosion Control Project is authorized by the River and Harbor Act of July 3, 1958, in accordance with House Document No. 332, 85th Congress, second session, as modified by Section 854 of the Water Resources Development Act of 1986 (PL 99-662) and further modified by Section 4 of the Water Resources Development Act of 1988 (PL 100-676) and Section 102 (r) of the Water Resources Development Act of 1992 (PL 102-580).

The Sandy Hook to Barnegat Inlet project provides coastal storm risk management for the highly populated communities and infrastructure along the Atlantic coastline in Monmouth County and Ocean County, New Jersey. The project area is divided into three sections: Section I, which extends for 12 miles from Sea Bright to Loch Arbour (formally Ocean Township); Section II, which includes the 9 miles from Asbury Park to the Manasquan Inlet; and Section III, which extends from Manasquan Inlet to Barnegat Inlet, which is managed by Philadelphia District.

1 EXISTING PROJECT

The Sandy Hook to Barnegat Inlet project area is divided into three sections:

- Section I – 12 miles from Sea Bright to Loch Arbour (formally Ocean Township),
- Section II – 9 miles from Asbury Park to the Manasquan Inlet, and
- Section III – 14 miles from Manasquan Inlet to Barnegat Inlet, which is managed by Philadelphia District.

Sections I and II consist of 21 miles of shoreline from the Borough of Sea Bright to the Manasquan Inlet in Monmouth County, New Jersey (Figure 1). The existing project provides beach erosion control, protection of the shoreline of the highly populated communities and infrastructure located along the Atlantic coast of Monmouth County, New Jersey. The existing project consists of a beach template with no dune and a 100 ft wide berm, with an additional 40 ft of advanced fill. The existing berm specifies a top elevation of +7.3 ft North Atlantic Vertical Datum of 1988 (NAVD88), plus a 2 ft berm cap, leading to a +9.3 ft NAVD88 berm elevation. The project includes periodic nourishment on a six-year cycle for a period of 50 years from the start of initial construction in 1999.

The Study Area consists of the full length of Section II, the nine miles from the northern extent of Asbury Park to the Manasquan Inlet in Monmouth County, New Jersey. Section II is further divided into two reaches. Reach 4 spans from the northern extent of Asbury Park to the Shark River Inlet (southernmost extent of Avon-by-the Sea Borough); Reach 5 spans approximately 6 miles from the Shark River Inlet (northernmost extent of Belmar Borough) to the southern end of Manasquan Borough. The Study Area is the existing authorized project in Section II along with the immediately surrounding areas.

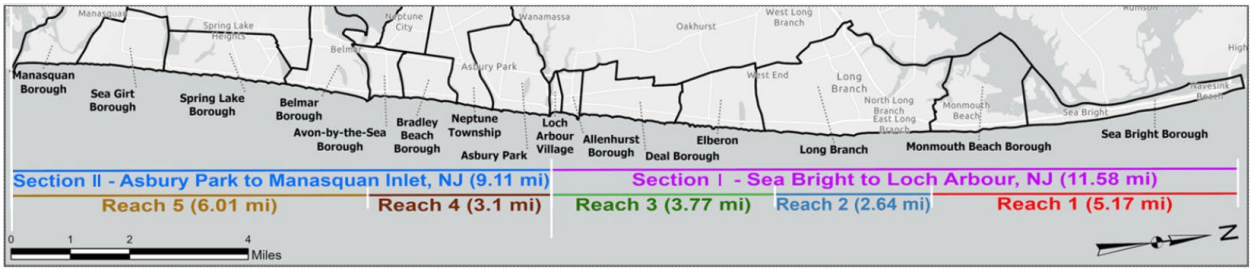


Figure 1: Study Area, Sea Bright to Manasquan, NJ

2 FEDERAL AND STATE CULTURAL RESOURCES COMPLIANCE

The U.S. Army Corps of Engineers (USACE), as a Federal Agency, has certain responsibilities for the identification and protection of cultural resources. Cultural resources include prehistoric and historic archaeological sites, buildings, structures, districts, or certain objects. Cultural resources are discussed in terms of archaeological resources, architectural resources, or resources of traditional cultural significance.

Federal and state laws require the USACE to consider effects on cultural resources. The Council on Environmental Quality's regulations implementing the National Environmental Policy Act (NEPA), as amended, require that Federal agencies consider the "unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas" and "the degree to which the [proposed] action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources" (40 CFR §1508.27(b)(3), (8)).

The USACE must also consider the effects of its undertaking on historic properties as defined in 54 U.S.C. §300308 of the National Historic Preservation Act (NHPA). The NHPA (54 U.S.C.§300101 et. seq.) distinguishes historic properties as any prehistoric or historic district, sites, building, structure, artifacts, or object included on, or eligible for inclusion on, the National Register of Historic Places (NRHP). Other Federal laws and regulations also protecting these resources include the Archaeological and Historic Preservation Act of 1974 (54 U.S.C. §§312501- 312508), and the Archaeological Resources Protection Act of 1979 (16 U.S.C. §§470aa-470mm), the Abandoned Shipwreck Act of 1987, the Advisory Council on Historic Preservation Guidelines for the Protection of Cultural and Historic Properties (36 CFR Part 800), and the Sunken Military Craft Act of 2004. These Federal laws, specifically Section 106 and Section 110 of the NHPA, require Federal agencies to consider the effects of their actions on cultural resources and historic properties, including districts, sites, buildings, structures, and objects included or eligible for inclusion in the NRHP.

Section 106 of the National Historic Preservation Act (NHPA) (54 U.S.C. § 306108) and its implementing regulations (36 CFR Part 800) requires an assessment of the potential effect of any federal undertaking on historic properties that are within the proposed project's area of potential effects (APE). The NHPA defines the APE as 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" (36 CFR 800.16(d)). Additionally, Section 110(f) of the NHPA (54 U.S.C. § 306107) requires USACE to minimize harm to all National Historic Landmarks (NHL) within the Area of Potential Effects (APE) to the maximum extent possible.

For the Seabright to Manasquan study, the APE extends beyond the direct footprint of the project to encompass construction, demolition, vibration, and auditory effects; or areas where structural or non-structural measures have the potential to affect the viewshed or setting of historic properties. An effect is an alteration to the characteristics of a historic property qualifying it for inclusion in or eligibility for the NRHP (36 CFR 800.16(i)). Examples of effects include visual intrusions, alterations of setting, noise, vibrations, viewsheds, and physical impacts. Indirect effects to historic properties are those caused by the undertaking that are later in time or farther removed in distance but are still reasonably foreseeable. Applicable state laws include the New Jersey Register of Historic Places Act, (Laws of 1970, Chapter 268) and New Jersey Public Law 2004, Chapter 1.

Federal agencies are required under Section 106 of the National Historic Preservation Act to "consider the effects of their undertakings on historic properties" and consider alternatives "to avoid, minimize or

mitigate the undertaking's adverse effects on historic properties" [(36 CFR 800.1(a-c)] in consultation with the State Historic Preservation Officer (SHPO) and appropriate federally recognized Indian Tribes (Tribal Historic Preservation Officers -THPO) [(36 CFR 800.2(c)]

The focus of this draft report is to identify historic properties within the Direct and the Indirect APE/Visual Impact Areas for the project's alternatives and assess the potential for the project to adversely affect those resources.

3 PROJECT HISTORY

A cultural resources study was conducted in 1985 for the overall Sandy Hook to Barnegat Inlet Project Section I, (Heritage Studies 1985). This study documented no significant shoreline structures or onshore prehistoric or historic archaeological sites within the project area. It was noted however that there was a high probability for the occurrence of inundated prehistoric and shipwreck sites within the near shore beach fill zone. The District carried out numerous investigations within the project's boundaries to identify shipwrecks, asses their NRHP Eligibility and determine the effects of sand placement on the shipwrecks (Alpine Ocean Seismic Survey 1989; Alpine Ocean Seismic Survey and Ebasco Environmental 1990, 1991). All work was coordinated with the NJHPO. A cultural resources study was conducted in 1988 for the overall Section II which extends from Asbury Park to Manasquan (Pickman 1988).

In 1991 and 1993 the Corps, the NJHPO and the Advisory Council on Historic Preservation (ACHP) executed two Memoranda of Agreement (MOA) for Sections I and II that required the Corps to survey the near shore area to identify possible wrecks and then to evaluate all shipwrecks in the near shore sand placement area for their eligibility for listing on the NRHP. Properties deemed eligible for listing were to be recorded and a monitoring plan was to be prepared and carried out in order to assess the effects of the undertaking on historic properties. Following execution of the MOAs for Sections I and II, the District conducted a series of surveys to identify and evaluate the wrecks in the near shore area (The Greeley-Polhemus Group 1996, Panamerican Consultants, Inc. 1996, 1997, WHC Industries, Inc. 1995). The remote sensing and dive surveys resulted in the identification of two eligible wrecks in Section I; the *Adonis/Rusland* and the *Chauncey Jerome, Jr*. and three wrecks in Section II; the *Rjukan, Malta*, and *Western World*. The *Amity* was originally thought to be eligible but was ultimately determined not eligible however it is of considerable value to local divers and historians. The *Rjukan* and the *Malta*, although found eligible for the NRHP, are buried underneath a significant amount of sand. The conclusion of the evaluations was that there were three eligible/listed wrecks within the area of potential effect for sand placement, the *Chauncey Jerome, Jr*., the *Adonis/Rusland*, and the *Western World*.

Following this determination the District set up a monitoring program to assess whether sand placement would have an effect on historic properties. In 2000 a report was prepared entitled *Compilation of Four Shipwreck Recordations and Development of a Public Outreach Program for the Atlantic Coast of New Jersey Cultural Resource Monitoring Program* (Panamerican Consultants, Inc. 2000). It outlined a set of requirements for subsequent site recordings so that the degree of impact could be accurately determined. The recordings were carried out on the *Chauncey Jerome Jr*., the *Western World*, the *Adonis/Rusland*, and the *Amity*. No direct impacts were documented during the process of sand placement. In 2013 a comprehensive remote sensing survey of each wreck site concluded that all four wrecks remained *in situ* according to their original map record with no movement. This monitoring program continued in 2021 with the preparation of the report *Remote Sensing Survey of the Borrow Areas 8, 9Amityand Four Known Shipwrecks* (Panamerican 2023) The investigations found that all four shipwrecks remain in-situ and are now completely buried, save a small component of the *Amity*.

3.1 THE SEA BRIGHT BORROW AREA

The Sea Bright Borrow Area (SBBA) has been the primary source of sand for much of the ACNJ Project. Each project segment constructed has used just portions of the overall SBBA. The SBBA was first subject to remote sensing surveys for cultural resources in the 1980s (Alpine Ocean Seismic Survey, Inc. 1986, 1988; Alpine Ocean Seismic Survey, Ebasco Environmental & Tidewater Atlantic Research 1990). The survey included side scan sonar, magnetometer, and subbottom profiling. The survey resulted in the detection of three anomalies, an anchor, a field of modern debris dumped from a barge, and a sewer outfall. No significant cultural resources of any kind were identified as a result of the survey. Review of vibracore

data from the area suggested that there are recent (roughly 4000-6000 years ago) lagoonal clay deposits within the boundaries of the SBBA which may represent the relict river channels that existed behind barrier islands that were located further east at a time of lower sea level. These deposits were believed to have potential for submerged cultural deposits, however, these clayey deposits were also considered unsuitable for beach placement and therefore dredging was not be expected to impact potential offshore archaeological sites.

In 1989-1990 a remote sensing survey was carried out for the "1989 Borrow Area", which was an expansion area adjacent to the original SBBA (Alpine Ocean Seismic Survey, Ebasco Environmental & Tidewater Atlantic Research 1990). The survey identified 25 targets of possible historic significance through magnetometer survey. These areas comprised a small amount of the overall borrow area and the decision was made to avoid these targets rather than pursue identification of the anomalies. In sum, 7-10 percent of the total borrow area was reduced by avoidance of these anomalies. Areas of suitable versus unsuitable material were identified from geophysical investigations leaving the areas with potential for submerged prehistoric sites protected from dredging impacts. No further remote sensing studies were carried out within the SBBA for cultural resources.

In 1995, following construction of the first project segment at Monmouth Beach, roughly 200 prehistoric artifacts were recovered from a 300-foot stretch of newly placed sand. The records traced the sand back to a rectangular area at the northern end of the Sea Bright Borrow Area (SBBA) measuring 1000 by 9000 feet at water depths of 32 – 42 feet below the water surface. The collection consisted of 40 projectile points classified as Archaic period, 59 other bifacially worked tools, 3 cores, and 107 flakes or possible flakes. These artifacts together are known as the Corcione collection after the person who found the material. The find was understood at the time to represent an archaeological assemblage that was preserved under rare and unique circumstances within a highly disturbed matrix of sandy sediment at the time of marine transgression. The site was also believed to have been destroyed by the dredge at the time of construction. The likelihood of encountering another deposit within the location of the borrow area under use was considered extremely low based on the remote sensing surveys conducted previously for the project. Another challenge faced at the time was that combing the beach after sand placement was an inadequate method for locating archaeological deposits due to the high volume of sand being deposited and minimal visibility. Based on this reasoning further investigations were not recommended for the area of SBBA then under use and monitoring of the sand placement activities from the beach was also not recommended. The project was constructed without additional unanticipated finds being reported.

In 2009, the District received funding for beach replenishment in Long Branch. Because of the potential for Unexploded Ordnance (UXO) the District began retrofitting cages with 0.75-inch screens at the discharge end of the pipelines to prevent ordnance, as well as large rocks and rubble, from being excavated and placed on the beach. Screens with a 1.25-inch mesh were already being used and continued to be fitted onto the drag intake head to prevent ordnance and large objects from the sea floor from being sucked into the dredge. The cages allowed UXO inspectors to look through the debris and collect the ordnance material for proper disposal. The fitting of the cages onto the discharge end afforded a unique opportunity for the archaeological staff at the District to inspect the cages for cultural materials and potentially detect archaeological sites where the opportunity had not existed in the past.

A monitoring plan was therefore implemented in 2009 whereby the archaeologist could inspect the debris once or twice a week for the length of the project. This monitoring was carried out for three renourishment contracts between 2009 and 2013. During dredging operations the dredging operator was required to record the location of their dredging work on each day and the location where sand and debris was placed during the day's operations. The cages at the discharge end were dumped two or three times a week and the contractor placed the dumped material at a predetermined location for inspection by the project archaeologist. The archaeologist raked through and sometimes screened the material from the cages

through a ¼ mesh screen to sift through smaller grained sand and debris that would collect in the screen. No Archaeological remains were collected during the monitoring efforts however some modern artifacts were recovered when the materials were screened. These included leather straps, rubber shoe soles, fishing weights, iron rivets and pins likely from the dredge itself, and small munitions including modern bullets and roughly forty 0.75 caliber lead shot pieces which were possibly World War I or World War II era.

Work was conducted on the Corcione collection and the SBBA area as part of a doctoral dissertation completed through Stony Brook University in the early 2000s by Dr. Daria Merwin. The Corcione collection was inventoried and subsequent investigations carried out with a team of divers to search for evidence of the source of the artifacts within the SBBA (Merwin 2003, 2010). Merwin analyzed the artifact assemblage finding that the diagnostic projectile points are associated with the Early, Middle, and Late Archaic periods (roughly 10,000 B.P. to 3000 B.P). Assuming that the remains represented a single archaeological site, Merwin argued that the diversity of lithic artifacts suggested that several different activities took place at the site indicating it may have been a camp site. Merwin argued that not only was there a high potential for these types of sites to exist in certain areas on the coastal plain but that although the sites are traditionally disqualified for their disturbed context, they may still come to rest in a single isolated area and therefore have the potential to address a number of questions about land use on the coastal plain prior to marine transgression (Merwin 2010).

Merwin's fieldwork program sought to assess the sea floor conditions in and around the dredged area which yielded the Corcione collection, and to perform an underwater archaeological survey looking for additional prehistoric artifacts. She determined from dredging reports that the materials must have been recovered from the upper 4 feet of sand however the exact location from which the artifacts were dredged could not be determined so the team's investigation focused on areas in the vicinity of drowned river channels within the borrow area. A total of 236 dives were made between 2003 and 2004 with the majority of the fieldwork being carried out in 2003. The 2004 season was fraught with complications from poor diving conditions to shifting sands within the borrow area. Fourteen hectares (100 by 100 meters [325 by 325 foot] squares) were intensively studied in all. In summary, the investigations in the SBBA resulted in the discovery of two lithic artifacts 16.5 meters (54 feet) below the water surface, however, no archaeological sites were identified as a result of the survey (Merwin 2003, 2010).

The SBBA was resurveyed in the summer of 2013 to bring the site date up to industry standards (Panamerican 2014b). Out of the 317 magnetic anomalies and 22 sidescan sonar targets initially recorded the District identified eight anomaly clusters and three single anomalies, one of which has the potential to represent historical resources. In addition to the anomalies of interest the District delineated three paleo landforms with high sensitivity for submerged precontact archaeology. The updated survey results formed the basis for avoidance areas established for the project in consultation with the NJSHPO and federally recognized Tribes.

3.2 PROGRAMMATIC AGREEMENT AND RECENT ACTIVITIES

A Programmatic Agreement (PA) was executed in 2014 among the New York District, NJHPO and the Delaware Tribe of Indians superseding the two previously signed MOAs. The PA combined the two project sections to encompass the entire project and included the Sea Bright Borrow Area (SBBA). The PA outlined the actions the District would undertake for vessel identification and monitoring, avoidance of sensitive areas within the SBBA, and a new program for pumping operations whereby personnel observing for unexploded ordnance (UXO) would be educated on the type of material to look for and would be instructed to stop work and consult with the District archaeologist should artifacts be encountered.

In 2022 an updated PA was executed by the District, the Bureau of Ocean Energy Management (BOEM), and NJ SHPO. The latest PA incorporates six new borrow areas, some which are located within the

jurisdiction of BOEM. The PA also includes a stipulation allowing for the inclusion of additional borrow areas should the need arise during any upcoming renourishment events (Enclosure 1).

4 PROPOSED UNDERTAKING

The existing project performs as designed and adequately manages the risk of erosion. However, in 2012, Hurricane Sandy showcased how much damage, and inundation can occur from an intense storm event. (Hurricane Sandy Coastal Projects Performance Evaluation Study, USACE, 2013). The project was overtopped, revealing the opportunity to modify the project to better manage the risk of inundation in Section II.

As a result of Hurricane Sandy, impacts including berm lowering/flattening were documented over the entire project length (Sea Bright to Manasquan Inlet) with an estimated average drop in beach elevation of 5 - l0 ft. Locations across the project area which had locally built dunes prior to the storm lost all or near all of the existing dunes, plus any established dune vegetation.

The 0.5-mile coast of Ocean Grove has a wide beach for the entire length from its southern border with Bradley Beach and its northern border with Asbury Park. The southern and central sections of the coast along Ocean Avenue consists of residential properties and a boardwalk adjacent to the landward extend of the berm. Intermittent vegetated dunes are located east of the boardwalk along the landward extent of the berm throughout Ocean Grove. There are eight beach access points that result in separability of the dune system.

A wide beach exists for the entire one mile of coast from the southern border with Ocean Grove and the northern border with Loch Arbor. Asbury Park is an urbanized mix of residential and commercial properties, both east and west of Ocean Ave. A boardwalk is located directly east of Ocean Ave., approximately 3-ft above grade. Two large pavilions are located east of the boardwalk within the city. Scarping is occurring in the Asbury Park area, and the shoreline is hardened. Sand along the beach is distributed unevenly. A renourishment on the beach was completed in 2021 but there is a considerable amount of sand to one side of a jetty and not on the other side. Significant sediment transport is occurring in this area.

4.1 ALTERNATIVES

4.1.1 NO ACTION ALTERNATIVE

Under Alternative 1, the existing project would continue as authorized, renourishing the current project template on a six-year renourishment cycle, through the end of authorization in 2049 (Figure 2). As mentioned previously, the current project template specifies a 100 ft wide berm with 40 ft of advanced fill, with a design elevation of +9.3 ft NAVD88 elevation, (inclusive of the 2 ft berm cap).
(Figure 2).

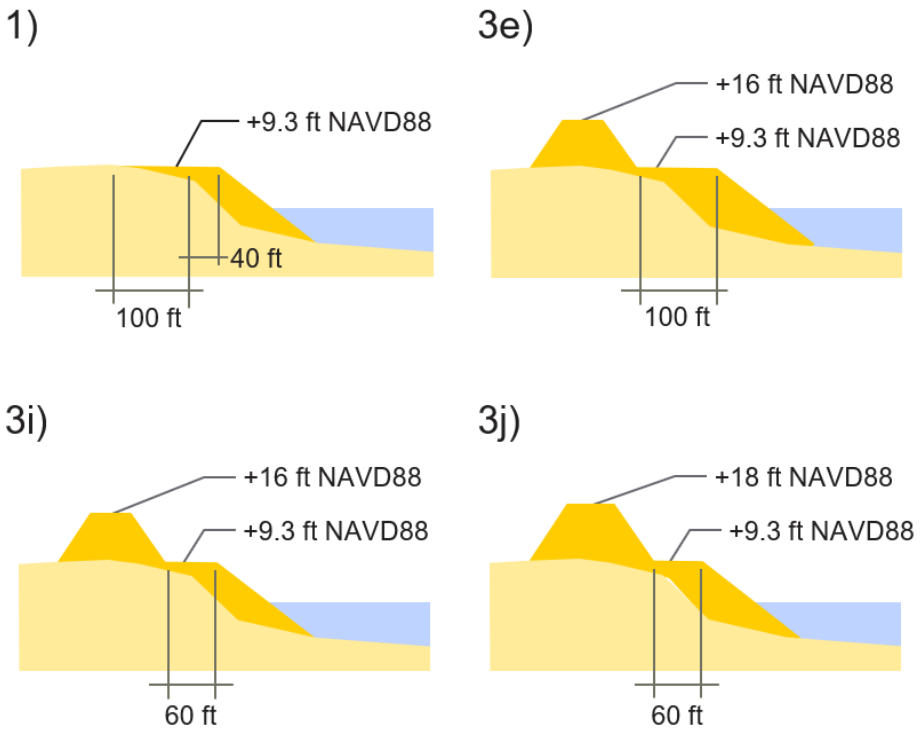


Figure 2: Alternatives

4.1.2 ALTERNATIVE 3E

The Tentatively Selected Plan (TSP) is Alternative 3e. Alternative 3e, includes a +16 ft NAVD88 crest elevation dune, with a 25 ft crest width and 1V:5H landward and seaward dune slopes (Figure 3). The extent of this dune would vary based on local conditions and topography, though the seaward toe of the dune would generally extend approximately 90 ft from the existing project baseline. To maintain a 100 ft berm width at the same design elevation as the existing project (+9.3 ft NAVD88), the berm would extend approximately 50 ft further seaward than the currently authorized project. The initial construction of the dune, extension of the berm, and future renourishments would require an additional 1,580,000 cubic yards of sand over the remainder of the existing authorization. This alternative would remain on the existing six-year renourishment cycle, with initial construction during the renourishment scheduled for 2031.

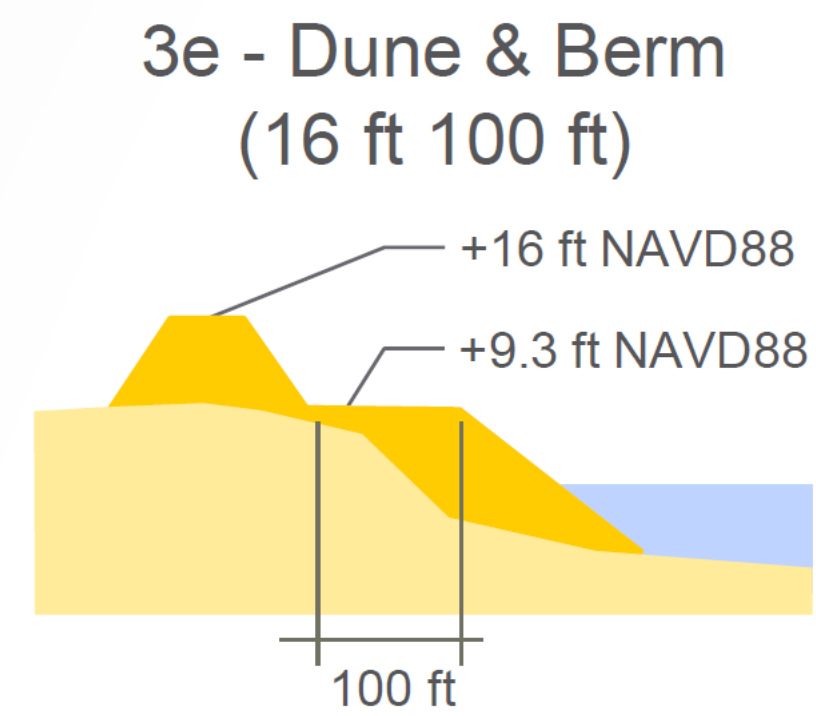


Figure 3: Alternative 3e

4.1.3 ALTERNATIVE 3I

Similar to Alternative 3e, Alternative 3i includes a +16 ft NAVD88 crest elevation dune, with a 25 ft crest width and 1V:5H landward and seaward dune slopes (Figure 4). The extent of this dune would vary based on local conditions and topography, though the seaward toe of the dune would generally extend approximately 90 ft from the existing project baseline. To establish a 60 ft berm width at the same design elevation as the existing project (+9.3 ft NAVD88), the berm would only extend approximately 10 ft further seaward than the currently authorized project. The initial construction of the dune, extension of the berm, and future renourishments would require an additional 580,000 CY of sand over the remainder of the existing authorization. This alternative would remain on the existing six-year renourishment cycle, with initial construction during the renourishment scheduled for 2031.

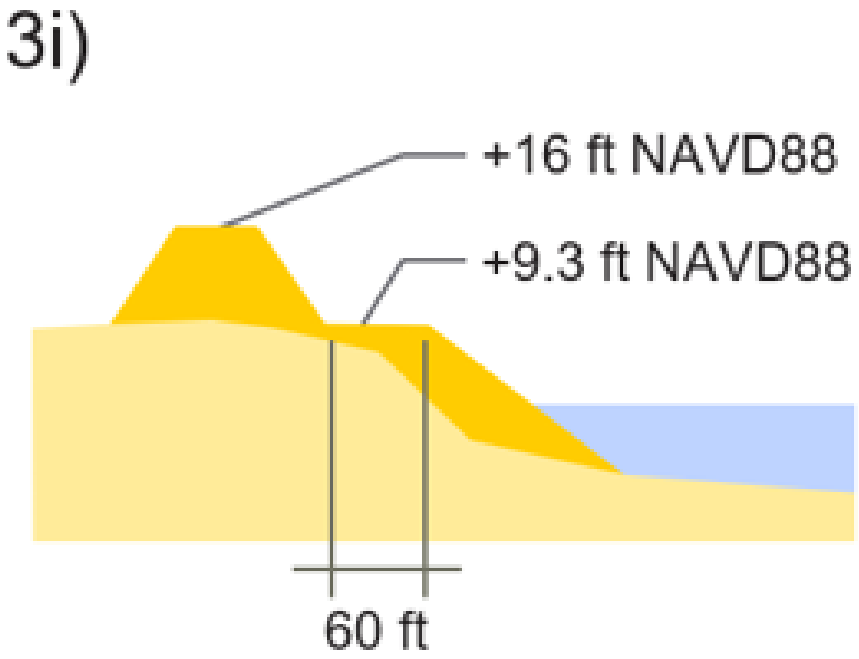


Figure 4: Alternative 3i

4.1.4 ALTERNATIVE 3J

In contrast to the other alternatives, Alternative 3j includes a +18 ft NAVD88 crest elevation dune (Figure 5). Other characteristics, including the 25 ft crest width and 1V:5H landward and seaward dune slopes remain the same. The extent of this dune would vary based on local conditions and topography, though the seaward toe of the dune would generally extend approximately 110 ft from the existing project baseline. To establish a 60 ft berm width at the same design elevation as the existing project (+9.3 ft NAVD88), the berm would only extend approximately 30 ft further seaward than the currently authorized project. The initial construction of the dune, extension of the berm, and future renourishments would require an additional 1,229,000 CY of sand over the remainder of the existing authorization. This alternative would remain on the existing six-year renourishment cycle, with initial construction during the renourishment scheduled for 2031.

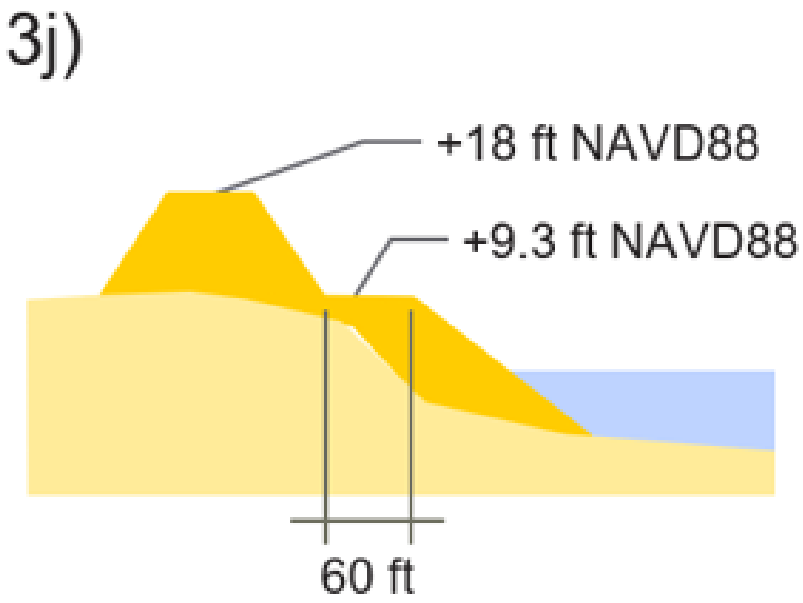


Figure 5: Alternative 3j

5 DIRECT AREA OF POTENTIAL EFFECTS

This cultural resource assessment preliminarily identifies known cultural resources that could be directly affected by the alternative. The activities associated with the proposed undertaking include all new construction, improvements, and maintenance activities related to the proposed alternative. For this study, the direct APE for cultural resources is defined as the area of the proposed project including dune and berm construction and beach fill. The direct APE is the area in which an undertaking is most likely to have impacts on cultural resources. The direct APE includes the area that may be affected by direct physical impacts, such as demolition, alteration, or disturbance of a resource. For this project the direct APE was defined as a linear area, 600 feet in width, and 47,000 feet in length to encompass the entire dune and berm features.

Section 106 of the National Historic Preservation Act and 36 CFR 800.5 provide a useful definition of adverse effects, as well as helpful examples:

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

(2) Examples of adverse effects. Adverse effects on historic properties include, but are not limited to:

- Physical destruction of or damage to all or part of the property;

- Alteration of a property, including restoration, rehabilitation, repair, maintenance,
- stabilization, hazardous material remediation and provision of handicapped access, that is not consistent with the Secretary's Standards for the Treatment of Historic Properties (36 CFR 68) and applicable guidelines;
- Removal of the property from its historic location;
- Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance; Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features;
- Neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization; and
- Transfer, lease, or sale of property out of Federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term reservation of the property's historic significance [36 CFR 800.5].

6 INDIRECT AREA OF POTENTIAL EFFECTS

The indirect area of potential effect (APE) is the area in the vicinity of the proposed project where those actions or project components could affect a historic property. Indirect affects could be visual effects, temporary or permanent access restrictions, vibration, noise, or other effects that may not directly impact the property but would still have an effect. For this assessment the indirect APE was defined as a 250-ft buffer delineated around the proposed measures to define the area outside the direct APE that could be affected by construction activities (Figure 4). The 250-ft buffer enabled an identification of known cultural resources that are considered reasonably within view of the project features or that would be considered to have a clear view of the project features. The mere existence of a visual effect does not automatically imply that the effect is adverse. An *adverse* visual effect occurs when the addition of a new element to a landscape is found to diminish those aspects of a property's significance and integrity, such as its historic setting, which make it eligible for the State and National Registers of Historic Places (S/NRHPs).

Adverse visual effects are generally of two types, aesthetic or obstructive. An adverse aesthetic effect transpires when an undertaking's visual effect has a negative impact upon the perceived beauty or artistic values of an historic structure or landscape, thereby diminishing the appreciation, experience, or understanding of the resource. Common examples of adverse aesthetic impacts include the diminution or elimination of open space, or the introduction of a visual element that is incompatible, out of scale, in great contrast, or out of character with the historic resource or its associated setting. An adverse obstructive effect occurs when the proposed undertaking blocks any part of an historic property or eliminates scenic views historically visible from the property.

Figure 6: Map Showing Direct and Indirect APE

7 BACKGROUND RESEARCH

The Atlantic Coast of NJ has a long history of use and habitation. It is a highly dynamic geologic area with potential for deeply buried paleolithic sites, as well as historic buildings. The Lenape set up various small-scale settlements along the coast and habitation exploded in the area after the Civil War with resort towns springing up and drawing in all types of people. This economic change throughout the 17th, 18th and 19th century had a big effect not only in New Jersey but also in New York with shipping and the movement of people. Understanding these changing times is essential to understanding the importance that the Atlantic Coast of New Jersy played on the broader Atlantic Coast.

7.1 ENVIRONMENT

7.1.1 SOIL AND GEOLOGIC BACKGROUND

In Monmouth County, this consists of layers of sands, gravels, marls, and clays deposited during the Cretaceous and Tertiary Periods (USACE 1989) (Figure 7). These sediments frequently overlain by Quaternary deposits and are exposed directly to wave attack. Sediment texture varied among the three areas with fine grain sizes (fine sands, very fine sands, and silts and clays) steadily decreasing and the proportion of medium sands increasing along a South to North gradient. As was observed for the intertidal stations, nearshore sediments were somewhat coarser in spring than fall due to the annual pattern of sediment erosion and deposition. Despite this seasonal variation in sediment texture, the pattern of increasing coarseness among areas remained consistent across years. Presumably, the temporal shift in sediment texture is a reflection of long-term longshore sediment transport processes.

The configuration of the seafloor is based on several natural processes multiple glacial advances, isostatic rebound (uplift), subsequent marine incursion (and loading), and modern seafloor processes (Commonwealth 2024).

The continental shelf of New Jersey is known as the Mid-Atlantic Bight. It has been studied by marine geologists using various techniques such as bathymetric, seismic, and sediment coring. The resulting configuration is due to exposure by sea level regression during the late Pleistocene, Last Glacial Maximum (LGM), sea level incursion during three pulses of sea level rise, and wave and current processes after submergence (Commonwealth 2024).

The full extent of the glaciers and exposure of the continental shelf occurred around 18,000 years before present (YBP). After that melting and sea level rise began around 14,000 and continued until after 6,000 YBP (Commonwealth 2024). Over time the melting was mostly continuous with periods of dramatic melting which would in turn raise sea levels over a relatively short span of time (Commonwealth 2024). With each of these melt periods and sea level changes the shoreline changed as did the areas of habitation. While these areas are today under water, due to the shallowness and proximity to the modern shoreline, the Project area could have evidence for Paleoindian and Archaic culture groups.

Evidence of these sites have been deposited during renourishment of beaches along the coast. The “Corcione Collection”, a collection of more than 200 stone artifacts consisting of Early Middle and Late Archaic artifacts were deposited during a renourishment project at Monmouth Beach (Commonwealth 2024). The site from which the artifacts originated from seems to have been occupied intermittently for several thousand years, possibly as early as 10,000 YBP. Similar finds have been identified along the Atlantic Coast in these dynamic geologic locations (Commonwealth 2024).

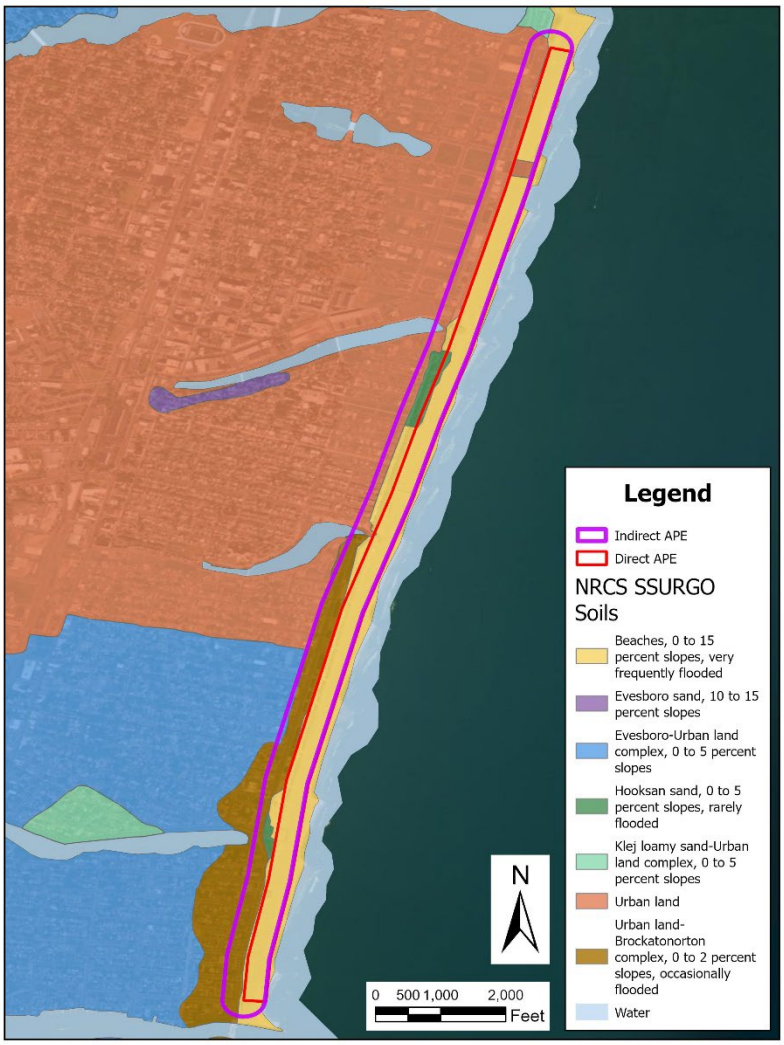


Figure 7: Map Showing Soil Composition in APE

7.1.2 FLORA AND FAUNA

Near shore and surf zone habitats contained a diverse and abundant assemblage of 33 seasonally present larval and juvenile fish species as well as other small forage species (USACE 2001). Larval fish species were dominated by flounder, mackerel, croaker, anchovies and hake species. Seasonally abundant juveniles included bluefish, menhaden and scup. Numerically, silversides were the most abundant and common species observed in the nearshore/surf zone. Anchovies (striped and bay) were also caught in large abundances. Juveniles and adults of striped bass (*Morone saxitillis)*, summer flounder (*Paralicthys dentatus*), windowpane (*Scopthalmus aquosus*), spot (*Leiostomus xanthurus*) and other common species as well as some exotics were also found in the near shore. The greatest abundances and species diversity were correlated to proximity to hard structures (i.e.groins) along the beach. Other fish species associated with

these structures include black fish (*Tautoga onitis*), black bass (*Centropristus striata*), scup (*Stenotomus chrysops*) and sculpins (*Scorpaeniformes*).

A total of 141 taxa was collected in the nearshore benthic samples Asbury Park to Manasquan. Dominant taxa included (Magelona) polychaetes, tellinid clams, (Spisula solidissima) surf clam, (Mytilus edulis) blue mussel, and (Ilynassa trivitata) mud snail, the amphipods (Psammonyx nobilis), (Acanthohaustorius millsi) and (Unciola irrorata), the isopod (Chirodotea tuftsi), and the spionid polychaete (Dispio uncinata).

7.2 HISTORICAL CONTEXT

7.2.1 PRECONTACT PERIODS

The archaeological culture groups likely associated with activities in the nearshore of the Project, include pre-Clovis, Clovis of the Paleoindian Period, Early to Late Archaic and Woodland sites. The natural environment greatly affected the prehistoric populations during these periods, and each culture system was shaped by adaptations made to these different environmental factors. These factors were based on resources, and these resources were affected by glaciers and sea level rise.

Clovis refers to a suite of fluted points and associated artifacts diagnostic of late Pleistocene age that are found in great numbers in eastern North America, including New Jersey (Panamerican 2014, Commonwealth 2024). Evidence for early people in the region becomes most visible with the Clovis artifacts but evidence for earlier human presence along the Eastern seaboard is increasing. Some of these potential pre- Clovis sites can be found in Pennsylvania, Virginia and Maryland. From these sites it can be inferred that people were probably out on the continental shelf during the Last Glacial Maximum (Panamerican 2014, Commonwealth 2024).

The Early Archaic period is characterized as a continuation of Clovis culture with a difference in the form of projectile points (Panamerican 2014, Commonwealth 2024). They changed from lanceolate to notched point projectiles. These sites have been found near the coast and upland environments.

The Middle Archaic period is recognized by bifurcated and stemmed points, as well as ground stone tools. These sites seem to congregate along the main trunk of rivers and along the coast (Panamerican 2014, Commonwealth 2024). Sites have been found near the project area increasing the potential for sites to be identified in the project area.

Late Archaic period artifacts have large broad-bladed, biface projectile points and steatite vessels (Panamerican 2014, Commonwealth 2024). Late Archaic sites have higher populations and length of stay in one location. Therefore, larger artifact assemblages make identifying Late Archaic sites easier. These sites are known from estuary locations and could be preserved offshore.

The Woodland period is separated into Early, Middle and Late lasting from 3,000 BCE to 1600 BCE (Heritage Studies 1985). Its most defining feature is the development of ceramic technology. Vessels during this time started off as simple ceramic bowls similar to steatite bowls and developed into vessels of various sizes and decorations from simple corded designs to more elaborate net impressions (Heritage Studies 1985). During this time period there was increased sedentism and increased emphasis on tools relating to plant and fish resource exploitation.

During the early historic Contact period the native people of New Jersey referred to themselves as Lenape whereas the Europeans utilized the name Delaware. The Lenape were linguistically Algonquian and lived in small, dispersed settlements (Heritage Studies 1985). European contact brought severe changes to the Lenape way of life including the destruction of native traditions, increased dependance on European trade goods, disease, westward migration and loss of native land.

7.2.2 COLONIAL PERIOD

Verrazzano, an Italian from Florence sailing for Francois I, the king of France was Europe's first exposure to New York Bay. He left Europe in January 1524 to find a route to China. In early March he came close to Cape Fear in North Carolina and by Mid-April Verrazzano had coasted far enough north and east to enter New York Bay. After a brief reconnaissance of the area, he returned to France in July. He was able to conclude that he did not reach China, but rather a "New World". (Panamerican 2004, Panamerican 2023).

In 1609, Henry Hudson, an Englishman in the employ of the Dutch East India Company, investigated portions of the American east coast. He sailed 150 miles up what is today the Hudson River (Panamerican 2004, Panamerican 2023). The Dutch began European control of the region. Private trading operations were established on the Hudson River in 1613. The Dutch named the region the New Netherlands in 1614 and explored much of the area setting up private fur-trading operations expanding into the surrounding country. In 1623 the Dutch West India Company took over trading operation in the region, and the town of New Amsterdam was founded in 1625 (Panamerican 2004, Panamerican 2023).

New Amsterdam grew and rivaled Boston as a center for maritime trade. The main trade items were furs, fish, beef, and flour being exported and tobacco, slaves, and sugar being imported. By 1644 a more aggressive colonial policy was enacted by Charles II of England, and the English took the colony (Panamerican 2004, Panamerican 2023).

New Amsterdam was renamed New York soon after the English took over. The portion between the Hudson and Delaware River was known as New Jersey. In the eighteenth century the ports' main exports included whale oil, beaver pelts, and tobacco to England and flour, pork, bread, peas, and horses to the West Indies (Panamerican 2004, Panamerican 2023). Imports included rum, molasses, sugar, fish oil, whale fins, blubber, turpentine, seal skins, hops, cider, bricks, coal, wrought iron, tin, joinery, carriages and chairs (Panamerican 2004, Panamerican 2023). Population growth mirrored the increase in shipping activities.

In 1665, the northern portion of the Atlantic Coast of New Jersey was granted to an association of prospective settlers, called the Monmouth Patent, the area was largely settled by Quakers migrating from Long Island (Panamerican 2004, Panamerican 2023). These settlements were dispersed isolated farmsteads with most settlers being English. Farming and agriculture were the primary pursuit in this area well into the 19th century. The soil along the shore were of poor quality, and settlements tended to be further inland. Fishing and shell fishing were prominent and an important way of life in the area, however these activities did not require permanent structural features.

In addition to agriculture whaling was an important part of the New Jersey economy from the late 1600s through the mid-1800s (Chronicle 2025). Whales were utilized for a variety of purposes including meat for food; tissue for fertilizer; teeth for scrimshaw; oil for burning lamps, soaps, cosmetics, and lubricants; and bone for canes, whips, helmet frames, broom whistles, and spines for corsets, umbrellas, and parasols. By the late 1800s oystering had become a multimillion-dollar industry with New Jersey becoming the second largest producer after Virgina (Chronicle 2025).

7.2.3 19TH CENTURY

During the nineteenth century, sailing vessels of varying sizes sailed up the coast of New Jersey to and from the port of New York. These vessels included sloops, coastal schooners, merchantmen, and packet ships, which increased in size as time and technology progressed. In all the smaller communities along the coast of New Jersey, the schooner was the leading ship type, used largely for trading lumber and charcoal (Panamerican 2024). The clipper ships emerged in the late 1840s and 1850s. These were followed by large, multi-masted schooners.

In the late eighteenth century, the invention of the steam engine and its application to vessels at the turn of the nineteenth century played a profound role in the history of the area and changed the way goods were shipped (Panamerican 2004, Panamerican 2023). Steam power quickly became the dominant method of vessel propulsion, it shaped trade and economics. With these types of vessels being so dominant along the coast many are listed as having been wrecked near the approaches to New York.

The coastline of New Jersey has many hazards such as rocks, shoals and sand bars that have wrecked mariners throughout the years. The coast of New Jersey sees a lot of ship traffic being situated between the busy ports of New York and Delaware. In 1855 it was estimated that as many as 6,000 ships a year were passing along the Jersey Shore (Panamerican 2004, Panamerican 2023). With only small ports and few inlets to turn into during a storm, the coast was a dangerous stretch to cross. Before 1845 there were about 15 wrecks a year along the coast and that number decreased with the creation of Life Saving Stations and Lighthouses along the coast. In 1848 the Unites States Lifesaving Service was established, large in part to the U.S. Congressman William A. Newell of Monmouth County (Panamerican 2004, Panamerican 2023). New Jersey was the first state to have a federally-assisted lifesaving program. Four Lifesaving Stations were built in the Project Area from Asbury Park to Manasquan Inlet.

In the mid-19th century new fisheries and fishing villages along the shorefront. Docks and boat landings were built and around them small fishing villages were established. These villages grew with the expansion of transportation connections and the increase in the fishing industry. In 1860 the construction for the Long Branch and Seashore Railroad gave access to the larger steamboat docks (Heritage Studies, 1985). By the 1880s the fishing industry in these seaside villages changed from one to two-man small boats to larger vessels and crews dropping large nets. The fish were then cleaned and packed for shipment to New York in layers of ice in barrels. This ice was cut from the bays and ponds in the winter and stored in ice houses during the summer months. These structures could hold between 150 and 200 tons of ice and could serve four boats throughout the summer season (Heritage Studies, 1985).

After the Civil War the rise of business fortunes, rise of the middle class, expansion of leisure time and improved transportation led to the rise of tourism in America. In turn, many seaside resort towns popped up along the Monmouth County coastline. People living in dense cities such as New York And Philadelphia began visiting the Jersey Shore in great number during the early 19th century (Hunton and Hohn 2019). With the expansion of the railroad along the coast developers established resort communities for different clientele based on economic level, ethnic background, and religion.

> *"Long Branch was patronized by the nouveau riche, while Asbury Park was promoted as the moral alternative for the upright middle class. Ocean Grove and Atlantic Highlands were founded by Methodist camp meeting associations. Spring Lake attracted wealthy Philadelphians, and in time became known as the "Irish Riviera." Keansburg, Union Beach, Neptune City, and West Park (in Asbury Park) emerged as working-class resort areas. Water Witch Park (in Middletown) and Monmouth Beach*

were begun as private clubs, with home sites arranged on a curvilinear street pattern around a clubhouse." (Hunton and Hohn 2019, pg. 19)

One of the first developments was Ocean Grove. The Ocean Grove Camp Meeting Association was founded in 1869 as a religious retreat. Two years later in 1871 Asbury Park began its development. Both Ocean Grove and Asbury Park were laid out in a grid pattern with the railroad on the west and ocean on the east (Hunton and Hohn 2019). These towns had wide streets, a main thoroughfare, parks, and open space along the beach front. In other nearby town hotels and cottages sprung up and by 1908 hotels and boardinghouses could hold up to 33,000 visitors (Hunton and Hohn 2019).

7.2.4 20TH CENTURY

After World War 1 the economy shifted from agricultural to an industrial and urban center (Chronicle 2025). Industries such as railroads, oil, and factory building led to individual wealth. This wealth led to investment in leisure and recreation, included the development of shore towns some of which were popular with wealthy and powerful people (Chronicle 2025). This short age of prosperity was followed by the Great Depression in 1929. Banks closed, businesses suffered, and unemployment skyrocketed. The economic crisis continued until President Franklin Roosevelt introduced the New Deal legislation to give relief (Chronicle 2025). He established the Works Progress Administration (WPA), and the Civilian Conservation Corps (CCC) which led to the construction of 199 bridges, 47 dams, and the planting of more than 21 million trees (State of New Jersey 2025).

World War II erupted in Europe in 1939, and New Jersey responded by providing shipyards, service men and women, and factories (Chronicle 2025). These industries made New Jersey a target for sabotage. The coast of New Jersey was on high alert for enemy vessels targeting shipping, enacting general dim outs to prevent the unintentional silhouetting of Allied ships (Saretzky et al. 2010). Operation Drumbeater was executed by the Germans, stationing five submarines along the East Coast to sink large outgoing vessels (Chronicle 2025). There are approximately 22 known vessels that were torpedoed by U-boats off the New Jersey coast in 1942 (Petriello 2014). Wartime efforts created an economic boom in New Jersey with agricultural and industrial sectors ramping up and unemployment essentially vanishing. The post-World War II era experienced an expansion of New Jersey's suburbs, spurred by housing developments, federally backed mortgages, and the interstate highway system (State of New Jersey 2025).

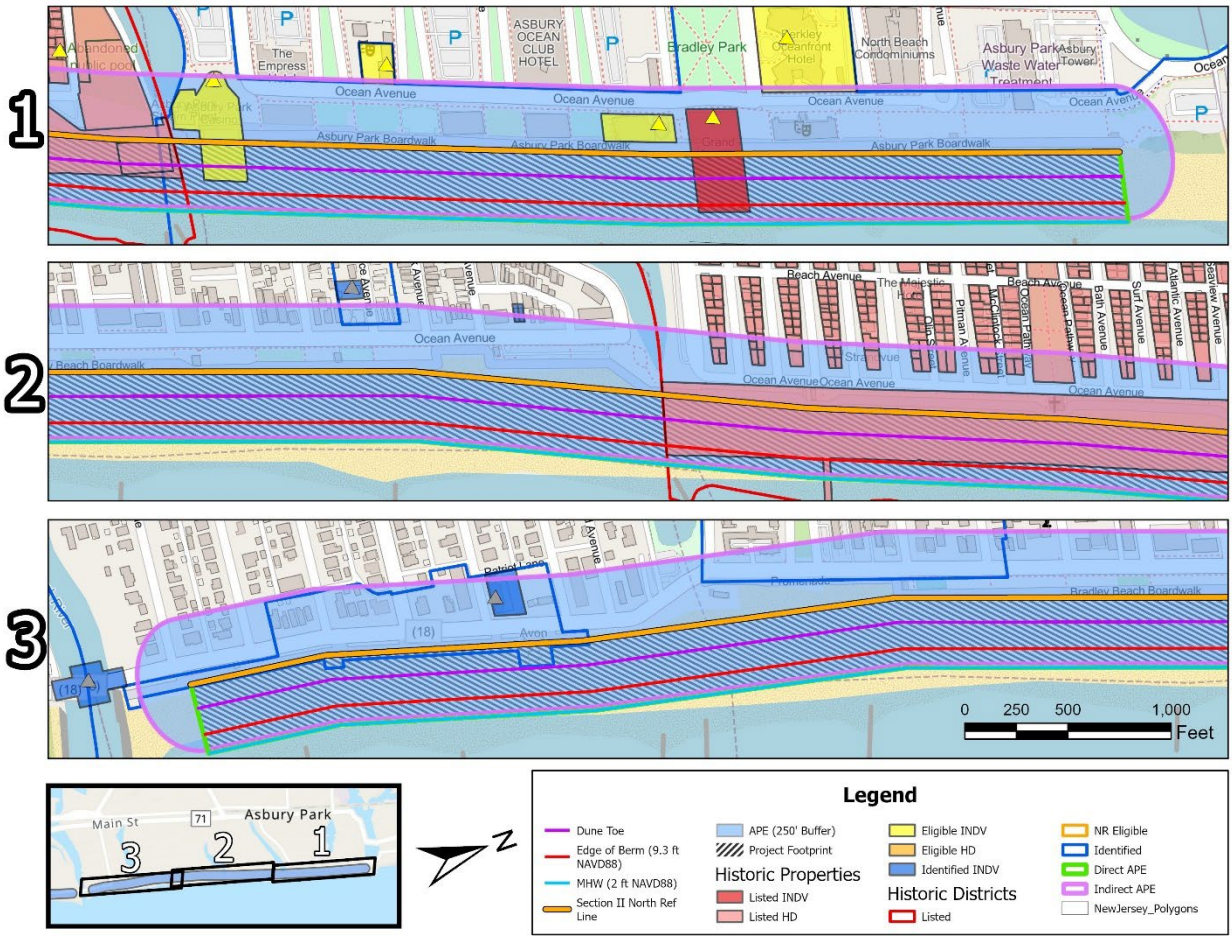
8 EXISTING CONDITIONS

The current conditions of the project area consist of storm damage reduction features and beach erosion control provided by a beach berm of varying widths. Elevations vary depending on the beach profile, but the project was designed to achieve a total elevation of +9.3 ft NAVD 88. The Sea Bright to Manasquan Project includes periodic nourishment of the restored beaches on a 6-year cycle for a period of 50 years from the start of initial construction. Many communities have constructed dunes on the landward edge of the project template. In Asbury Park, Ocean Grove, Bradley Beach Borough, and Sea Girt dunes of varying lengths are seen along the boardwalk, while in towns like Avon-by-the-Sea, Manasquan, and portions of Spring Lake and Belmar Borough no dunes were constructed.

Cultural resources studies for the Sea Bright to Manasquan Project began in 1985. This work included looking at onshore and offshore resources. Throughout the project, nearly twenty offshore surveys and investigations have been undertaken.

Historic Districts and Landmarks as identified by the NJSHPO are shown on their online cultural resource database LUCY. Properties labeled Historic must adhere to at least one of these criteria.

- Criterion A: that are associated with events that have made a significant contribution to the broad patterns of our history; or
- Criterion B: that are associated with the lives of persons significant in our past; or
- Criterion 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 distinguishable entity whose components may lack individual distinction; or
- Criterion D: that have yielded, or may be likely to yield, information important in prehistory or history.



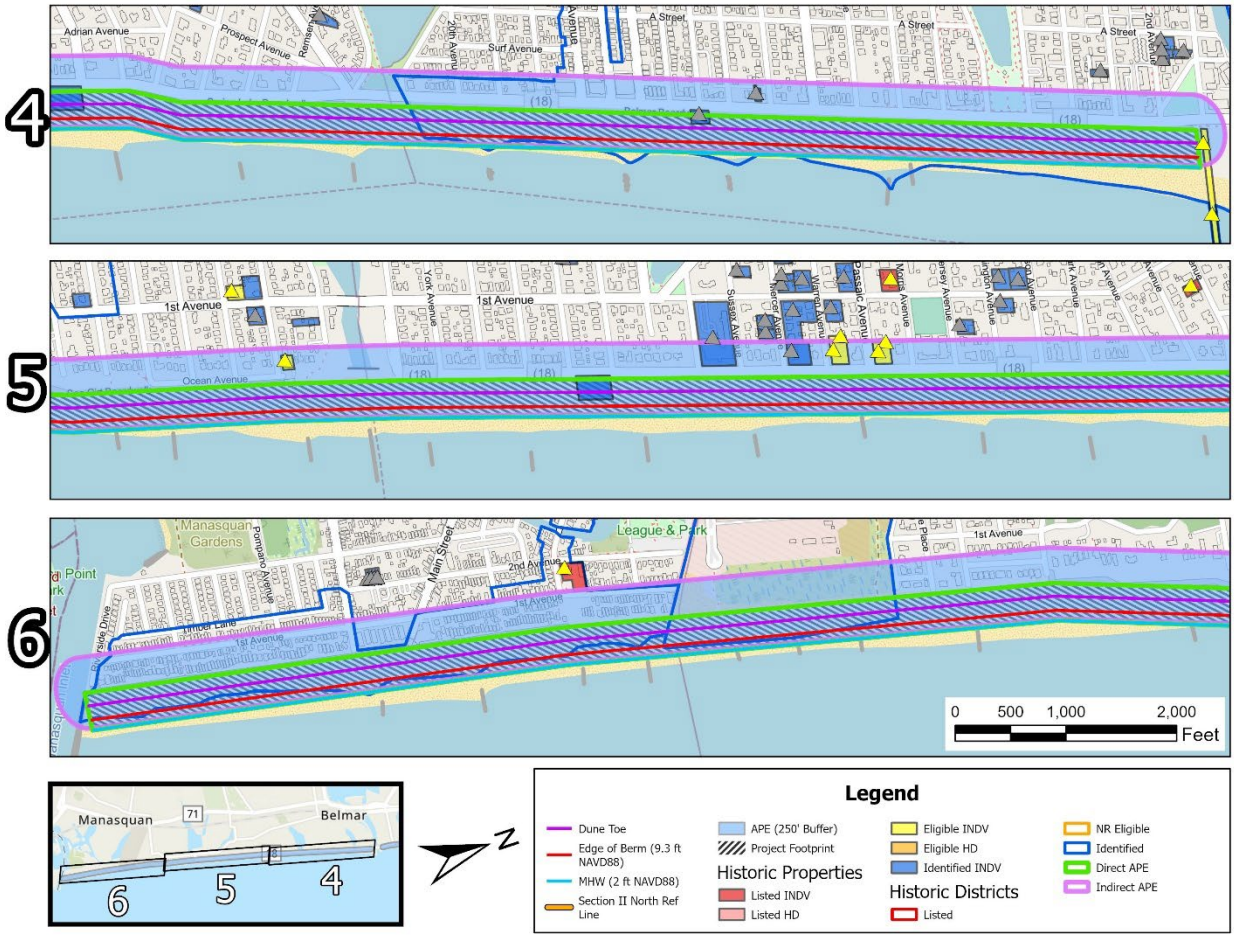


Figure 8: Maps Showing Historic Properties in the APE

8.1 SUNKEN RESOURCES

Research, remote sensing surveys and dive surveys within the near shore and placement areas resulted in the identification of four wreck sites that are historically significant and potentially affected by the project. These wrecks are the *Adonis/ Rusland*, *Chauncey Jerome Jr*, the *Amity* and the *Western World*. The *Amity* and the *Western World* are in the current project area.

> *"The wreck of the Black Ball merchantman Amity (the Manasquan Wreck) lies 330 yards east of the center of Manasquan's Pompano Beach and about 300 yards north of Manasquan Inlet's northern jetty. The wreck is known as "the Rickel Wreck" (after the Rickel hardware store chain) because of the wide assortment of hardware, barrels, and pots recovered from it. The Western World is in two sections east-southeast of the jetty off the base of Jersey Avenue in Spring Lake.".*
> *(Commonwealth 2024, pg. 26)*

The *Western World* was a transatlantic ship built in 1850 measuring 195 ft long, had a 40-foot beam and was 31 ft deep with three regular decks (Panamerican 2014, Commonwealth 2024). On September 6th, 1853, the *Western World* set sail from Liverpool bound for New York with valuable cargo and 600 passengers. On October 22nd while on approach to New York Harbor the ship struck bottom at Squan Beach off the coast of New Jersey (Panamerican 2014, Commonwealth 2024). It was discovered in the breaks 200 yards from the shore. Over the next 24 hours the passengers were transferred off the ship. However, by October 24th bad weather broke the ship in two and was considered a total wreck (Panamerican 2014, Commonwealth 2024).

The *Amity* built in 1815 in New York was one of the ships in the Black Ball Line (Panamerican 2014, Commonwealth 2024). The ship measures 106 ft 6 inches in length and 28 ft 6 inches in beam with a depth of 14 ft. The *Amity* left England on March 17th, 1824, and reached New Jersey on April 23rd. It struck bottom on Squan Beach. The passengers, and some cargo, were salvaged from the wreck (Panamerican 2014, Commonwealth 2024). However, by May 3rd the *Amity* was reported to be sunk in the sand.

The District conducted the Atlantic Coast of New Jersey Monitoring Program to determine whether and how burial by sand will impact the four shipwreck sites within the Beach Erosion Control Project Area. These wrecks mentioned above are the *Adonis/Rusland*, *Chauncy Jerome Jr*., *Amity* and *Western World*. The wrecks were monitored with multibeam, side scan sonar, diver inspection, and probes, and the data were compared over time in subsequent surveys. The program began in 2000 with a baseline survey and continued in 2013 after Hurricane Sandy and before a beach renourishment effort and was concluded in 2021. After thorough archaeological recordation it was concluded that the wrecks did not move from their in-situ locations, and the wrecks were still buried and protected under 3 to 5 ft of sand cover. The two wrecks near the APE, the *Amity* and *Western Worl*d are unlikely to be adversely affected by the project. However, both of these resources will be noted on all construction specifications with a 200-foot buffer and avoided from all construction activities.

In addition to the research on the submerged vessels, various remote sensing surveys have been conducted on the various potential borrow areas to be used for this project. Since 1986 the District has been carrying out investigations to identify submerged cultural resources within the APE for the project. The primary sand source for the Sea Bright to Manasquan Project has been the Sea Bright Borrow Area, but the Belmar borrow areas BA-2 through BA-7 were also utilized. In 2003 the District carried out a remote sensing survey of portions of Belmar 9. The analysis revealed no magnetic anomalies and no side scan sonar targets that met established criteria for recommendation of further work; however, a sub-bottom survey was not done for this area to identify submerged paleolandscapes and was recommended to be done to identify areas with potential for buried Native American sites or other cultural heritage if bottom disturbance is possible at the corresponding location or depth. In 2021 the District carried out a remote sensing survey for Borrow Areas Belmar 10 North, Belmar 10 South, Belmar 9 North and Belmar 9 South, Belmar 8 North and Belmar 8 South. The survey identified two potentially significant targets. Recommendation for these targets was avoidance with a 500ft buffer or a dive survey to further identify the targets. In 2025 the District carried out a remote sensing survey for Borrow Areas Belmar 10 North Expansion, Belmar 10 South Expansion, Belmar 9 North Expansion, Belmar 8 North Expansion, Belmar 5 Expansion, Belmar 11, and Belmar 12. The survey identified 10 potential paleo-landforms and 8 potentially significant targets. It is recommended to avoid these targets.

8.2 NRHP LISTED PROPERTIES AND HISTORIC DISTRICTS

In addition to these submerged cultural resources there are multiple NRHP eligible and listed properties within the APE.

8.2.1 THE OCEAN GROVE CAMP MEETING ASSOCIATION HISTORIC DISTRICT

The Ocean Grove Camp Meeting Association Historic District is located in in Neptune Township, Monmouth County, New Jersey. It was listed on the NRHP in 1976 based on the historic district's significance as an important and intact example if a 19th century planned community and its unique aggregation of historic architecture, including residencies, businesses, and religious structures in the late 19th and early 20th century seaside vernacular architecture styles (NRHP Nomination Form 76001170). It contains the largest collection of Victorian and early 20th century structures in America.

The Ocean Grove Camp Meeting Association Historic District is one of the few remaining camp meeting sites from the Holiness Movement after the Civil War (NRHP Nomination Form 76001170). In 1869 a small Methodist group came to the area looking for a pace to establish a religious community. Reverand William B. Osborn was inspired by other holiness camps in the South where Christian groups came together to camp and pray. From this first weeklong camp, a permanent town developed. This historic district encompasses 16 blocks along Ocean Ave, as well as the boardwalk and pier.

Figure 9: View of Ocean Grove Camp Meeting Association Historic District (NRHP Nomination Form 76001170)

Figure 10: Aerial View of Ocean Grove Camp Meeting Association Historic District (NRHP Nomination Form 76001170)

8.2.2 THE ASBURY PARK CONVENTION HALL

The Asbury Park Convention Hall was built in 1928 by architects Warren and Wetmore who designed many of Atlantic City's hotels (NJDEP Historic Site Inventory Form No. 1303-33). It has the characteristics of resort design which recalls temples, monuments and places of various times and places specifically Early Renaissance of Italy and Classical period of the French Renaissance (NJDEP Historic Site Inventory Form No. 1303-33). It utilized diamond- patterned brickwork and applied and freestanding terra cotta ornaments and statuettes (NJDEP Historic Site Inventory Form No. 1303-33). It includes a theater, exhibition hall, and an arcade lined with shops and amusements. There was much controversy due to the cost to build. From 1942 until 1946, the US Army and Navy used the Convention Hall for wartime training purposes (NJDEP Historic Site Inventory Form No. 1303-33). Today it is used for its intended purpose as a theater and convention center and has become a prominent building along the Jersey Shore.

Figure 11: Photo of The Asbury Park Convention Hall (NJDEP Historic Site Inventory Form No. 1303-33)

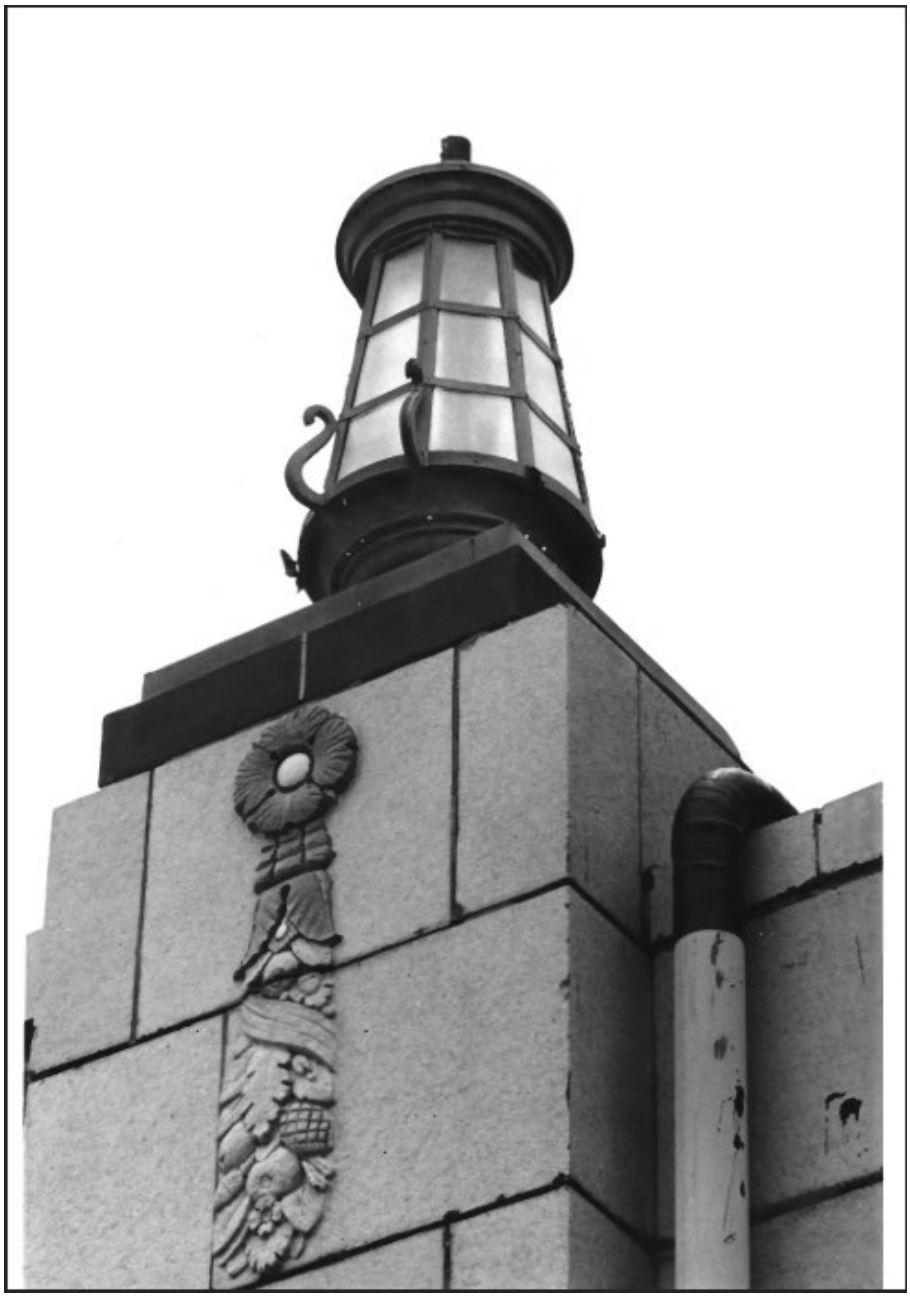


Figure 12: Photo showing architectural details on The Asbury Park Convention Hall facade (NJDEP Historic Site Inventory Form No. 1303-33)

8.3 NRHP ELIGIBLE PROPERTIES:

Two properties have been identified as eligible for the NRHP. Those properties are the Howard Johnson's Pavilion and the Asbury Park Casino and Carousel, in Asbury Park.

8.3.1 HOWARD JOHNSON PAVILION AND THE ASBURY CASINO AND CAROUSEL,

The Howard Johnson Pavilion and the Asbury Casino and Carousel are identified as eligible on the NRHP. Around the 19th century the belief developed that open space and parks would serve as cures for epidemics and would preserve the physical and mental health of city dwellers. James A. Bradly purchased the land for Asbury Park in 1871 (NJDEP Historic Site Inventory Form No. 1303-70). His plan for Asbury Park included green space, wide tree-lined streets, and recreational areas which kept it from being overdeveloped. The beach would serve as the "lungs of the city" and promote good health. The Asbury Park Casino was designed by Warren and Wetmore (NJDEP Historic Site Inventory Form No. 1303-70) who designed Grand Central Terminal in New York and The Ritz Carolton in Atlantic City (Figure 14). The Howard Johnson Pavilion was one of the few bathing pavilions built in the 50s and 60s (Figure 13). These pavilions have become historically significant as time goes on. These buildings reflected Asbury Parks status as a seaside resort and served as prime examples of entertainment and hotel industry that flourished on the beachfront in the 19th and 20th century.

Howard Johnson Pavilion, view east from Ocean Ave.
Photograph 2000

Figure 13: Photo of the Howard Johnson Pavillion (NJDEP Historic Site Inventory Form No. 1303-70)

Lake Ave., view east toward Palace Amusements and Asbury Park Casino and Carousel. 2000 photograph

Figure 14: Photo of the eastern view of the Asbury Park Casino and Carousel (NJDEP Historic Site Inventory Form No. 1303-70)

8.4 INDIRECT APE

A desktop survey was done of the NRHP listed and eligible properties located within 250 ft from the toe of dune.

Listed
- Life Saving Station #9
- Ocean Grove Camp Meeting Association Historic District and contributing resources

Eligible
- Berkley- Carteret Hotel
- The Stone Pony

8.4.1 LIFE SAVING STATION #9

Life Saving Station #9 or Squan Beach Life Saving Station in Manasquan was built in 1903 as one of the nine lifesaving station in Monmouth County. It is of the typical Duluth-style lifesaving station designed by

George R. Tolman in 1893 (NJDEP Historic Site Inventory Form No. 1327-12). This design was utilized by eleven other stations along the New Jersey Coast. The station is two stories high with a two-bay boat room, living quarters for the crew and for the keepers. It also has an observation tower four stories tall with a view of the ocean (NRHP Registration Form 07-0103-3SA135). The station remained active until 1936. The 131 miles of New Jersey coastline is historically of the most heavily traveled corridors for commerce since the beginning of European settlement. The coast presented several significant obstacles to marine vessels including shallow waters and changing sediment patterns. Due to these, hundreds of vessels have wrecked at Squan beach which is often referred to "the Graveyard of the Sea". In 1848 the Unites States Lifesaving Service was established, large in part to the U.S. Congressman William A. Newell of Monmouth County (NRHP Registration Form 07-0103-3SA135).

Figure 15: Photo of the front of Life Saving Sation #9 (NRHP Registration Form 07-0103-3SA135)

Figure 16: Photo of the side of Life Saving Sation #9 (NRHP Registration Form 07-0103-3SA135)

8.4.2 THE BERKLEY CARTERET HOTEL

This Berkley Carteret Hotel, built in 1925, reflects the Eclectic Style of resort architecture (NJDEP Historic Site Inventory Form No. 1303-51) (Figure 18). It was designed by architects Warren and Wetmore of New York which built Grand Central Terminal and The Ritz Carolton in Atlantic City (NJDEP Historic Site Inventory Form No. 1303-70). It has various classical and stylized sandstone ornamentations (NJDEP Historic Site Inventory Form No. 1303-51). It is a reflection of Asbury Park's status as a seaside resort and prime example of the hotel industry that flourished around the beachfront in the 20th century.

Figure 17: The Berkley Carteret Hotel (NJDEP Historic Site Inventory Form No. 1303-51)

8.4.3 THE STONE PONY

The Stone Pony was built between 1905 and 1930 (Figure 19). It is a widely known music venue due to the many New Jersey rock bands that have played there in their early years (NJDEP Historic Site Inventory Form No. 1303-56). It has been mentioned in the Rock and Roll Hall of Fame as earning is place in history as one of rock 'n' rolls greatest venues (NJDEP Historic Site Inventory Form No. 1303-56). The Stone Pony is also part of the hotel and entertainment industry that sprung up around the beachfront of Asbury Park.

Figure 18: The Stone Pony (NJDEP Historic Site Inventory Form No. 1303-56)

8.5 ARCHAEOLOGICAL RESOURCES

There is one eligible archaeological site within one mile of the APE. The Sherman/Mount/Stockton Farmstead site is eligible for the National Register of Historic places. It is a mid-eighteenth though mid-nineteenth century archaeological site with a historic ceramic assemblage, faunal remains and the remains of two demolished structures. No archaeological sites have been identified within the direct or indirect APE.

8.6 IDENTIFIED RESOURCES

Finally, these properties have been labeled by the NJSHPO as being identified, documented and evaluated through cultural resource survey efforts but no formal determination has been made. These properties are noted here.

Identified:

- Berwick Lodge
- Ocean Ave Bridge
- Belmar Fishing Club
- Joel Parker White House
- 901 Ocean Ave (A.S. Logan House)
- 700 Ocean Ave, The Essex and Sussex Hotel
- Seagirt Lighthouse
- Waterfront Resort Historic District

Table 1 List of Listed/Eligible/Identified Properties in the Direct and Indirect APE

Resources within the Direct APE					
Property Name	Town	NRHP Listed	NRHP Eligible	Identified	Historic District
Asbury Park Convention Hall	Asbury Park Asbury Park	X			Waterfront Resort Historic District (Identified)
Howard Johnson Pavilion	Asbury Park		X		Waterfront Resort Historic District (Identified)
Asbury Park Casino and Carousel	Asbury Park		X		Waterfront Resort Historic District (Identified)
Ocean Grove Camp Meeting Association Historic District	Ocean Grove	X			
Boardwalk And Pier	Ocean Grove	X			Ocean Grove Camp Meeting Association Historic District
Resources within the Direct APE					
Property Name	Town	NRHP Listed	NRHP Eligible	Identified	Historic District
Berkley-Carteret Hotel	Asbury Park		X		Waterfront Resort Historic District
The Stone Pony	Asbury Park		X		Waterfront Resort Historic District
4 Atlantic Ave	Ocean Grove	X			Ocean Grove Camp Meeting Association Historic District
14 Ocean Ave	Ocean Grove	X			Ocean Grove Camp Meeting Association Historic District
4 Boardwalk	Ocean Grove	X			Ocean Grove Camp Meeting Association Historic District
12 Ocean Ave	Ocean Grove	X			Ocean Grove Camp Meeting Association Historic District
28 Ocean Ave	Ocean Grove	X			Ocean Grove Camp Meeting Association Historic District
21 Ocean Ave	Ocean Grove	X			Ocean Grove Camp Meeting Association Historic District
15 Ocean Ave	Ocean Grove	X			Ocean Grove Camp Meeting Association Historic District
1 Ocean Ave	Ocean Grove	X			Ocean Grove Camp Meeting Association Historic District
1 Surf Ave	Ocean Grove	X			Ocean Grove Camp Meeting Association Historic District
13 Ocean Ave	Ocean Grove	X			Ocean Grove Camp Meeting Association Historic District
23 Ocean Ave	Ocean Grove	X			Ocean Grove Camp Meeting Association Historic District
27 Ocean Ave	Ocean Grove	X			Ocean Grove Camp Meeting Association Historic District
5 Ocean Ave	Ocean Grove	X			Ocean Grove Camp Meeting Association Historic District
1920s Building	Ocean Grove	X			Ocean Grove Camp Meeting Association Historic District
4 Ocean Ave	Ocean Grove	X			Ocean Grove Camp Meeting Association Historic District
19 Ocean Ave	Ocean Grove	X			Ocean Grove Camp Meeting Association Historic District
16 Ocean Ave	Ocean Grove	X			Ocean Grove Camp Meeting Association Historic District
18 Ocean Ave	Ocean Grove	X			Ocean Grove Camp Meeting Association Historic District
6 Ocean Ave	Ocean Grove	X			Ocean Grove Camp Meeting Association Historic District
9 Ocean Avenue	Ocean Grove	X			Ocean Grove Camp Meeting Association Historic District

3 Main Ave	Ocean Grove	X			Ocean Grove Camp Meeting Association Historic District
26 Ocean Ave	Ocean Grove	X			Ocean Grove Camp Meeting Association Historic District
17 Ocean Ave	Ocean Grove	X			Ocean Grove Camp Meeting Association Historic District
2 Heck Ave	Ocean Grove	X			Ocean Grove Camp Meeting Association Historic District
22 Ocean Ave	Ocean Grove	X			Ocean Grove Camp Meeting Association Historic District
2 Surf Ave	Ocean Grove	X			Ocean Grove Camp Meeting Association Historic District
North End Hotel	Ocean Grove	X			Ocean Grove Camp Meeting Association Historic District
25 Ocean Ave	Ocean Grove	X			Ocean Grove Camp Meeting Association Historic District
1 Ocean Pathway	Ocean Grove	X			Ocean Grove Camp Meeting Association Historic District
10 Ocean Ave	Ocean Grove	X			Ocean Grove Camp Meeting Association Historic District
2 Ocean Pathway	Ocean Grove	X			Ocean Grove Camp Meeting Association Historic District
1 Embury Ave	Ocean Grove	X			Ocean Grove Camp Meeting Association Historic District
Ocean Pathway	Ocean Grove	X			Ocean Grove Camp Meeting Association Historic District
7 Ocean Ave	Ocean Grove	X			Ocean Grove Camp Meeting Association Historic District
8 Ocean Ave	Ocean Grove	X			Ocean Grove Camp Meeting Association Historic District
Berwick Lodge	Avon-By-The-Sea			X	
Ocean Ave Bridge	Avon-By-The-Sea			X	
Belmar Fishing Club	Belmar			X	
Joel Parker White House	Belmar			X	
13 Street Pavilion	Belmar			X	
2 Warren Ave	Spring Lake			X	
A.S. Logan House	Spring Lake			X	
The Essex and Sussex Hotel	Spring Lake			X	
Sea Girt Lighthouse	Sea Girt			X	
Life Saving Station #9	Manasquan	X			

9 ADVERSE AND BENEFICIAL EFFECTS

9.1 NO ACTION ALTERNATIVE

9.1.1 ADVERSE EFFECTS

Under this alternative, no measures would be implemented to address future storm risk, which are anticipated to worsen due to relative sea level rise. As a result, this alternative would leave existing aesthetic, visual, historical, and cultural resources vulnerable to damage. Historic Properties within the study area face the risk of deterioration or destruction from coastal storms.

Under the current PA future renourishment cycles would continue to be managed as laid out. This includes the survey of new borrow areas to identify any potential buried Paleolithic landforms, educating UXO specialists on potential artifacts from the Sea Bright Borrow Area, and to identifying any nearshore targets.

Cultural resources along the coast of New Jersey are increasingly threatened by environmental changes. The impact of recent extreme weather events underscores this vulnerability. Hurricane Sandy in 2012 significantly affected the New Jersey Coast and caused widespread damage across 26 states. Historic buildings, landmarks, and archaeological sites across the Atlantic Coast face growing threats from flooding, tidal erosion, and intensified storm activity as climate-related impacts escalate.

9.1.2 BENEFICIAL EFFECTS

No beneficial effects of no action are anticipated, as the area would continue to be vulnerable to coastal flood risk and damage.

9.2 ALTERNATIVES 3E, 3I, AND 3J

The three action alternatives vary slightly in width and height, Alternative 3E has a longer berm that projects further into the water while alternative 3I has a dune that is 2 feet taller. For the purposes of this analysis these variations are adequately captured in the direct and indirect APE delineated for the project, therefore the effects determination is the same for each alternative.

9.2.1 DIRECT EFFECTS

There is one SR/NRHP-listed Historic District within the direct APE, the Ocean Grove Camp Meeting Association Historic District (NRIS ID: 76001170). The contributing homes, meeting house, ocean pathway and pilgrim pathway are all located outside of the direct APE. The individual contributing properties to the historic district that are within the direct APE are the Boardwalk and Pier. Both were destroyed and reconstructed following Hurricane Sandy so the original materials have been replaced.

Additional properties located within the direct APE include. The Asbury Park Convention Hall (SR/NRHP listed, 1979, NRIS ID: 79001512), the Howard Johnson Pavilion (Eligible, SHPO Opinion 1/9/2003), and the Asbury Park Casino and Carousel (Eligible, SHPO Opinion 1/11/1990). There is also one potential historic district identified that may require additional review and an NRHP eligibility assessment, the Waterfront Resort Historic District, which may extend the entire length of the Asbury Park beachfront.

The Proposed Activity will involve the construction of a dune adjacent to the properties within the direct APE, in the case of the Asbury Park Convention Hall and the Ocean Grove Boardwalk and Pier it may require modifications to the properties to complete the line of protection. Based on this assessment the

Project has the potential to adversely affect the Asbury Park Convention Hall, Ocean Grove Camp Association Historic District, Howard Johnson Pavilion and Asbury Park Casino and Carousel. The Proposed Activity is not expected to cause adverse effects to the Amity and Western World shipwrecks as long as the District continues to follow the stipulations of the Project PA to avoid the area during construction and renourishment activities.

A visual assessment was performed which considered the indirect effects of the dune on properties within 250 feet of the Proposed Activity. The Proposed Activity is not expected to alter the setting in a significant way for the historic properties within the indirect APE. The oceanside viewshed for each property and district has already been altered significantly over time due to the destruction caused by previous storms, the construction of berms and dunes of varying heights, and other modifications to the shoreline that have occurred over the years. In most reaches a dune is already present and would be replaced with a more substantial dune. In other areas, such as Spring Lake where there is no dune, the addition of a dune seaward of the Boardwalk is not expected to alter the setting significantly as it would be compatible with the beach community setting. A dune will also provide beneficial effects to the many inland historic properties in the communities through the reduction of storm related impacts such as erosion and flood related damage to the historic fabric of the structures.

While there is potential for precontact and historic archaeological resources to exist within the broader coastal area, no archaeological sites have been identified within the direct APE for the proposed activity, and the potential for archaeological resources to exist within the direct APE is considered low given the constant alteration of the shoreline both from erosion and storm activity as well as human action. Any intact archaeological sites that may be preserved within the direct APE would be expected to lie at depths well below the limits of shallow disturbance that can be anticipated for this project. Sand placement activities for the berm and dune construction are not expected to involve ground disturbance and would be expected to further protect and bury any archaeological sites within the APE.

The District also considered the potential for effects to submerged historic properties located within sand borrow areas. The Proposed Activity is expected to utilize the same sand sources that are utilized for the existing Sandy Hook to Barnegat Inlet Beach Erosion Control Project. Under the current Project PA any sand sources must be subject to remote sensing cultural resources surveys and treated in accordance with Stipulations I. The PA amendment being prepared for this GRR will ensure that any sand sources utilized for the construction of the Proposed Activity will follow the same Stipulations therefore there will be no effect to historic properties.

9.2.2 INDIRECT EFFECTS

The District also evaluated the potential for indirect effects to historic properties. The indirect APE has been defined as extending 250 ft landward from the direct APE and in the nearshore of the sand placement area. The indirect APE was formulated to capture any properties that may be affected by changes to setting, viewshed, or vibration during construction.

There are three listed or eligible Historic Properties within 250 ft of the Proposed Activity. All properties are located along the east side of Ocean Blvd, so they are not expected to be affected by construction. The properties are The Stone Pony (Eligible, SHPO Opinion 3/27/2024), Berkley-Carteret Hotel (Eligible, SHPO Opinion 10/21/1981), and Life Saving Station #9.

The Proposed Activity is not expected to alter the setting in a significant way for the historic properties within the indirect APE. The oceanside viewshed for each property and district has already been altered significantly over time due to storms and other modifications to the shoreline that have occurred over the years. In most reaches a dune is already present and would only be replaced with a taller dune. In other

areas, such as Spring Lake where there is a berm only, the addition of a dune seaward of the Boardwalk is not expected to be imposing as it would be compatible with the beach community setting. A dune will also provide beneficial effects to the many inland historic properties in the communities through the reduction of storm related impacts such as erosion and flood related damage to the historic fabric of the structures.

In addition to the properties listed above there are also two submerged resources within the indirect APE, the *Amity* and the *Western World,* which are located approximately 550 ft offshore in (Manasquan and Spring Lake). The Proposed Activity involves placement of sand in the vicinity of the shipwrecks and may require placement of dredging and pumping equipment in the vicinity temporarily. No adverse effects are anticipated from the placement of sand on and around the wrecks or from the pumping activities provided that the project continues to follow the stipulations in the PA to employ a 200-foot buffer for any near shore and offshore work.

There are no known archaeological sites within the indirect APE for this proposed activity. As there are no ground disturbing activities proposed within the indirect APE the project is not expected to adversely affect archaeological sites archaeological sites located within the indirect APE.

9.2.2.1 Staging Area

The staging area has not yet been identified for this project but will be assessed for cultural resources and historic properties.

9.2.2.2 Operation

Once built, the operation of the Proposed Action would have no impact on any historic properties of scared cultural or traditional resources.

9.2.3 Beneficial Effects

The beneficial effects to the Historic Properties along the coastline would help with the reduction of storm related impacts on the structures and preserve these historic properties.

10 CONCLUSIONS AND RECOMMENDATIONS

The District has assessed the potential for the proposed activity to affect historic properties. The assessment identified one NRHP-listed Historic District, one NRHP-listed property and two NRHP-eligible properties within the direct APE. In addition one potential historic district in Asbury Park was identified for further analysis to complete the identification of historic properties. The District has made the determination the project has the potential to adversely affect these properties, however additional design detail is needed to fully characterize the affect.

To address adverse effects to the historic properties the District is proposing additional analysis and consultation with the consulting parties as more detailed designs are developed in the Preconstruction Engineering and Design phase of the project to ensure that any adverse effects are avoided, minimized or mitigated. To guide additional analysis, consultation, and consideration of avoidance, minimization and mitigation measures the District has prepared an amendment to the Project PA that outlines the steps it will take to resolve adverse effects (Enclosure 3)**.** This amendment identifies the additional properties that may be affected by the Proposed Activity and a process by which the District will continue to consult with your office and other consulting parties as appropriate as designs are further developed to consider design modifications, treatments, and mitigation to minimize and mitigate for effects.

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12 ENCLOSURE 1: PROGRAMMATIC AGREEMENT