Draft Integrated Interim Response Feasibility Report and Environmental Assessment for Actionable Elements

NEW YORK-NEW JERSEY HARBOR AND TRIBUTARIES COASTAL STORM RISK MANAGEMENT FEASIBILITY STUDY

APPENDIX A-1C OAKWOOD BEACH CULTURAL RESOURCES ASSESSMENT

July 2025

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E XECUTIVE SUMMARY

This discussion compliments the main report and the main report Environmental Assessment Appendix of which this document is a Sub-Appendix to, comprising of an Integrated Interim Response Feasibility Report (FR) and Environmental Assessment (EA). The details included herein are presented as a summary in the main text, as a more condensed version than what has been detailed here, to simplify the discussion of the main text and provide additional detail where needed specific to each particular Actionable Element (AE) EA Appendix. This Sub-Appendix focuses primarily on the Existing Conditions of the AE site, and the Cultural Resource Effects (both adverse and beneficial) of the AE Alternative, including the No Action Alternative.

The Purpose and Need for the action, including the Interim Response Action, and the Alternative details for each Actionable Element site are discussed in more depth in the Oakwood Beach Environmental Assessment A-1, of which this document is a sub-appendix to. The affected environment and environmental consequences and benefits detailed here, are presented in the main text in summary format.

This Sub-Appendix is organized by Cultural Resource Categories, originally identified in the Draft Integrated FR/Tier 1 (Programmatic) EIS. Each Resource Category, if applicable to this AE, includes an existing conditions summary for resources of the Natural Environment and Physical Environment. Each Cultural Resource Category also includes an assessment of potential direct and reasonably foreseeable indirect adverse and beneficial effects of the Alternative. A cumulative effects analyses is included in the main text. Any Cultural Resource Category not applicable to this AE is stated as such in this document and does not include any score or associated adverse or beneficial effects analyses, because the resource is not present, or potentially present, in a manner that would incur any kind of effect directly, indirectly, or cumulatively.

1 FEDERAL AND STATE CULTURAL RESOURCE COMPLIANCE

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). 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 impact of an undertaking on historic properties that are within the proposed project's area of potential effects (APE). The NHPA defines the APE defined 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 APE to the maximum extent possible.

For the NYNJHAT AE study, the APE for cultural resources extends beyond the study area to encompass the following: 1) areas where structural measures are implemented (to include construction, demolition, vibration, and auditory effects); 2) where non-structural measures are applied to historic properties, and 3) where structural or non-structural measures has the potential to affect the viewshed 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 York State Office of Parks, Recreation and Historic Preservation (OPRHP) Section 14.09 of the New York State Historic Preservation Act and 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)].

2 METHODOLOGY

The focus of this Draft EA study is to present a preliminary assessment of Direct Areas of Potential Effects (APEs) and the Indirect Areas of Potential Effects/ Visual Impact Areas for the project's alternatives. The APE includes 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 is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking", 36 CFR 800.16(d). For the NYNJHAT Project, the District shall consider potential direct, indirect, and cumulative effects to historic properties and all aspects of integrity, including their associated settings as applicable.

This study uses the broad term 'cultural resources' to apply to places, archaeological sites, buildings, structures, objects, cultural practices, or collections of these physical and nonphysical manifestations that have significance to humans. Definitions of cultural resources and other terms are summarized in a glossary.

2.1 DIRECT AREA OF POTENTIAL EFFECTS

This Draft EA preliminarily identifies known cultural resources that could be directly affected by the AEs. The activities associated with the proposed undertaking include all new construction, improvements, and maintenance activities related to the proposed AEs. For this study, the direct APE for cultural resources is defined as the area within 100 m (328 ft) of each proposed project component and any temporary construction actions (e.g., access roads, staging areas, etc.). Temporary construction actions are typically developed relatively late in the planning process, and have not been designed as of this writing. The 100- meter APE around planned measures used herein to define the direct APE will circumscribe most, if not all, future planned temporary construction actions. 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.

In general, an undertaking has an effect on an historic property when the undertaking may alter characteristics of the property. 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:

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

(ii) Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation and provision of handicapped access, that is not consistent with the Secretary's Standards for the Treatment of Historic Properties (36 CFR 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;

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

(v) 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

(vi) 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].

2.2 INDIRECT AREA OF POTENTIAL EFFECTS/ VISUAL IMPACT AREA

This study provides preliminary identification of known cultural resources that could be visually affected by the AEs. Visual analysis is part of the NEPA and Section 106 analyses and includes a broad look at the potential impacts to historic properties. By definition, a visual effect occurs whenever a proposed undertaking will be visible from an historic property. The mere existence of a visual effect does not automatically imply that the effect is adverse. An *adverse* visual effect occurs only 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.

In keeping with USACE guidance, the APE for visual impacts on historic properties for the AEs cultural resource study is defined as those areas within one mile of proposed features which are within the potential viewshed (based on topography) of each Alternative. The New York State Department of Environmental Conservation (NYSDEC) defines *Visual Impact* as:

> *…when the mitigating effects of perspective do not reduce the visibility of an object to insignificant levels. Beauty plays no role in this concept. A visual impact may also be considered in the context of contrast. For instance, all other things being equal, a blue object seen against an orange background has greater visual impact than a blue object seen against the same colored blue background. Again, beauty plays no role in this concept [NYSDEC 2000:10-11].*

The analysis takes into consideration the resource's geographical distance and the effect of topography on whether the Project is visible from historic resources.

2.3 RESEARCH METHODS

This study is intended to provide a baseline of cultural and historic information that will inform preliminary planning decisions regarding cultural resources.

In addition to guidance from the USACE, the technical approach for the cultural resources survey was conducted in accordance with the:

(1) New York Archeological Council's (NYAC) *Standards for Cultural Resources Investigations and the Curation of Archeological Collections in New York State*;

(2) New York State Office of Parks, Recreation, and Historic Preservation's (2005) *State Historic Preservation Office Phase I Archaeological Report Format Requirements*; and

(3) Secretary of the Interior's Standards and Guidelines for Archaeological Documentation (48FR44734-37)

Background research for the project included a review of existing cultural resource reports, management plans, archaeological site files, historic maps, and nominations to the National Register of Historic Places (NRHP). All work was performed by and under the direct supervision of individuals meeting the Secretary of the Interior's professional qualifications standards (36 CFR 61). The background research and an assessment of the archeological sensitivity and State and National Registers of Historic Places sensitivity of the study area were conducted in during the period of January through June 2025. Table 1 outlines the sources of background cultural resources Information.

The New York State Office of Parks, Recreation and Historic Preservation (OPRHP) provided cultural resources data for the visual impact area in New York State. The results of the indirect area of potential effects will only include the proposed project locations in New York State. Potential visual impacts to architectural resources in New York, topographic viewshed only, are presented for the AE.

Geographically, New York is a city with 5 boroughs, 59 community districts and hundreds of neighborhoods. The locations and names of neighborhoods and communities in HATS regions in New York City were identified by reviewing the *New York City A City of Neighborhoods* map (City of New York Department of Planning 2014).

3 CULTURAL BACKGROUND OF OAKWOOD BEACH, STATEN ISLAND: FROM NATIVE AMERICAN INHABITANTS TO THE PRESENT

The historic cultural background narrative for the AE includes broad trends in sub-regional developments for historic time periods, specific to each of the three AEs. The historic background identifies information on specific topics of New York history and is presented below.

A 2014 report for Hudson-Raritan Estuary Comprehensive Plan (Harris et al. 2014) compiled cultural resources background information to serve as an appendix to the Feasibility Study and Programmatic Environmental Impact Statement for the Hudson-Raritan Estuary Ecosystem Restoration Program. The report provided a detailed cultural/historical overview for eight regions in northeastern New Jersey, New York City, and the lower Hudson River Valley. These areas are very similar geographically to planning regions presented in this study. The present study includes the Mid-Hudson and Upper Hudson Regions, which were not included in 2014, and combines the Arthur Kill and Lower Bay regions, which were separate in 2014. Please refer to that study for additional detailed information on the regions.

The 2022 Tier I Environmental Impact Statement and Cultural Resource Assessment: New York-New Jersey Harbor and Tributaries Study completed an initial investigation of the comprehensive study area to provide information about cultural resources that will contribute to the USACE's decision-making process in selecting a build alternative for the New York-New Jersey Harbor and Tributaries flood risk management system. To do so, the investigation included two parts: an historical review of the study area to provide contextual information for the cultural resources it contains; and preliminary assessments of the potential direct and indirect (i.e., visual) effects of each of the build alternatives on cultural resources. The historic context covered the USACE-defined study area, while the effects assessments are limited to areas near the planned build alternatives.

Each planning region's historic background was presented as its own project area and covered the period between initial European contact with Native American inhabitants of New Jersey and New York to the present time. There was some overlap in the historic contexts of the planning regions due to the proximity of the regions. This cultural background included broad trends in regional developments for historic time periods, including early explorers (1500-1625); colonial settlement (1625-1775), developments and changes in industrialization, urbanization, and agricultural activities; immigration and economic and urban expansion; suburban development; metropolitan development; and modern activities. For additional background beyond what is described below, see the Tier I Cultural Resource Appendix A8 of the Tier I HATS EIS.

3.1 INTRODUCTION

Staten Island offers a compelling lens through which to view New York City's broader patterns of demographic change, land use, and development. From its deep Native American roots through Dutch and British colonization, to its transformation into a patchwork of rural villages, industrial hubs, and suburban neighborhoods, Staten Island has been shaped by centuries of migration, transportation expansion, and environmental modification. The borough's evolution from Lenape homeland to agricultural outpost, to its current role as both a residential enclave and part of the city's ecological network, reflects its layered and often contested history. Understanding this trajectory is essential for appreciating the cultural and historical complexity of Staten Island today.

3.2 EARLY HISTORY AND NATIVE AMERICAN INHABITANTS (PRE-1625)

3.2.1 Precontact Period Overview

Human presence in the northeastern United States dates to approximately 12,000 to 13,000 years before present (B.P.). Archaeologists typically divide this prehistoric timeline into three major cultural periods: the Paleo-Indian (ca. 12,500–8,000 B.P.), Archaic (ca. 8,000–3,000 B.P.), and Woodland (ca. 3,000 B.P.–A.D. 1600) (Ritchie 1980; Kraft

1986). This framework provides context for understanding prehistoric settlement and land use in the Staten Island, New York–New Jersey metropolitan region.

3.2.2 Paleo-Indian Period (ca. 12,500–8,000 B.P.)

The earliest known human occupation of Staten Island occurred during the Paleo-Indian Period, following the retreat of the Wisconsin Glacier approximately 14,000 years ago. At that time, the region was characterized by a cold, dry tundra environment and lower sea levels, placing Staten Island further inland than it is today (Boesch 1994). Paleo-Indian groups were highly mobile, relying on hunting large game such as mammoth, caribou, and moose-elk, and gathering plant resources (Kraft 1979a). Typical artifact assemblages include fluted Clovis-type projectile points, bifacial tools, scrapers, gravers, and burins. Preferred site locations included elevated, well-drained areas near freshwater sources (Ritchie 1980; Boesch 1994). Paleo-Indian materials have been documented on Staten Island at sites such as Port Mobil, Smoking Point, the Cutting site, Kreischerville, and Great Kills Park.

3.2.3 Archaic Period (ca. 8,000–3,000 B.P.)

The Archaic Period marks a shift toward broader subsistence strategies focused on smaller game and diverse plant resources, coinciding with the development of a deciduous forest ecosystem. Settlement patterns evolved into semi-permanent occupations along waterways and upland ridges (Boesch 1994). The Archaic Period is subdivided into Early, Middle, Late, and Terminal phases:

The Early Archaic expressions are characterized by a warming climate, the emergence of deciduous-coniferous forests, and a shift to more generalized toolkits including bifurcated projectile points and plant processing tools. Sites from this period include Old Place, Charleston Beach, Wards Point, and Richmond Hill (Ritchie and Funk 1971; Boesch 1994).

Marked by continued climatic warming and increased population, the Middle Archaic toolkits included grinding stones, mortars, and pestles, with growing emphasis on aquatic resources such as fish and mollusks (Snow 1980). Known sites include Old Place and Wards Point (Boesch 1994).

Late Archaic Native populations exploited seasonal resources across upland and lowland settings. The period saw increased use of hardwood forests and the development of new projectile point types (e.g., Lamoka, Brewerton, Poplar Island). Sites include Pottery Farm, Bowman's Brook, Smoking Point, Goodrich, Sandy Brook, Wort Farm, and Arlington Avenue (Boesch 1994).

The Terminal Archaic is defined by broad-bladed projectile point types (e.g., Susquehanna, Perkiomen, Orient Fishtail) and the use of steatite vessels. Representative sites include Old Place, Wards Point, Pottery Farm, and Travis (Boesch 1994).

3.2.4 Woodland Period (ca. 3,000 B.P.–A.D. 1600)

The Woodland Period is divided into Early, Middle, and Late subperiods based on material culture and settlement practices. Continuity in Early Woodland lithic traditions accompanied the introduction of clay pottery (e.g., Vinette I). The Meadowood projectile point is a marker of this period. Early Woodland sites are present throughout Staten Island (Ritchie 1980).

The Middle Woodland is characterized by the widespread use of cord-marked ceramics and projectile points such as Fox Creek and Rossville types (Lenik 1989). Increasingly sedentary lifeways are inferred from the presence of large habitation sites and storage pits.

Marked by the introduction of Levanna and Madison triangular projectile points, collared ceramics, and horticulture, including the cultivation of maize, the Late Woodland saw permanent villages, seasonal movements, and increased use of coastal and upland resources. Diagnostic tools and pottery indicate long-distance trade or interaction networks. Woodland sites on Staten Island include those near stream drainages and coastal margins. A notable Middle Woodland site was excavated in 2009–2010 on the NYC DEP's Bluebelt property near Lemon Creek (HPI 2009a, 2009b, 2010a, 2010b).

Numerous prehistoric sites have been documented along Staten Island's south shore. Coordination with the New York State Museum Anthropology Survey indicates that there are currently three recorded archaeological sites in the project vicinity: NYSM Site #4617, #4628, and #8481. Site 4617 reportedly contains traces of a shell midden, while Site 4628 yielded evidence of occupation. Site 8481, reported by Alanson Skinner in the early twentieth century, was identified as a prehistoric camp located southwest of the present Oakwood Beach Water Pollution Control Plant. The Oakwood, or Great Kills, Site (Site 8481) was situated just northeast of a former pond and marsh that would have offered a valuable source of freshwater (Greenhouse Consultants 1990). The New York State Museum has previously assessed the project area as possessing high archaeological sensitivity based on terrain similarities to other site-rich areas nearby and favorable physiographic characteristics.

3.3 HISTORIC CONTACT PERIOD (CA. A.D. 1500–1700)

The Contact Period on Staten Island began in the early 1500s and witnessed the continuation of Late Woodland cultural patterns among the coastal Algonquian-speaking groups. By the early 17th century, Dutch colonists had established frequent contact with Indigenous communities. These interactions ranged from peaceful trade to violent conflict (Brasser 1978; Flick 1933). One of the groups present on Staten Island during this time were the Raritans, part of the broader Lenape (Delaware) cultural group (Ruttenber 1872). Pressures from European colonization, competition in the fur trade, and intertribal conflicts led to the inland migration of many Lenape groups. By the 19th century, displaced communities had settled across the Midwest and into Canada (Weslager 1972).

Archaeological evidence of Contact Period occupation on Staten Island includes sites at Wards Point, Old Place, Corsons Brook, Travis, New Springfield, and the PSS6R site in Woodrow (Boesch 1994; HPI 1996). These sites provide material evidence of the cultural transformations that took place during the early years of European colonization.

3.4 CONTACT PERIOD AND EARLY COLONIAL SETTLEMENT (1609–1683)

The Dutch were the first Europeans to attempt settlement on Staten Island, beginning in 1639 under Captain David Pietersen De Vries of the Dutch West India Company. However, conflict with the island's Indigenous inhabitants delayed successful colonization until 1660, when a peace arrangement allowed for the establishment of a permanent settlement at the eastern shore. This first enduring community, known as Old Town (present-day South Beach), was chosen for its agricultural potential, nearby fishing grounds via New Creek, and timber resources from adjacent forests (Steinmeyer 1987:20).

In 1666, following the English takeover of New Amsterdam, Staten Island became part of the newly formed Colony of New York. In 1670, Governor Francis Lovelace arranged a land purchase from the Lenape, although differing concepts of land use and ownership likely undermined mutual understanding of the agreement (LPC 2011:2). By the early 1670s, most of the Native inhabitants had departed or been displaced. The English regained permanent control of Staten Island in 1674 following the Treaty of Westminster (Steinmeyer 1987:24).

In 1677, Christopher Billopp, a British naval officer, received a land grant of 932 acres at Staten Island's southern tip. He constructed a residence that later became known as the Conference House, now a city landmark and listed on the National Register of Historic Places. By 1687, the Manor of Bentley, as the estate was named, expanded to 1,600

acres and encompassed present-day Tottenville, Richmond Valley, Pleasant Plains, and part of Prince's Bay. Billopp was a participant in the transatlantic slave trade and a slaveholder (Hunter Research 2020).

The King's Highway, now known as Amboy Road, was laid out ca. 1695 and passed through Billopp's property, linking the area to ferry access points in the island's northeast (Leng and Davis 1930; McMillen 1968). In 1683, the entire island was designated Richmond County, named after the Duke of Richmond in Yorkshire, England.

3.5 BRITISH RULE AND THE AMERICAN REVOLUTION (1685–1785)

During the colonial period, Staten Island maintained a rural character, with small Dutch farms or *bouweries* producing livestock, grain, fruits, and vegetables (Leng and Davis 1930:610). Fishing and farming remained the dominant economic activities into the 19th century.

During the Revolutionary War, Staten Island was occupied by British forces and served as a staging ground for military campaigns. The western shoreline was fortified with earthworks, and the Billopp family remained prominent Loyalists (Leng and Davis1930:173). The Conference House hosted a notable but unsuccessful peace negotiation on September 11, 1776, between American delegates Benjamin Franklin, John Adams, and Edward Rutledge and British representatives Admiral Lord Richard Howe and Henry Strachey (Leng and Davis 1930; Peace Conference at Staten Island, 2025).

By 1797, settlements and infrastructure such as mills were present along Great Kills Harbor. A map from that year depicts properties attributed to the Corleyou and Lake families (Figure 1). Lake later operated a grist mill on the harbor's northwest side (A New and Correct Map of the County of Richmond, 1797).

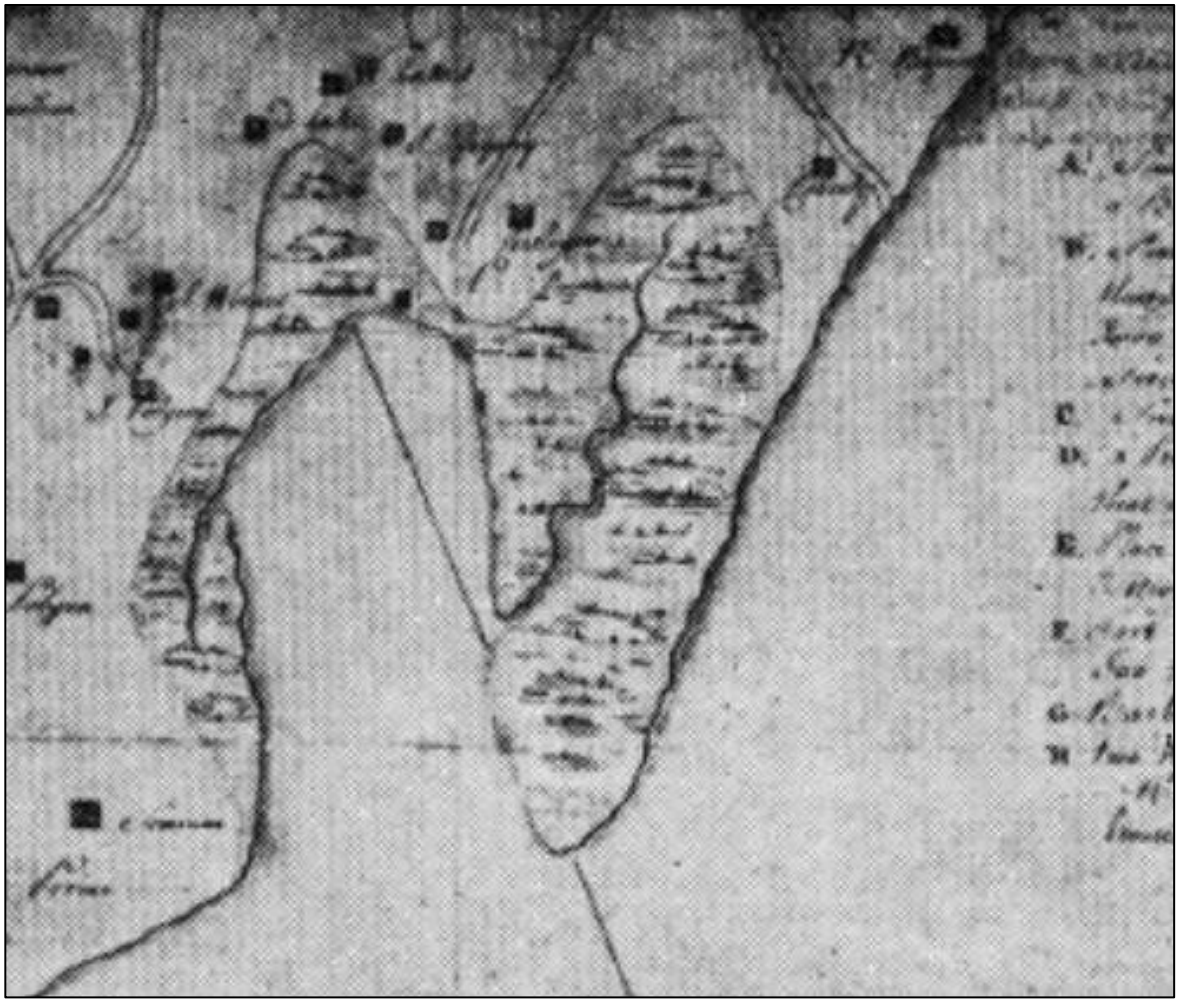


Figure 1. Plan No. 31 du Camp Anglo-Hessois dans Staten Island. 1780 & 1783.

3.6 AGRICULTURE, OYSTERING, AND INDUSTRIALIZATION (1785–1880)

Following the Revolution, Staten Island was reorganized into four towns in 1788, with Middletown added in 1860. The Village of Edgewater was incorporated in 1866 from several east shore settlements (Cramer 2004; Leng and Davis 1930). Development remained concentrated near ferry landings, the most prominent operated by Cornelius Vanderbilt, who introduced steamship service in 1817.

Staten Island's oyster industry flourished during the 19th century, becoming a significant local employer and economic driver. Near the project area, Dr. E. Clark owned two structures along Old Mill Road in 1859, over a mile north of the proposed area of effect (Figure *2*; Walling 1859).

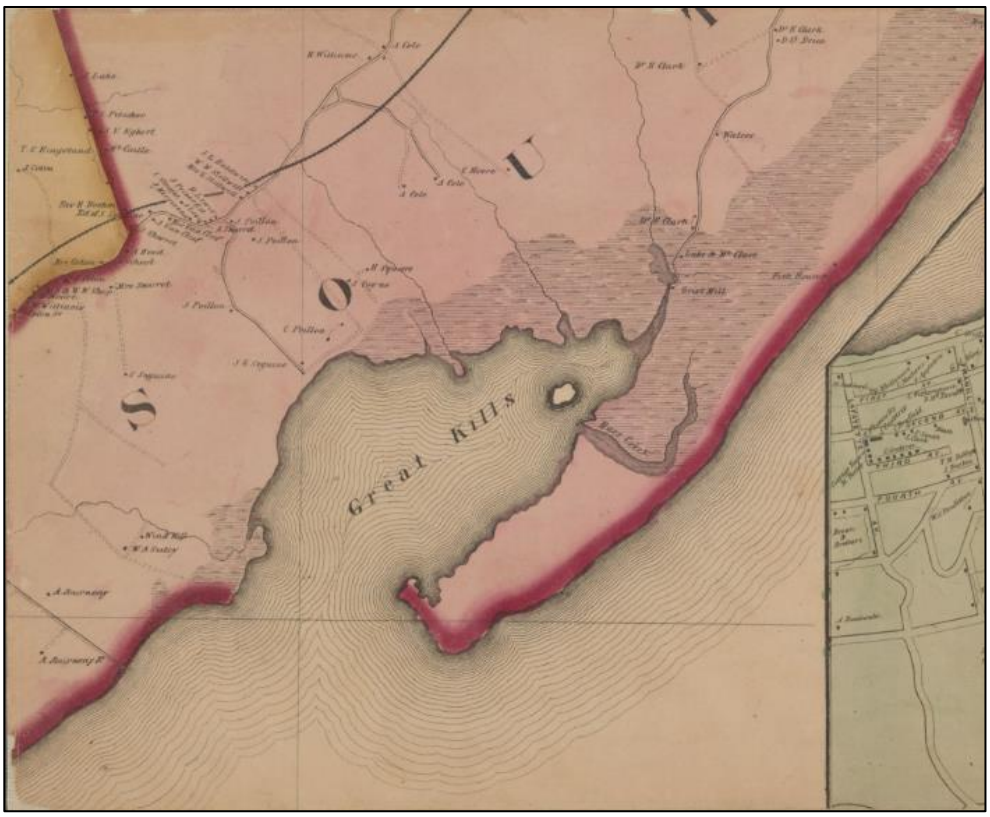


Figure 2. Map of Staten Island, Richmond County, New York City, from surveys under the direction of H. F. Walling(1859)

Figure 3. Map of Staten Island (Richmond County) New York also cities of Bayonne and Perth Amboy, village of Woodbridge, New Jersey shewing topography, farms, shore soundings (Dripps 1872)

The Corleyou mill later became associated with a “Loveridge” family, possibly the miller rather than the owner. The mill appears on maps as a grist mill through 1874 but was reportedly derelict by 1890 and demolished by 1896, likely during the construction of Gateway National Recreation Area facilities (Baugher-Perlin and Bluefeld 1980).
A tidal-powered mill on the Lake property included a dam and gate system that stored floodwater for use at ebb tide. The mill primarily served local needs and was not a commercial enterprise. The Lake family farmstead and a burial ground (1740–1850) were located beneath what is now the Oakwood Beach Water Pollution Control Plant (Figure *3*) (New York Times, May 23, 1993).

Two additional structures labeled as “Fish Houses” near the beach in 1850 (Loveridge properties) may have been abandoned by 1887(Figure *4*)

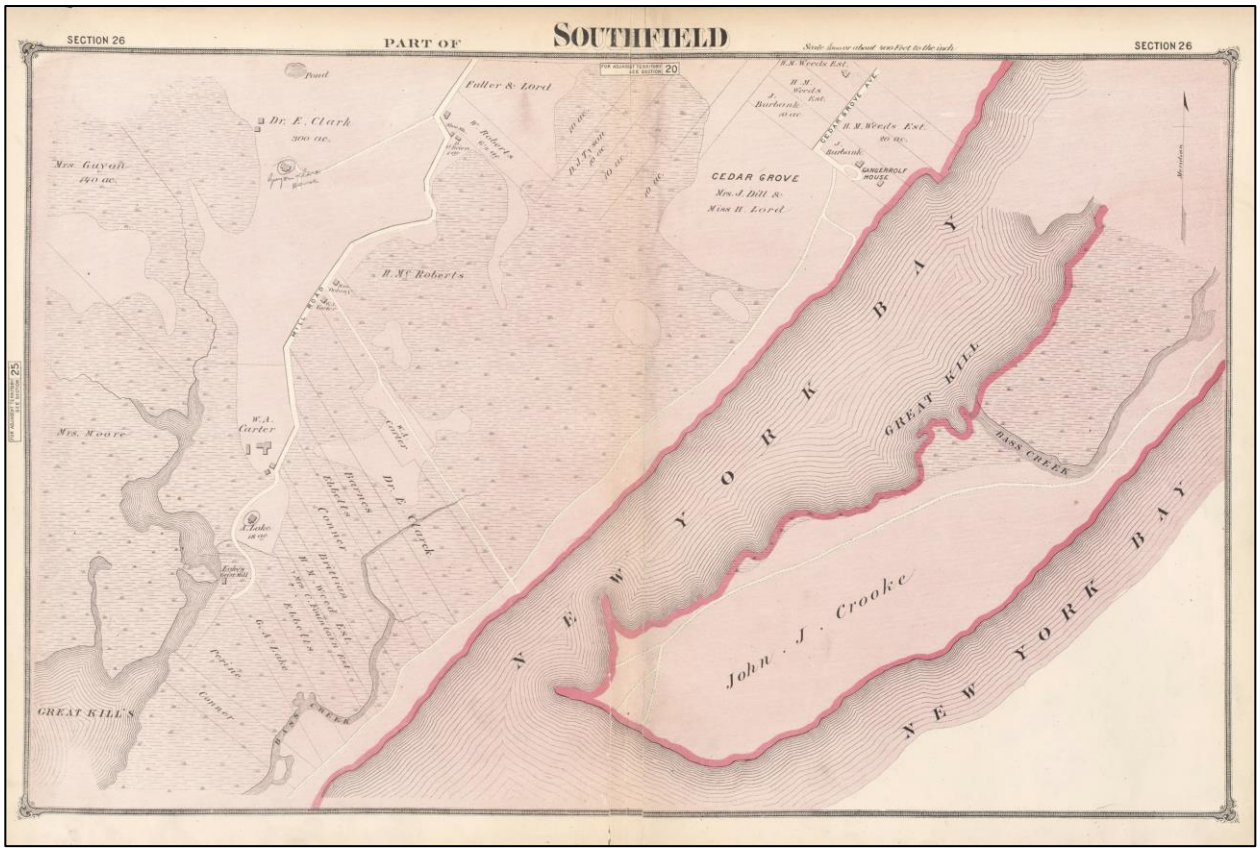
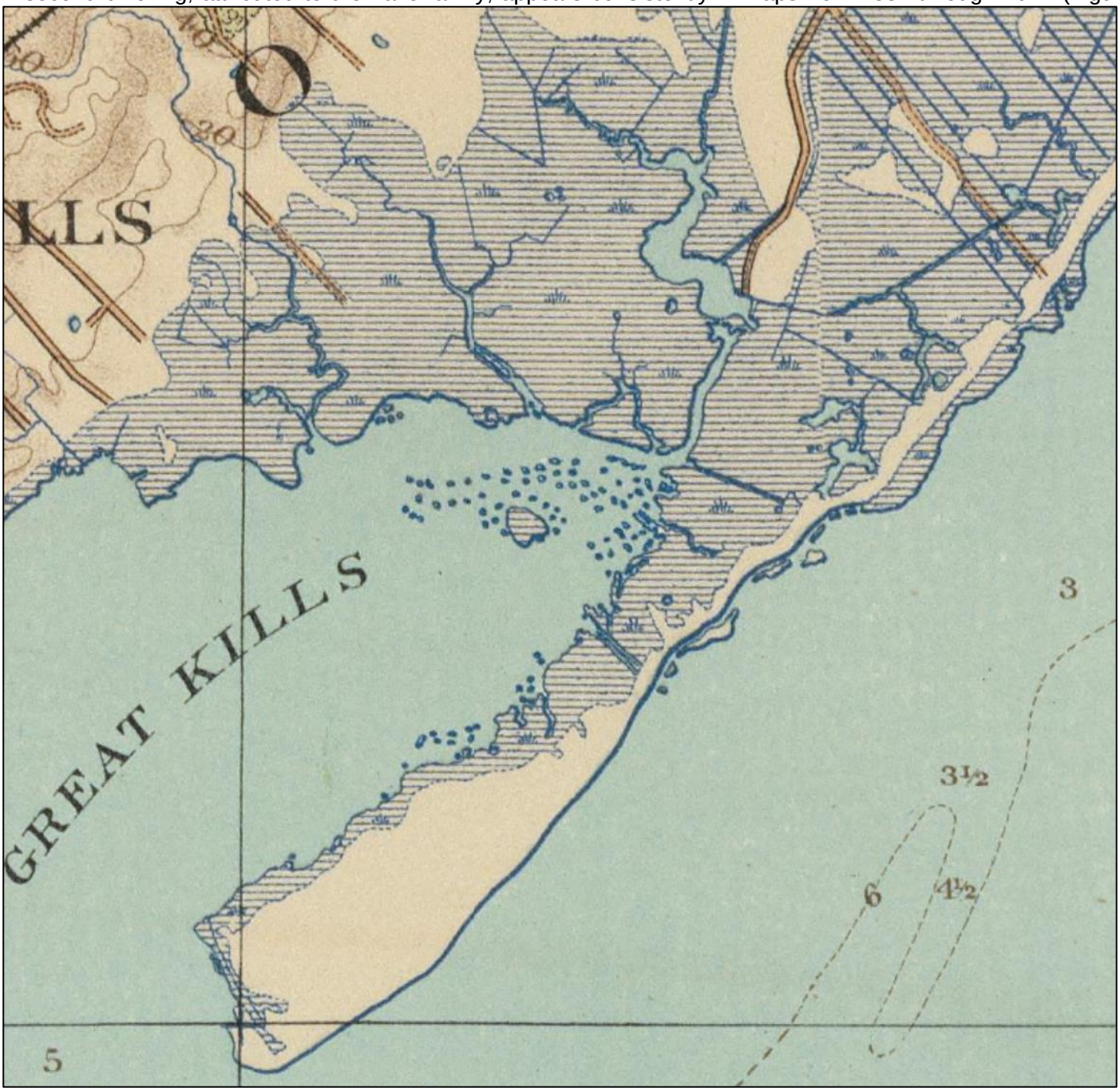


Figure 4. Part of Westfield & Southfield, southern portion of Great Kills (beers 187*4)*

3.7 POST-CONSOLIDATION AND SUBURBAN DEVELOPMENT (1880–1980)

The creation of the Staten Island Rapid Transit (SIRT) system in 1880, led by William Pendleton and Erastus Wiman, connected the island to Manhattan and New Jersey and facilitated rapid industrial growth (Miller 2003:112; Stark 2006:12-29; Jackson 2010). The Baltimore and Ohio Railroad’s collaboration enabled ocean freight shipping via terminals at St. George and Arlington. By the 1920s, Staten Island’s industrial workforce had grown to over 15,500 from just over 1,500 in 1880.

Colton’s 1884 map and subsequent surveys depict the area’s property configuration, including the Clark dwelling and associated orchard, fields, and stables (Figure *5*). In the early 20th century, the property may have been used by the Presbyterian Church of Sea and Land (Bromley 1917).

A second dwelling, attributed to the Lake family, appears consistently in maps from 1884 through 1911 (Figure *6*; 

). A family cemetery once associated with this property was eventually covered by later construction. Another small structure near Old Mill Road was demolished by 1911 (Borough of Richmond Topographical Survey 1911).

Figure 5. Map of Staten Island, Richmond County, State of New York Colton 1884

Figure 6. Beers' new map of Staten Island (1887)

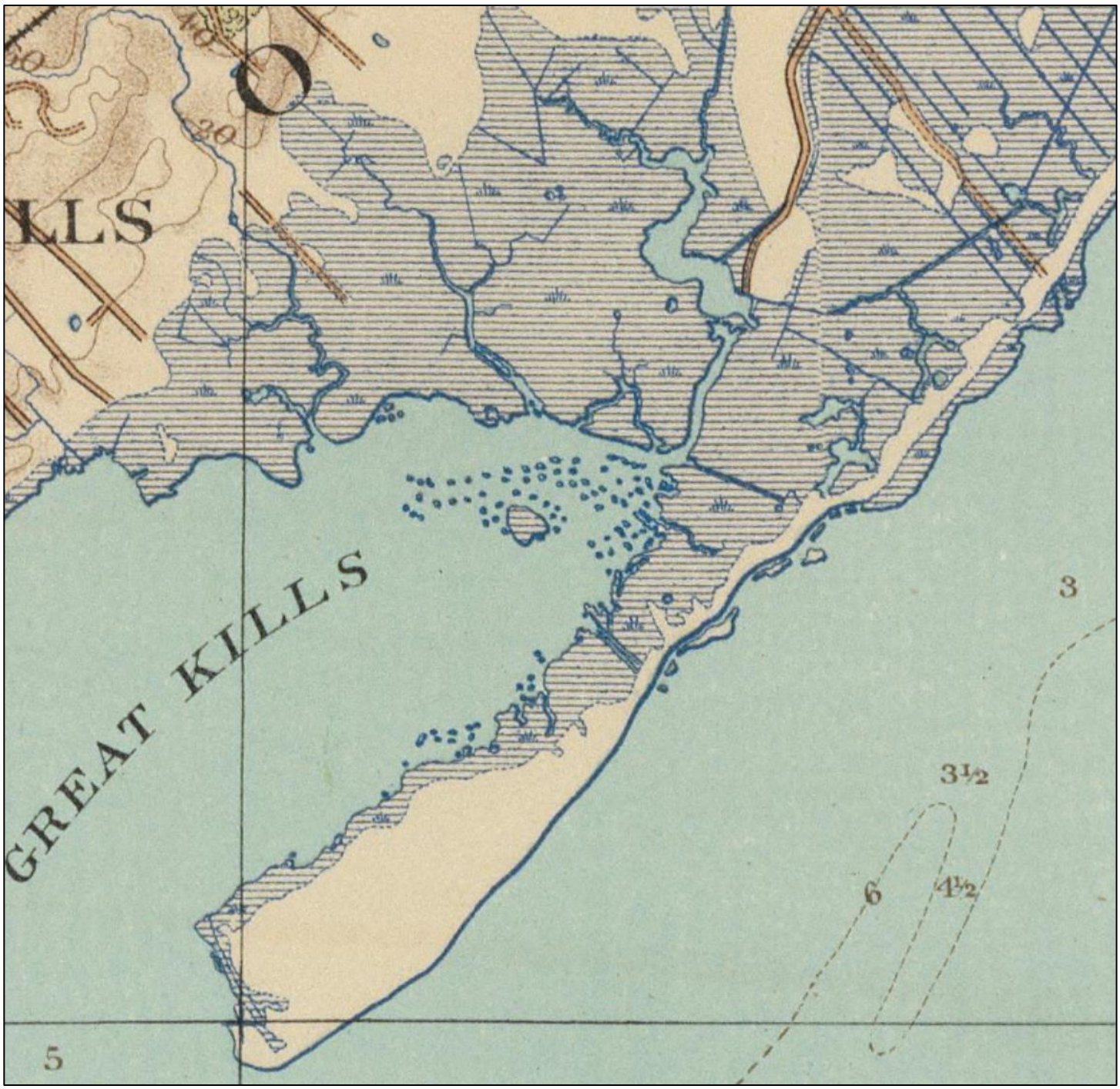


Figure 7. A Topographical atlas of Staten Island, 1890.

Figure 8. New Standard Map of the Borough of Richmond, Rand-McNally 1903

Figure 9. Map of the Borough of Richmond, City of New York, E. Belcher Hyde 1906.

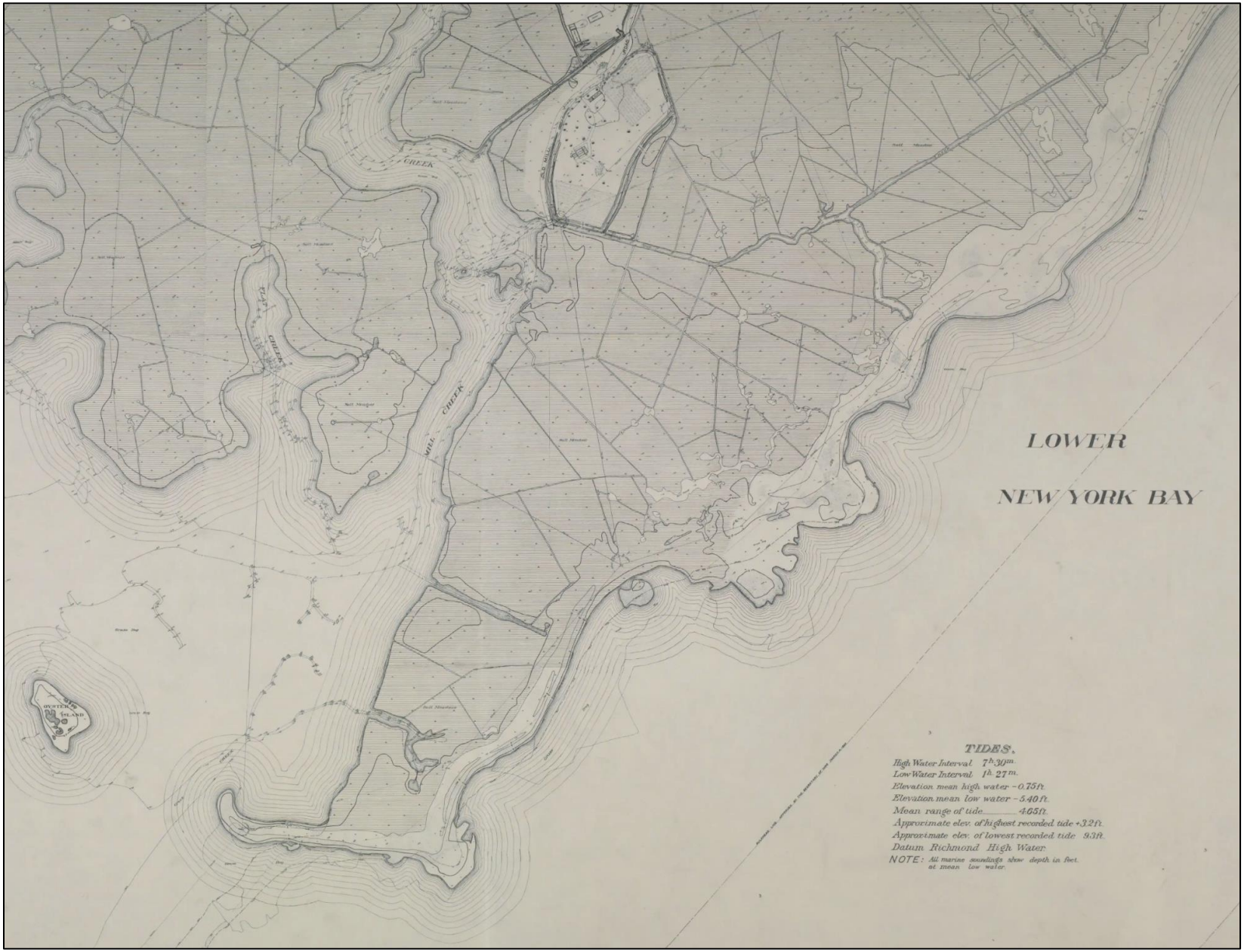


Figure 10. Sheet Nos. 79 & 80. [Include Oyster Island, Lockman's Creek, Flat Creek and Mill Creek Estuaries.] 1906-1913.

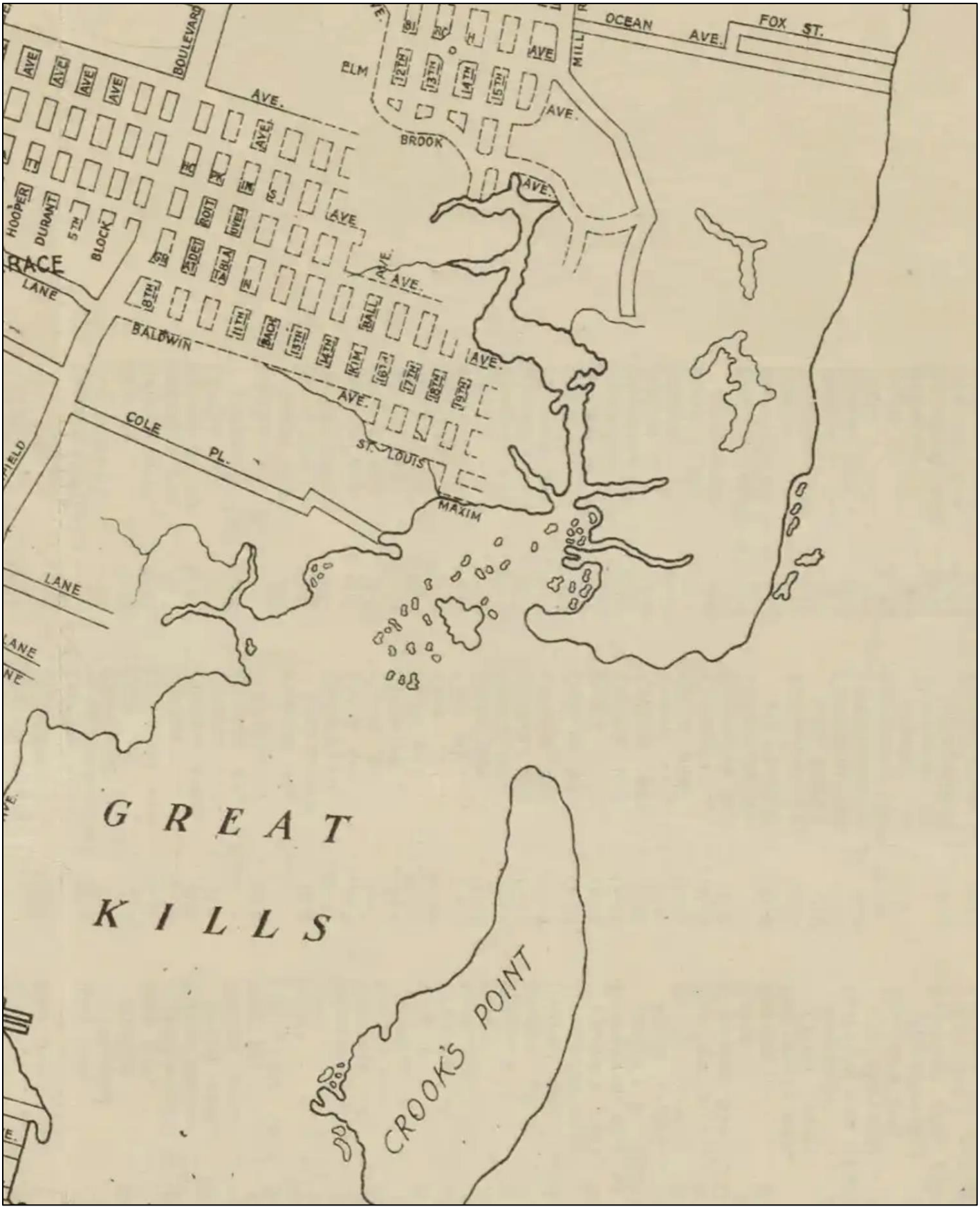


Figure 11. Hammond's complete map of Staten Island, N.Y., Borough of Richmond, New York City, 1920.

Figure 12. Richmond Borough Congressional Districts, 1921.

Crookes Point and Great Kills Harbor remained largely undeveloped salt marsh until the mid-20th century. In the 1800s, a shipbuilder and a fisherman occupied the point, followed by squatters in the 1920s (Figure 11; Figure 12). The area was extensively ditched for drainage, and Bass Creek was channelized (Vermuele & Bien 1890). Landfill operations began in the 1940s, leading to the site's reuse as a city park and later incorporation into the federal Gateway National Recreation Area.

3.8 SUBURBANIZATION AND MODERNIZATION (1980–PRESENT)

Throughout much of its history, Great Kills and Oakwood Beach were regarded as quiet coastal communities with a fishing village character reminiscent of other East Coast settlements (Leng and Davis 1930:487). Today, the area is primarily residential and forms part of the Great Kills Unit of Gateway National Recreation Area. The Oakwood Beach Water Pollution Control Plant, constructed in the 1950s, has since been expanded multiple times and remains a dominant feature of the local landscape, and is directly northwest of the proposed AE.

EXISTING CONDITIONS AND ENVIRONMENTAL EFFECTS

As presented in the Environmental Appendix, Cultural Resource Categories within the Study Area have been reviewed to determine if there is a potential for the Alternatives to effect, either adversely or beneficially, Resource Categories starting with an initial screening to identify *if* there is a potential for adverse effects (Yes – Y; or No – N) by the measures of each Alternative, followed by an assessment of the magnitude of those identified potential adverse effects, rated on a scale of 0 (No Adverse Effects) to minus 5 (–5, Significant Adverse Effects), by Alternative. Each Cultural Resource includes a summary discussion of the anticipated and reasonably foreseeable effects of each Alternative, additionally reflected by qualitative magnitude of effect ratings. Based on comments received following release of the Draft Report, the qualitative rating system and criteria has been revised and expanded upon in the following manner:

- Adverse effects rating criteria ranges from 0 to –5, with negative markers added to emphasize the anticipated qualitative negative effect.
- Beneficial effects rating criteria was established and presented herein, following a similar structure as the adverse effects rating criteria, except the beneficial effects ranging from 0 to +5, including a positive marker to emphasize the anticipated qualitative beneficial effect.
- The No Action was assessed in the same manner as the Alternative Actions, with qualitative rating scores accompanying each description.
- Cultural Resource Impacts require a more refined framework tailored to cultural resources is essential to adequately assess both adverse and beneficial effects, guide meaningful mitigation, and ensure compliance with federal preservation mandates. This approach enables more precise evaluations and protects cultural heritage in ways that environmental scoring systems alone cannot achieve.

Cultural resources are vulnerable to the impacts of storm surges, flooding, and sea-level rise. These types of exposures can diminish the physical and historic integrity of archaeological sites, historic buildings, and cultural landscapes through physical damage or destruction. Integrity is essential for historic properties to retain their designations as National Historic Landmarks, State / National Register listed or eligible resources, NYC Landmarks, and / or NPS parks or site units, examples of all of which are present throughout the study area.

3.9 CULTURAL RESOURCE LIST AND POTENTIAL TO EFFECT DETERMINATION

This table represents the overview of the Resources identified in the September 2022 Draft Report as potentially occurring within the Study Area to determine if the Comprehensive Plan would affect said resources. These same resources were again reviewed for the Harlem River AE Site and assessed in the same manner as summarized below. The difference between the September 2022 Draft Report assessment and this one is that this one includes the negative and positive markers to establish the presence/absence of adverse and/or beneficial effects. A deviation from this process, is the exclusion of the New York Bight Ecological Model (NYBEM) Developed by the U.S. Army Corps of Engineers, Engineering Research and Development Center, as it is not applicable to these AE sites but rather the larger Comprehensive Plan as a whole.

3.10 CULTURAL RESOURCE QUALITATIVE RATING METHODOLOGY AND SCORING PROCESS

A rating methodology was developed, adopted, and enhanced from the September 2022 Draft Integrated Report and Tier 1 EIS to qualitatively assess as well as the current Draft EA Qualitative Rating Methodology to compare the adverse impacts of each resource within the Study Area. While environmental impact frameworks provide a broad lens for evaluating project effects, cultural resources require a more nuanced and specialized approach due to their historical, archaeological, and intangible values. Environmental models often emphasize biophysical metrics such as land use, hydrology, or emissions, which can overlook the complex regulatory, contextual, and community-based significance of cultural resources. Under Section 106 of the National Historic Preservation Act, federal undertakings must consider not only physical alterations but also visual, auditory, and contextual impacts to historic properties and archaeological sites. Therefore, a more refined framework tailored to cultural resources

is essential to adequately assess both adverse and beneficial effects, guide meaningful mitigation, and ensure compliance with federal preservation mandates. This approach enables more precise evaluations and protects cultural heritage in ways that environmental scoring systems alone cannot achieve.

Cultural Resources Impact Evaluation Framework

Resource Categories:

- Above-Ground: Historic structures, viewsheds, cultural landscapes
- Below-Ground: Archaeological sites (terrestrial and submerged)
- Project Phases Considered: Construction, Operation & Maintenance
- Impact Types: Adverse (Negative) Effects, Beneficial Effects

Evaluation Factors:

- Impact Magnitude (Intensity/Extent)
- Geographic Scope (Local/Regional)
- Temporal Scope (Short-/Long-Term)
- Regulatory Thresholds (e.g., NEPA, NRHP eligibility, Section 106 compliance
- Mitigation Potential (Avoidance, Minimization, Treatment, Enhancement)

Table 1. Adverse Effects Rating Table (With Mitigation Evaluation Built In)

Impact Rating	Score	Description	Example	Mitigation Category
High	-5	Permanent destruction of resource; exceeds regulatory thresholds; mitigation **insufficient** to reduce impact to an acceptable level.	Demolition of an NRHP-listed building without documentation or alternatives.	**No effective mitigation possible**; total loss of integrity/significance.
Mod–High	-4	Significant adverse effect; mitigation **necessary and substantial**, but cannot eliminate loss of integrity.	Cut through historic landscape with unavoidable impacts.	**Partial mitigation** (e.g., detailed documentation, interpretive signage, data recovery).
Moderate	-3	Impact is localized and within thresholds; mitigation **can fully address** resource loss or damage.	Archaeological site disturbed by utilities, but full data recovery is planned.	**Effective mitigation** (e.g., redesign, excavation, relocation, HABS/HAER documentation).
Low–Mod	-2	Minor adverse impact; mitigation **simple and sufficient** to avoid significance loss.	Short-term construction next to historic structure with vibration monitoring.	**Standard BMPs** or buffer zones.
Low	-1	Temporary, negligible effects; no mitigation required.	Minor access near site boundary.	**No mitigation necessary**.
No Impact	0	No effect on cultural resources.	Boring in fully disturbed, tested area.	Not applicable.

Table 2. Beneficial Effects Rating Table (With Enhancement Evaluation)

Benefit Rating	Score	Description	Example	Mitigation Enhancement Category
High	+5	Regionally significant enhancement of a cultural resource or site; measurable, long-term improvement; promotes public engagement.	Adaptive reuse of a historic building as public space with interpretation.	**Preservation + Public Benefit** (e.g., funding, easements, partnerships).
Mod–High	+4	Strong enhancement locally or regionally; mitigation or restoration improves condition or setting.	Viewshed restoration at a historic site through invasive species removal.	**Restoration + Setting Rehabilitation**.
Moderate	+3	Measurable benefit to one or more cultural resources; increased protection or documentation.	Phase III recovery with public education materials produced.	**Public interpretation, research access, stewardship agreements**.
Low–Mod	+2	Some improvement beyond existing condition; resource protected or documented more completely.	HABS documentation of vulnerable site.	**Archival mitigation + limited outreach**.
Low	+1	Minor benefit, such as improved access, visibility, or documentation.	Signage for nearby unmarked historic feature.	**Minimal enhancement**.
No Impact	0	No beneficial effect beyond current condition.	Routine maintenance in non-sensitive areas.	Not applicable.

Both rating methodologies analyses and qualitative scoring informed the effects assessments and the EQ account for Plan Selection and identifying the environmentally preferred alternative for each Actionable Element site. Scores for adverse impacts were rated for each resource on a scale of 0 to –5, with 0 being no impact to the resource, and –5 being significant impacts to the resource that would be considered not
Example explanation:

Table 3. Cultural Resources Impact Summary Table

Resource Qualitative Rating	Adverse Effects		Beneficial Effects		NO ACTION TOTAL SCORE	ACTION TOTAL SCORE
	No Action	Action	No Action	Action		
Construction/Footprint						
Historic Structures	0	0	0	0	0	0
Viewshed / Historic Setting	-1	0	0	1	-1	1
Terrestrial Archaeological Resources	-1	-1	0	0	-1	-1

Submerged Archaeological Resources	0	0	0	0	0	0
O&M Assumptions						
Historic Structures	0	-1	0	1	0	0
Viewshed / Historic Setting	0	0	0	3	0	3
Terrestrial Archaeological Resources	0	0	0	0	0	0
Submerged Archaeological Resources	0	0	0	0	0	0
Mitigation (if applicable, otherwise 0)	0	0	0	0	0	0
Subtotal Resource Score with mitigation						
ACTION TOTAL SCORE (calculated, additive, with mitigation)					**-2**	**3**

3.11 EXISTING CONDITIONS

Cultural resources are vulnerable to the impacts of storm surges, flooding, and sea-level rise. These types of exposures can diminish the physical and historic integrity of archaeological sites, historic buildings, and cultural landscapes through physical damage or destruction. Integrity is essential for historic properties to retain their designations as National Historic Landmarks, State / National Register listed or eligible resources, NYC Landmarks, and / or NPS parks or site units, examples of all of which are present throughout the study area.

3.11.1 Aboveground Resources

World Heritage Sites. There are no United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Sites within the study area.

Traditional Cultural Properties. A Traditional Cultural Property (TCP) is "one that is eligible for inclusion in the National Register because of its association with cultural practices or beliefs of a living community that (a) are rooted in the community's history, and (b) are important in maintaining the continuing cultural identity of the community" (Parker and King 1998:1). Currently, there is no comprehensive list of such properties within the study area.

The Stockbridge Munsee Tribe recognizes Papscanee Island, located on the Hudson River just two miles south of Albany, outside of the study area, as a traditional cultural property of religious and cultural importance. The New York State Office of Parks, Recreation and Historic Preservation has, based on these criteria, determined the site eligible for inclusion in the National Register of Historic Places.

If other TCPs exist in the region, they may be linked to Native American Nations or ethnic groups from more recent waves of migration, including those from Europe, Asia, Africa, South America, Australia, and other parts of North America.

Ethnographic Resources. In NPS parlance, ethnographic resources are "sites, structures, objects, landscapes, and natural resources or features of traditional importance to a contemporary cultural group through associations three generations or more in length" (Rockman et al. 2016:19).

Currently, these resources have not been quantified for the study area. If they are present, they may be connected to Native American Nations, as well as ethnic groups from more recently arrived populations from Europe, Asia, Africa, South America, Australia, and other regions of North America.

Cultural Landscapes. A cultural landscape is "a geographic area, including both cultural and natural resources and the wildlife or domestic animals therein, associated with a historic event, activity, or person, or exhibiting other cultural or aesthetic values" (NPS 2021). The National Park Service defines four types of cultural landscapes, which are not mutually exclusive: Historic Designed Landscapes; Historic Sites; Historic Vernacular Landscapes; and Ethnographic Landscapes. At present, cultural landscapes are not well-quantified for the study area.

Museum Collections. The NYNJHAT AE Study Area does not contain any of the 145 museum collections associated with the rich and varied cultural history of New York and New Jersey, the United States, and other collections from around the world.

3.11.2 Archaeological and Submerged Resources

Submerged Cultural Resources. The submerged cultural resources portion of the Direct APE is defined as the depth and breadth of the geographic areas potentially affected by any bottom-disturbing activities. The marine/riverine Direct APE also includes maritime/riverine cultural resources landward of the shoreline (i.e., onshore) and resources offshore of the AEs and tributaries.

The New York State Office of Parks, Recreation, and Historic Preservation (NYSOPRHP) has information on more than 1,000 shipwreck sites and reported losses, though there may be as many as 10,000 shipwrecks in state waters (NPS 2022a).

Potential For Encountering Submerged Native American Sites. Preceramic-period sites in the Northeast are typically located on high ground along major river terraces, often near confluences, offering views of expansive land areas. During this time, river systems were larger, longer, and more dynamic, shaped by glacial meltwater that moved glacial outwash boulders, cobbles, and pebbles, materials that could serve as lithic resources. As sea levels rose, river mouths were submerged, creating bays, estuaries, and salt marshes that expanded over the retreating coastal plain. These environments would have been attractive to early human settlers for habitation or resource exploitation. Such areas, especially lee and back-bay settings, may also help preserve archaeological sites, as estuarine sedimentation can protect older or contemporaneous deposits from erosion caused by rising sea levels (Panamerican 2020:17).

Potential Native American Archaeological Sites. For Native American archaeological sites, areas of interest include the margins of streams, lakes, ponds, and estuarine environments. Channel facies are typically identified as concave-shaped reflectors, while potential reflectors might include deltaic features (wedge-shaped deposits), characterized by alternating layers with varying reflective properties and indicative slope (Panamerican Consultants 2020:18).

Geomorphology and Submerged Prehistoric Resources. The potential for submerged prehistoric resources within the study area is closely tied to the geomorphology of river and harbor bottoms, shaped by post-Pleistocene sea-level changes and subsequent marine processes. The

configuration of the seafloor reflects various processes, including multiple glacial advances, isostatic rebound (uplift), marine incursion, and modern seafloor processes. Data gathered from cores, seismic remote sensing, and sediment studies help reconstruct the geological history of the region, providing insights into the areas most likely to contain preserved prehistoric sites (Panamerican 2020:3).

Archaeological Site and Shipwreck Inventory. Studies of shipwrecks in the New York/New Jersey Harbor area have revealed that numerous vessels have been lost in the region since the early seventeenth century. The waters surrounding New York have served as a major route for ships spanning every era in U.S. history, making it home to a wide array of shipwreck sites, many of which remain undocumented and unidentified.

Estimates of the number of shipwrecks in the region vary, ranging from hundreds to thousands. The coastlines of Long Island and New Jersey form a natural "funnel" that directs maritime traffic into New York Harbor, leading to a higher concentration of shipwrecks than anywhere else along the East Coast of the United States, possibly with the exception of Cape Hatteras on the Carolina Outer Banks [Sheard 1998:8].

Numerous accounts have been written about the hazards faced by ships navigating the approach to New York New Jersey Harbor. These vessels were often lost due to adverse weather conditions, lack of navigational aids, marine accidents, or grounding near the surf zone. In many cases, ships could not be salvaged, resulting in the degradation of their hulls. According to Rattray (1973:50), the southern shore of Long Island is notorious for shifting sandbars that extend along the entire length of the island. These dangerous features, along with other factors, made the approach to New York New Jersey Harbor, and the harbor itself, a prime location for shipwrecks and maritime disasters (Panamerican Consultants 2020:35).

National Register Listed and Eligible Resources. According to the NYSHPO's Cultural Resource Information System (CRIS), no National Register listed or eligible resources are in the study area. However, there are 2 individual aboveground historic resources (both historic properties are not NR Eligible), and 1 National Recreation Area. There are an additional 2 known archaeological sites that have yet to be investigated to determine whether they are eligible for NRHP. These two archaeological sites, Great Kills Harbor (08501.000165), Lake's Tide Mill and Homestead which was an early 18thth century grist mill along Mill Creek belonging to Arthur Lake and demolished in 1896 and further disturbed by the construction of the current waste water treatment plant, and the Prehistoric, multicomponent Great Kills Park site (08501.000168), are discussed at length in Section 3.12.1.

New York State Museum Archaeological Sites. The NYSM has no records for archaeological sites or archaeological areas in the study area.

National Historic Landmarks (NHLs). National Historic Landmarks are historic properties that illustrate the heritage of the United States. There are currently more than 2,600 NHLs designated which represents an outstanding aspect of American history and culture (NPS 2022a). There are many types of NHLs which include historic buildings, sites, structures, objects, and districts. There are no identified NHLs within the study area.

National Park Service Sites. National Park Service Sites are administered by the federal government. The single NPS site, Gateway National Recreation Area: Great Kills Park, in the study area contains a wide variety of cultural resources and historic landscapes. The Great Kills Park

represents over 400 years of American history, and was once home to the second permanent European Settlement in Staten Island. This is one of the most iconic and visible parks in the harbor area.

New York City Landmarks. The New York City Landmarks Preservation Commission (LPC) administers the city's Landmarks Preservation Law. It is responsible for protecting New York City's architecturally, historically, and culturally significant buildings and sites by granting them landmark or historic district status and regulating them after designation (NYC LPC 2022).

NYC LPC landmarks are designated in four categories: individual landmarks, interior landmarks (i.e., building interiors), scenic landmarks, and historic districts. The National Register is separate from the LPC although many of New York City's individual landmarks and historic districts are also listed on the National Register. There are more than 37,600 landmark properties in New York City, most of which are in 152 historic districts and historic district extensions in all five boroughs (NYC LPC 2022). None of the NYC Scenic Landmarks are in the study area.

No NYC Landmark individual properties or historic districts have been identified as partially in or adjacent to the 100-m Direct APEs for the project alternative (see Sections 3.12).

3.12 ENVIRONMENTAL CONSEQUENCES OAKWOOD BEACH, NEW YORK STUDY AREA

The Direct APE for the AE in Staten Island, New York is approximately 62.2 sq acres. This Direct APE intersects: 2 SHPO-cataloged archaeological sites (of which neither are listed in the NRHP, and have not been investigated sufficiently to determine their NR-eligibility); 0 NYSM archaeological areas; 2 above-ground historic properties that are not NR eligible (Tarlton Street Bridge and the Wastewater Treatment Plant); 0 NR-listed individual properties; 0 NR-listed historic districts; 0 LPC landmarks; and a National Recreation Area (Great Kills Unit of the Gateway National Recreation Area) (Table 37). The NOAA ENC database lists 0 shipwrecks in the Oakwood Beach portion of the Direct APE. The SHPO data does not indicate there are any cemeteries in the APE.

This Section provides the results of a preliminary review of cultural resources data available in the NYS OPRHP databases, as well as the NOAA ENC database and the NYC Landmarks Preservation Commission's internet accessible geographic information system, for proposed measures for the AE. To protect archaeological sites, in compliance with Federal and State laws, their locations and names are not provided in this EA report. The features for the AE involve the construction of structures that have a potential to affect directly historic properties and cultural resources in both terrestrial and submerged environments. The proposed alternative is in an area that would be considered to have a moderate probability for terrestrial and submerged cultural resources to occur. At the most general level, Native American archaeological sites are most likely to be located near water; by definition, submerged resources are in water and early non-Native American settlements clustered near water, particularly in the time before plumbing and sanitary sewer systems. For further discussion and analysis of project features please see the main report.

Table 4. Cultural Resources within the 100-meter Direct APE

Historic Property Type	Number of properties in Oakwood Beach APE
National Historic Landmark	0
Historic District, NR-listed	0

Historic District, NR-eligible	0
Individual aboveground property, NR-listed	0
Individual aboveground property, NR-Ineligible	2
NYC LPC individual landmarks	0
NYC LPC landmark districts	0
Archaeological site, NR-listed*	0
Archaeological site, NR-eligible*	0
Archaeological site, undetermined eligibility*	2
NYSM archaeological site	0
NYSM archaeological area	0
Shipwreck	0
National Recreation Area	1
Cemeteries	0

Preliminary Totals of Cultural Resources within 100 meters (328 ft) of the Alternative (Direct APE) *(after data from the NYSHPO, NYSM, NJSHPO, NPS, NOAA, and the NYC LPC).*

Undetermined SHPO Archaeological Sites: Great Kills Harbor (08501.000165), LAKE'S TIDE MILL AND HOMESTEAD, GREAT KILLS PARK (08501.000168)
SR/NR Ineligible Building: Tarlton Street Bridge (08501.003712), Wastewater treatment plant (08501.003363)

3.12.1 Cultural Resource Surveys

The NYSHPO lists 6, cultural resource surveys within or near the 100-meter Direct APE.

20SR00366: This investigation was conducted in support of the proposed South Shore of Staten Island Coastal Storm Risk Management Project (Hunter Research 2020). The work was performed by Hunter Research, Inc., under contract to Princeton Hydro, on behalf of the U.S. Army Corps of Engineers (USACE), New York District. This study built upon a prior Phase I feasibility study conducted by Panamerican Consultants, Inc. in 2005. Through geoarchaeological analysis, it evaluates the potential for deeply buried prehistoric archaeological resources within the project alignment. In addition, it includes historical research on the Lake tide mill site in Great Kills. The geomorphological and archaeological assessment found that much of the project area has low potential for intact buried land surfaces or significant archaeological deposits. However, two areas within the project's Area of Potential Effect (APE) were identified as having archaeological sensitivity.

10SR60383: This 2010 investigation (Historical Perspectives, 2010) was a component of the New York City Department of Parks and Recreation's (DPR) proposed Cedar Grove Beach Rehabilitation Project, located within Great Kills Park on Staten Island, New York. The project site, owned by DPR, encompassed approximately 34 acres south of Ebbitts Street and includes portions of Block 4105, Lot 50, and Block 4108, Lot 45. This area contained 42 one- to one-and-a-half-story seasonal beach bungalows, a clubhouse, a barn, and five ancillary garage structures, collectively known as the Cedar Grove Beach Club. The majority of these buildings were slated for demolition. Further work included the removal of above-grade foundation remnants and

debris on the beach near Ebbitts Street and Cedar Grove Court. DPR served as the lead agency for this undertaking. The area south of Cedar Grove Beach contained the majority of the bungalows and the beach itself had been heavily disturbed by previous building construction, utility installation, beach modification, and sand deposition for shoreline expansion, including the installation of stone piers. This portion of the property was determined to have low to no archaeological sensitivity. Between Cedar Grove Beach Place and Cedar Grove Avenue was determined to have been disturbed in discrete areas due to building and utility activity and showed signs of erosion. Clearly disturbed zones were considered to have low to no archaeological sensitivity, while areas with less visible disturbance may retain moderate archaeological sensitivity, pending verification of ground integrity. The area North of Cedar Grove Avenue demonstrated some disturbance has occurred around existing or former buildings, the historically undeveloped areas remain largely intact. Locations farther inland from the shoreline, on higher elevations and near marshlands were determined to possess high archaeological sensitivity, particularly where no visible disturbance had occurred.

11SR61269: The New York City Department of Environmental Protection (DEP) developed a stormwater drainage plan for the New Creek Watershed in 2011 (Historical Perspectives 2011). The environmental review process, including an archaeological sensitivity evaluation conducted by the New York City Landmarks Preservation Commission (LPC) and the New York State Office of Parks, Recreation and Historic Preservation (NYSHPO), began in 2010. As part of the standard coordination for a Draft Environmental Impact Statement (DEIS), both LPC and NYSHPO requested a research-based archaeological assessment, specifically, a Phase IA Archaeological Documentary Study, to evaluate the archaeological sensitivity of three watershed areas: Oakwood Beach, New Creek, and South Beach (requests dated April 14 and April 29, 2010, respectively). Historical Perspectives, Inc. (HPI) was contracted by AKRF to conduct the Phase IA study for the New Creek Watershed and associated Best Management Practice (BMP) sites. The study concluded that the proposed BMP NC-4 site and part of BMP NC-6 exhibit high sensitivity for precontact archaeological resources. The remaining BMP sites and proposed outfall locations showed no precontact archaeological sensitivity. None of the BMP or outfall locations (including those outside the current study area) demonstrated historic-period archaeological sensitivity. The assessment of both precontact and historic-period sensitivity across the New Creek Watershed was conducted at a general level. However, the degree of prior disturbance across the watershed, due to development and earthmoving activities, varied by location. As such, archaeological sensitivity should be evaluated on a site-specific basis when future work is considered.

05SR55788: Panamerican Consultants, Inc., under contract to Northern Ecological Associates of Fredonia, New York, conducted a Phase I cultural resource investigation along approximately 6 miles of Staten Island's southern shoreline, extending from Fort Wadsworth to Crescent Beach (USACE 2005). The environmental conditions within the project area were determined to have a low probability of yielding later prehistoric sites or materials. Historical maps from the late 18th century depict an extensive marshland just behind the shoreline. While such environments may have been suitable for resource exploitation, they were unlikely to support permanent or long-term habitation. It is more probable that small-scale or short-term encampments occurred on nearby higher ground, rather than within the marsh itself. These landforms, although adjacent to the study area, hosted some prehistoric sites not directly within the project footprint (USACE 2005).

The field survey did not identify any near-surface late prehistoric artifacts or features. However, the possibility of deeply buried early prehistoric sites beneath the current beach, near-shore areas, or filled historic marshlands remains. Investigations along Oakwood Beach primarily uncovered modern materials dating from the mid-20th century to the present. A minor historic artifact component was recovered from the area of the Cedar Grove Beach Club community bungalows, and evidence of former structures—including foundations and construction debris, was also documented. However, no evidence was found of other previously documented historic structures, such as the Oakwood Lighthouse (USACE 2005).

78SR58972: Beginning in the late 1970s, the National Park Service conducted an inventory of cultural resources within the Gateway National Recreation Area, identifying several Native American sites in the Great Kills Park area, including a Paleo-Indian fluted point find spot (John Milner Associates 1978). Milner detailed that Bolton (1934) first reported on the Great Kills Harbor Site (08501.000165), which he referred to as *Shawcopshee*, "the probable name of the Great Kills, which may have been the refuge, for about 16 years, of the Nayack natives when they moved from Long Island." Milner interpreted the evidence of prehistoric activity at the head of the kills as suggestive of short-term occupation, but not long-term or permanent residence (Bolton 1934). If Bolton's interpretation was correct, Milner hypothesized that the site represented a short-term campsite rather than a permanent village.

Following Bolton's initial report, the Staten Island Institute of Arts and Sciences acquired a collection of artifacts from the site, at which time it received its numerical site designation (John Milner Associates 1978). Milner's 1978 report further documented that another nearby site, also referred to as a Great Kills Harbor Site (08501.000166), had yielded artifacts that had been housed in the Institute's collection for several years. Milner proposed that this site and the previously described STD-GK (08501.000165) likely represented the same archaeological locality.

To the southwest of the current study area, the Crookes Point Site (08501.000162) also produced artifacts that are now in storage at the Staten Island Institute of Arts and Sciences. These materials were recovered prior to extensive landfilling activities and the construction of a bulkhead that now surrounds Great Kills Harbor. The museum's collection includes chipped stone tools and ceramics. Based on this evidence, Milner suggested that the Crookes Point site likely functioned as a seasonal camp, though it was probably destroyed during mid-20th-century landfilling activities (Milner 1978).

Another relevant site is 08501.000163, located on the northern shoreline of Great Kills Harbor. This site appears in the survey files of the New York State Museum and Science Service and was originally reported by Parker (1922), who referred to it simply as "a shell heap." Milner concluded that any remaining evidence of the site was almost certainly buried beneath as much as forty feet of landfill brought into Great Kills Park during the 1940s (Milner 1978).

LPC Reports: A literature review and sensitivity assessment was conducted by the U.S. Army Corps of Engineers in connection with the proposed construction of two levees situated east and west of the Oakwood Beach Sewage Disposal Plant (Rakos 1994). The assessment determined that the area exhibited potential sensitivity for prehistoric occupation. Investigations conducted at the southern end of the Oakwood Beach alignment identified a Native American site, which was ultimately destroyed by private development (Rakos 1996).

Subsequent archaeological testing was performed by U.S. Army Corps archaeologists in the vicinity of the proposed westernmost levee alignment (Rakos 1996). A total of 15 shovel tests were excavated in the area bounded by Merkel Place, Dougdale Street, and Mill Road, with most tests encountering an undisturbed former plow zone. Four shovel tests yielded evidence of prehistoric activity in the form of lithic flakes and a worked core, with each test producing one artifact, and a second possible flake recovered from one of them. Two additional shovel tests, located approximately 200–300 feet southeast of the others, encountered fill deposits, with one pit exhibiting standing water. These latter tests may have been situated east of the area of higher ground.

In a separate investigation, three backhoe trenches were excavated at the eastern end of the Oakwood Beach Water Pollution Control Plant in preparation for the plant's planned expansion (Roberts and Ponz 1990). A previous analysis had indicated that this area should be considered sensitive for possible prehistoric remains (Roberts et al. 1990). However, the trenches encountered 7.5 to 9 feet (2.2–2.7 meters) of fill. Only one trench reached the underlying organic marsh deposits, and none of the trenches extended below those layers to reach the strata where prehistoric materials would be expected.

3.12.2 No Action/Future Without Project Condition

Adverse Effects

The No Action or No-Build Alternative was assessed in relation to the project's purpose and need. Under this scenario, no measures would be implemented to address future flood risks, 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. Archaeological sites within the study area face the risk of deterioration or destruction from coastal flooding and sea-level rise. Additionally, submerged cultural resources may be affected by underwater storm activity and alterations in seawater flow patterns associated with flooding and rising sea levels.

Cultural resources along the coast of Staten Island are increasingly threatened by environmental changes. The impact of recent extreme weather events underscores this vulnerability. For instance, Hurricane Sandy in 2012 significantly affected the New York–New Jersey Harbor region and caused widespread damage across 26 states. Floodwaters from the storm reached depths of up to nine feet in Staten Island, and other low-lying communities. Historic buildings, landmarks, and archaeological sites across Staten Island face growing threats from flooding, tidal erosion, and intensified storm activity as climate-related impacts escalate.

Beneficial Effects

No beneficial effects of no action are anticipated, as the area would continue to be vulnerable to coastal flood risk and damages. Therefore, this effects category is representative as no impact, with a corresponding Impact Score of 0.

3.12.2.1 Action Alternative

The Direct APE for the AE in Staten Island, New York is approximately 62.2 sq acres. This Direct APE intersects: 2 SHPO-cataloged archaeological sites (of which neither are listed in the NRHP, and have not been investigated sufficiently to determine their NR-eligibility); 0 NYSM archaeological areas; 2 above-ground historic properties that are not NR eligible (Tarlton Street

Bridge and the Wastewater Treatment Plant); 0 NR-listed individual properties; 0 NR-listed historic districts; 0 LPC landmarks; and a National Recreation Area (Great Kills Unit of the Gateway National Recreation Area) (Table 37). The NOAA ENC database lists 0 shipwrecks in the Oakwood Beach portion of the Direct APE. The SHPO data does not indicate there are any cemeteries in the APE.

Adverse Effects

Although the alternative includes a known archaeological site and is designated as sensitive for prehistoric archaeological resources, the site has been extensively modified by past development, fill, and infrastructure activities. As such, any intact archaeological deposits are expected to be deeply buried and isolated, reducing their vulnerability to disturbance from planned surface-level work. However, certain components of the project—such as tidal channel excavation and dune regrading, may involve limited subsurface impacts.

These potential effects warrant a low-to-moderate adverse effect rating for terrestrial archaeological resources during construction. No adverse effects are anticipated for submerged archaeological resources or above-ground historic structures. However, targeted archaeological monitoring or testing in higher sensitivity zones will be necessary to avoid unanticipated impacts and ensure compliance with Section 106 of the National Historic Preservation Act.

Beneficial Effects

The Oakwood Beach Alternative is expected to yield moderate beneficial impacts to cultural resources, particularly in the form of landscape restoration that enhances the cultural viewshed and reestablishes the ecological and visual character of the shoreline. The creation of a vegetative mosaic with native plants, the reintroduction of tidal channels, and dune restoration will help restore a historically and environmentally significant shoreline buffer. These improvements align with long-term resilience and sustainability goals and reflect traditional environmental knowledge systems tied to Indigenous and early land use patterns.

Additionally, the removal of non-native invasive species will improve the interpretive integrity of the site and support the area's role as a natural defense system, benefiting the larger NYNJHAT Study area and adjacent South Shore and Great Kills Park. These landscape-scale improvements provide lasting scenic, educational, and ecological value that reinforce the cultural identity of the region.

3.13 Cultural Resources Within Visual Impact Area (Indirect Effects)

The measures included in the study will enhance existing viewscapes, depending on location and scale. Construction of nature based measures may positively affect scenic byways, improve existing residential views, and/or increase access to historic coastal sites (USACE 2019). Aesthetic valuation, a judgement of value based on appearance of an object and emotional responses, of the public is ongoing and will be updated as stakeholder input is aggregated, but was not used to determine the preliminary impact rating.

Aerial photographs, LiDAR and field observations were analyzed for each alternative of visual effect, that will later be considered in determining the build alternative. This includes project visibility and viewsheds from neighbors and travelers as well the influence of topography, vegetation, and structures. An inventory of existing landscape character, viewers and visual quality is the baseline for this documentation. Characterization of visual quality of landscape

compositions based on intrinsic characteristics of natural, and existing roadway features; stakeholder values, public interest, real estate and scenic designations may be altered by the implementation of the proposed structural measures but will greatly manage the impact from coastal storms. Generally, implementing the alternatives could provide direct benefits by reducing the severity of damage to coastal sites and residences.

In support of the aesthetic viewshed analysis, USACE undertook a preliminary identification of known cultural resources that could be visually affected by the project in accordance with the New Jersey Historic Preservation Office's (2004) Guidelines for the Preparation of Cultural Resource Management Archaeological Reports; New York Archeological Council's (NYAC) Standards for Cultural Resources Investigations and the Curation of Archeological Collections in New York State; New York State Office of Parks, Recreation, and Historic Preservation's (2005) State, Historic Preservation Office Phase I Archaeological Report Format Requirements; and the Secretary of the Interior's Standards and Guidelines for Archaeological Documentation (48FR4473437), and the USACE NYNJHATS OSE Report (2022). Visual analysis, as a component of the NEPA and Section 106 analyses, includes a broad look at the potential impacts to historic properties. By definition, a visual effect occurs whenever a proposed undertaking will be visible from an historic property. The mere existence of a visual effect does not automatically imply that the effect is adverse.

Background research for the project included a review of existing cultural resource reports, management plans, archaeological site files, historic maps, and nominations to the National Register of Historic Places (NRHP). The analysis takes into consideration the resource's geographical distance and the effect of topography on whether the Alternative is visible from historic resources. A visibility analysis that takes the built environment and vegetation into account are beyond the scope of the Study. Additional discussion and evaluation of the visual impacts from each Alternative is available in the following Sections.

Measures proposed for the AE will not involve the construction of structures that have a potential to indirectly affect historic properties, there are no historic properties impacted by the Action Alternative, and will not alter the visible environment (i.e., setting) of those resources. For this study, the visual impact study area (Indirect APE) includes those places within one mile (1.6 km) of proposed measures for the alternative that are in the potential viewshed (based on topography). This Visual Impact Area, or Zone of Visual Influence (ZVI), encompasses parts of coastal Staten Island, New York City. As of this writing, this preliminary visual impact analysis is an initial screening of impacted historic properties and will be refined in subsequent iterations.

Additional visual assessment for the measures proposed at Oakwood Beach was deemed unnecessary because the design elements do not introduce visual changes that rise to the threshold of an adverse effect under Section 106 criteria. An adverse visual effect occurs only when a new element added to the landscape diminishes the aspects of a property's significance or integrity, such as its historic setting, that contribute to its eligibility for listing in the State or National Registers of Historic Places (S/NRHPs).

The Action Alternative, which includes elements such as vegetative plantings, grading, and berms with naturalistic contours, are compatible with the existing coastal landscape. These measures do not obstruct significant views to or from eligible or listed historic properties, nor do they introduce visual elements that are out of scale, incompatible, or in stark contrast with the surrounding character. Because the proposed nature-based components are designed to blend with the natural setting and do not diminish the visual integrity or appreciation of any known

historic resource in the area, neither adverse aesthetic nor obstructive effects are anticipated. Accordingly, based on established guidance and definitions of visual impacts, further detailed visual analysis was not required for this portion of the undertaking.

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US Army Corps
of Engineers®
New York District

NEW YORK-NEW JERSEY HARBOR AND TRIBUTARIES

COASTAL STORM RISK MANAGEMENT PROJECT

AE Programmatic Agreement

July 2025

PROGRAMMATIC AGREEMENT
AMONG
THE U.S. ARMY CORPS OF ENGINEERS, NEW YORK DISTRICT,
THE NEW YORK STATE HISTORIC PRESERVATION OFFICE,
THE NEW JERSEY STATE HISTORIC PRESERVATION OFFICE AND
THE NATIONAL PARK SERVICE

REGARDING THE NEW YORK – NEW JERSEY HARBOR AND TRIBUTARIES
COASTAL STORM RISK MANAGEMENT PROJECT

ACTIONABLE ELEMENTS
EAST RISER, HARLEM RIVER, and OAKWOOD BEACH

WHEREAS, the US Army Corps of Engineers, New York District (District) is proposing to undertake early, Actionable Elements which are near-term recommendations for potential construction authorization, associated with comprehensive measures to manage coastal storm risk and minimize impact throughout the New York Metropolitan Area, including the most densely populated city in the United States, and the six most populated cities in New Jersey. The shorelines of some of the New York New Jersey Harbor and Tributaries Coastal Storm Risk (NYNJHAT) study area are characterized by low elevation areas, developed with residential and commercial infrastructure and are subject to tidal flooding during storms. The NYNJHAT Actionable Elements consist of three distinct areas: East Riser, Meadowlands, NJ, Harlem River, Manhattan, NY and Oakwood Beach, Staten Island, NY (Project); and

WHEREAS, the comprehensive NYNJHAT study effort was authorized by the River and Harbor Act of 14 July 1960, and subsequently modified in accordance with Section 31 of the Water Resources Development Act of 1974 and Sections 103, 502 and 934 of the Water Resources Development Act of 1986 (P.L. 99-662), and Public Law 113-2; and

WHEREAS, in January 2015, USACE completed the North Atlantic Coast Comprehensive Study (NACCS), which identified high-risk areas on the Atlantic Coast for warranting further investigation of flood risk management solutions, and the NYNJHAT focus area was one of the focus areas identified to investigate coastal flood risk within the New York-New Jersey Harbor region; and

WHEREAS, the National Environmental Policy Act (NEPA) of 1969 requires federal agencies, including the District, to consider the potential environmental impacts of their proposed actions and any reasonable alternatives before undertaking a major federal action, as defined by 40 CFR 1508.18, therefore the District initially drafted an integrated Feasibility Report and Environmental Impact Statement (FR/EIS) which will be conducted in two stages or tiers; Tiering, which is defined in 40 CFR 1508.28, is a means of making the environmental review process more efficient by allowing parties to “eliminate repetitive discussions of the same issues and to focus on the actual issues suitable for decision at each level of environmental review” (40 CFR 1502.20) with Tier 1 as a broad-level review, and Tier 2 consisting of subsequent specific detailed reviews; and

WHEREAS**,** the draft FR/EIS presented the formal Tentatively Selected Plan, which consisted of: integrated shoreline based measures (SBMs) along with the Arthur Kill, Kill Van Kull, Jamaica

Bay, Newtown Creek, Gowanus Canal, and Flushing Creek storm surge barriers. The required SBMs include managing risk reduction for the New Jersey Upper Bay and Hudson River shoreline from Liberty State Park to Hoboken, New York City West Side shoreline from Brooklyn Bridge to Pier 78, East Harlem shoreline from Carl Schurz Park to Washington Heights, the Red Hook shoreline and the Long Island City-Astoria shoreline from Astoria Park to Ed Koch Queensboro Bridge. To mitigate the residual flood risk, residual risk features (RRFs) are proposed along the shorelines of the Upper Bay, the Arthur Kill region, Jamaica Bay, and the Hackensack and Passaic Rivers. Induced flooding is expected to occur in portions of the East River and Harlem River and on the flood side of the Jamaica Bay storm surge as a result of the presence of the above stated storm surge barriers, thus, induced flooding features (IFFs) are suggested to be placed in these regions. A schematic concept for the TSP and the referenced reaches is shown in Appendix A.

WHEREAS, following development of the TSP Milestone and release of the draft FR/EIS, the District was directed develop a **Draft Interim Response Actionable Elements Integrated Feasibility Report and Environmental Assessment** focusing on investigating coastal storm risk management measures in the study area consistent with the study authority, which may be put forward to Congress for consideration in a Water Resources Development Act (WRDA). Such opportunities include the investigation of Actionable Elements, as well as a framework for a comprehensive regional plan (Comprehensive Plan Framework), which will highlight the types of measures that could be funded to meet the NYNJHAT study's planning objectives.

WHEREAS, the Actionable Elements, heretofore referred to as the Project focus on addressing coastal storm risk through a combination of measures in three distinct areas; East Riser, Meadowlands, NJ (channel, culvert, and bridge modifications), Harlem River, Manhattan, NY (floodwall or seawall) and Oakwood Beach, Staten Island, NY (nature-based solutions); and

WHEREAS**,** the District has determined that the Project constitutes an undertaking, as defined in 36 C.F.R. § 800.16(y), and therefore, is subject to Section 106 of the National Historic Preservation Act of 1966 (NHPA), 54 U.S.C. § 306108; and

WHEREAS**,** the District is the Lead Federal Agency for compliance with Section 106 of the NHPA for this Project pursuant to 36 C.F.R. § 800.2(a)(2); and

WHEREAS, Cooperating Agencies include the U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, U.S. Coast Guard, National Oceanic and Atmospheric Administration National Marine Fisheries Service, and the National Park Service(NPS), while the Federal Emergency Management Agency is a Participating Agency; and

WHEREAS, the non-federal sponsors are the New Jersey Department of Environmental Protection (NJDEP) and New York State Department of Environmental Conservation (NYSDEC), in partnership with the New York City Office of Recovery and Resiliency (NYCORR); and

WHEREAS, the Project minimizes exacerbating riverine/fluvial flooding, covered under the Flood Risk Management (FRM) mission of USACE, and includes measures to alleviate any induced flooding with measures like levees, floodwalls, and non-structural (TBD) and natural and nature-based features (TBD) which are also included in the Project; and

WHEREAS, the District has determined that the Project's APE includes the area of construction, non-structural measures, and indirect impacts on the viewshed during the feasibility level analysis of the Project (see depiction in **Attachment A** to this Agreement); the APE considers the following impacts: 1) construction effects, to include demolition, vibration, and auditory effects, will be considered within a coordinated buffer of either side of proposed measures, the living shoreline, and other constructed features (e.g. pump stations and surge gates); 2) effects of non-structural measures will be considered at each location; potential visual impacts will be considered from the perspective of cultural resources within the APE consisting of 3) the exterior viewshed (historic properties that view an Actionable Element, and 4) the interior viewshed (historic properties located with a view of an Actionable Element); and

WHEREAS**,** numerous archaeological and/or architectural resource surveys have been conducted within the APE and background research conducted through New York's and New Jersey's online cultural resources information system (CRIS and LUCY), the New York City Landmark Preservation Commission mapper, and the National Park Service's (NPS) National Register Database, documented the presence of approximately 26 previously identified historic properties within 100 meters of the Project, while the preliminary viewshed analysis documented approximately 2,050 previously identified historic properties within 1 mile of the Project where Project structures will potentially be visible, detailed in **Attachment B** to this Agreement; and

WHEREAS**,** the District has determined that the undertaking may have an adverse effect on historic properties which are listed or eligible for listing in the National Register of Historic Places (NRHP), which the agency is required to take into account pursuant to Section 106 of the NHPA; and

WHEREAS, schedule and budgetary constraints, including Section 1001 of the Water Resources Reform and Development Act (WRRDA) of 2014 (Public Law 113-121) (limiting duration and cost of Corps of Engineers final feasibility reports), limit the detailed engineering design of the Project features during the feasibility phase such that the District cannot conduct all of the necessary surveys to fully identify and evaluate historic and cultural resources, fully determine adverse effects of the Project on historic properties, or fully avoid, minimize or mitigate those adverse effects, prior to completing the appropriate NEPA documentation for the feasibility phase; and

WHEREAS**,** because implementation of the Preconstruction, Engineering and Design (PED) phase (where detailed engineering design will occur) is contingent on either authorization by Congress or the Secretary of the Army's determination that the Project is justified, appropriation of funds by Congress, and execution of a Design Agreement (DA) between the NJDEP and NYSDEC, in partnership with NYCORR, the District may implement PED in phases to the extent that design and/or construction authority is phased and funds are appropriated, so that efforts to identify and evaluate historic properties, determine effects from Project features, identify appropriate avoidance, minimization or mitigation, and conduct related consultation may occur over a period of multiple years as the design for each Project construction phase and/or feature is finalized; and

WHEREAS, the District recognizes that significant historic districts and properties in and around the Project area are an integral part of the community's life and character; and preservation of this irreplaceable heritage is in the public interest. The knowledge and identification of New York and New Jersey's historic resources, together with the goal of preserving the integrity of these resources, will improve the planning and execution of the Project. The District commits to

considering the avoidance and minimization of adverse effects to historic properties in its design of the Project; and

WHEREAS, the District has determined that as Project features are further designed during the PED phase of the Project, the APEs may be further refined, cultural resources surveys to be conducted may identify additional historic properties within the APEs, and effects on historic properties may be further identified; and

WHEREAS, the District intends to comply with Sections 106 and 110(f) of the NHPA for the undertaking, and while it has complied to the extent practicable in an effort to avoid, minimize, or mitigate adverse effects on historic properties and minimize harm to Historic Properties during the feasibility phase of the Project, recognizes that there are potential effects on historic properties which cannot be fully determined prior to approval of this complex undertaking; and

WHEREAS, the District intends to ensure compliance for all NYNJHATS phases and features with Sections 106 and 110(f) of the NHPA for the undertaking through the execution and implementation of this Programmatic Agreement (PA), and future PAs for other elements associated with the Comprehensive Plan, pursuant to 36 C.F.R. § 800.14(b)(3); and

WHEREAS, in accordance with 36 C.F.R. § 800.6(a)(1) and § 800.10(a), the District has notified the Advisory Council on Historic Preservation (ACHP) of its intension to develop this Agreement, and the ACHP has chosen to participate/ declined to participate and will remain a Consulting Party, in the consultation pursuant to 36 C.F.R. § 800.6(a)(1)(iii); and

WHEREAS, the New York State Historic Preservation Office (NYSHPO), has concurred in the use of a Programmatic Agreement and in being a Signatory to this Agreement; and

WHEREAS, the New Jersey Historic Preservation Office (NJHPO), has concurred in the use of a Programmatic Agreement and in being a Signatory to this Agreement; and

WHEREAS, the New Jersey Department of Environmental Protection (NJDEP) and New York State Department of Environmental Conservation (NYSDEC), in partnership with the New York City Office of Recovery and Resiliency (NYCORR) are the non-Federal sponsors for this project, and the District has invited them to sign this Agreement as an Invited Signatory and they have chosen to participate/ declined to participate and will remain a Consulting Party; and

WHEREAS, any measure to be constructed within NPS Land or land managed by the NPS, mutual acceptability between the Department of Interior and the Department of Army is required pursuant to the Gateway National Recreation Area (GATE) enabling legislation (P.L. 92-592, 1972); and

WHEREAS, the District has invited the NPS to sign this Agreement as a Signatory, in accordance to P.L. 92-592, 1972, 36 C.F.R. § 800.10(c), as a mutually acceptable plan between NPS Interior Region 1 Office, and the District requires concurrence between both parties, support of Project objectives, minimization of impacts to NPS cultural, natural and recreational resources, and mitigation for all unavoidable impacts to NPS resources, and the NPS has elected to participate; and

WHEREAS, in accordance with 36 C.F.R. § 800.6(c)(3), the District is consulting with the, the Delaware Nation, the Stockbridge Munsee, the Delaware Tribe of Indians, regarding the effects

of the undertaking on historic properties, and has invited these Tribes to sign this Agreement as Invited Signatories or Concurring Parties;

WHEREAS, in accordance with 36 C.F.R. § 800.6(c)(3), the Delaware Nation has responded and elected to participate as a Concurring Party in this Agreement; and

WHEREAS, in accordance with 36 C.F.R. § 800.6(c)(3), the Stockbridge Munsee has responded and elected to participate as a Concurring Party in this Agreement; and

WHEREAS, the District has consulted with the NYC Landmarks Preservation Commission (LPC) regarding the effects of the undertaking on historic properties and the District has invited them to sign this Agreement as a Signatory and they have elected to participate; and

WHEREAS, the District has consulted with local, county and state historical societies regarding the effects of the undertaking on historic properties and has invited them to each sign this Agreement as a Concurring Party and they have/ have not elected to participate each as a Concurring Party; and

WHEREAS, the District has consulted and will continue to consult with the NYSHPO, NJHPO, the Delaware Nation, the Stockbridge Munsee, the Delaware Tribe of Indians (federally-recognized tribes), the NPS, and municipal and county historic societies, and other appropriate Consulting Parties to define and implement process for taking into consideration the effects of the Project on historic properties; and

WHEREAS, the NYSHPO, NJHPO, NPS, ACHP, in partnership with NJDEP and NYSDEC, NYCORR, Interested Tribes, the LPC, and other interested parties are hereinafter collectively referred to as Consulting Parties; and

WHEREAS, the District has, and will continue to, consult with the NJSHPO, the NYSHPO and LCP in regard to portions of the APE within their relevant areas of responsibility and jurisdiction: and

WHEREAS, in accordance with 36 C.F.R. § 800.2(d) the District is soliciting public comment on the Project through the release of the draft Feasibility Report/Environmental Assessment (EA) for a period of 30 days, and through a series of in person and virtual informational meetings with stakeholders to share information about the project and to discuss the District's ongoing efforts to evaluate the project's potential to affect cultural resources; and

NOW, THEREFORE, the District, New York SHPO, New Jersey HPO, and NPS (hereinafter collectively referred to as Signatories) agree that the Undertaking shall be implemented in accordance with the following stipulations in order to take into account the effects of the Project on cultural resources and undertake appropriate planning and actions with regard to resources and associated with GATE.

STIPULATIONS

I. IDENTIFICATION AND EVALUATION

The District shall ensure that the following measures are carried out:

A. The New York District shall carry out cultural resources surveys for Project features that are advanced past feasibility phase to identify significant cultural resources within the APE. Survey methodology shall be tailored to the unique environment of the restoration site to identify resources and will consider previous survey results and consultation comments when designing the surveys. Consultation shall be carried out with the appropriate SHPOs depending on whether the site or site(s) are within the States of New York or New Jersey. If a survey is addressing multiple sites located within both states, both the NYSHPO and the NJSHPO shall be consulted.

1. The District shall consult with the NPS and the LPC in regards to only portions of the APE within their respective areas of responsibility and the District shall require their coordination and concurrence on any proposed identification and evaluation efforts, and any steps to avoid, minimize or mitigate those effects for actions proposed within their respective land or areas of responsibility and any eligibility determinations, see Stipulation VII.B.d.

2. The NPS must be consulted on each proposed cultural resource survey/evaluation on NPS managed land, and the necessary permits (Special Use Permit, Archaeological Resources Protection Act, etc.) must be obtained prior to initiating any work.

B. Prior to the initiation of construction-related activities which may affect historic properties, the District, in consultation with the relevant SHPO(s), NPS, LPC and other interested parties as appropriate, shall identify and evaluate:

1. Archaeological Sites

a. The District shall ensure that archaeological surveys within the uninvestigated portions of the APE are conducted in a manner consistent with the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation (48 FR 44720-23) and guidelines set forth by the SHPOs including the New Jersey Historic Preservation Office Requirements for Archaeological Survey Reports - Standards for Report Sufficiency (N.J.A.C. 7:4-8.5), New Jersey Historic Preservation Office Requirements for Phase I Archaeological Survey at N.J.A.C. 7:4-8.4, the New York Archaeological Council's Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State (1994, adopted by NYSHPO in 1995), the NYSHPO's 2005 Phase I Archaeological Format Requirements, and take into account the National Park Service publication The Archaeological Survey: Methods and Uses (1978) and the statewide historic contexts developed by the SHPOs.

b. The scopes of work and survey reports shall be submitted to the appropriate SHPO(s), and other Consulting Parties, as appropriate, for review and comment.

2. Traditional Cultural Properties.

a. The District shall ensure that future surveys within the uninvestigated portions of the APE include procedures to identify traditional cultural properties (TCPs) and to consult with the Delaware Nation, the Stockbridge Munsee, and the Delaware Tribe of Indians,

(federally-recognized tribes) and other affected parties in accordance with the guidelines provided by National Park Service Bulletin 38, Guidelines for Evaluating and Documenting Traditional Cultural Properties and the U.S. Army Corps of Engineers Tribal Consultation Policy (2013).

b. In the event that the the Delaware Nation, the Stockbridge Munsee, and the Delaware Tribe of Indians, (federally-recognized tribes), or another affected group contacts the District regarding its recognition of a traditional cultural property, located within the APE, the District shall notify the appropriate SHPO, THPO and the ACHP to initiate discussions to consider whether the property is a traditional cultural property that meets the Criteria.

c. The identification of TCPs and Archaeological Sites on NPS managed land will require concurrence with Native Nations and will require further consultation. In case of disagreement regarding potential resolution of adverse effects, see Stipulation II.

3. Buildings and Structures

a. The District shall ensure that surveys are conducted for buildings and structures in the APE in a manner consistent with the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation (48 FR 44720-23), and in New Jersey, the New Jersey Historic Preservation Office's l999 *Guidelines for Architectural Survey*, and take into account the statewide historic contexts developed by the SHPO(s). The Scope of Work and survey report will be consistent with the guidelines set forth by the SHPOs and shall be submitted to the appropriate SHPO(s), the ACHP, and other Consulting Parties for review.

b. The District, in consultation with the appropriate SHPO(s), the ACHP, and other Consulting Parties, shall identify and evaluate buildings and structures that are located adjacent to listed or eligible NRHP historic districts to determine whether such properties should be considered as part of the historic district or an expanded district.

4. Historic Landscapes and View Sheds

a. The District shall consult with the appropriate SHPO(s) and other Consulting Parties, including local historical societies, to identify and evaluate historic landscapes and viewsheds located within the APE. The District shall consult National Park Service Bulletins 18, How to Evaluate and Nominate Designed Historic Landscapes, and 30 Guidelines for Evaluating and Documenting Rural Historic Landscapes, National Park Service Preservation Brief 36, Protecting Cultural Landscapes, and other publications and materials made available by the SHPO(s), like the New Jersey Historic Preservation Office's l999 *Guidelines for Architectural Survey,* to assist in defining the criteria that should be applied to such properties.

b. The objective in conducting the surveys is to identity NRHP-listed or eligible historic landscapes and affected viewsheds within the project area that may be adversely

affected by the Project, and to determine whether they meet the NRHP criteria set forth in 36 CFR Part 60.4.

C. The District shall ensure that qualified professionals meeting the National Park Service professional qualifications for the appropriate discipline [National Park Service Professional Qualification Standards, Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (48 FR 44738-39)] are used to complete all identification and evaluation plans related to this undertaking, to include geomorphological, palynological, and archaeological surveys and testing, and documentation.

D. The District, the SHPO(s), and all other Consulting Parties shall consider the views of the public and interested parties, including local historic preservation groups, in completing its identification and evaluation responsibilities.

E. The District shall maintain records of all decisions it makes related to the NRHP eligibility of properties.

F. Application of Criteria:

1. The District, in consultation with the appropriate SHPO, and other Consulting Parties, shall evaluate historic properties using the Criteria established for the NRHP [36 CFR 800.4(c)(1)]:

a. If the District, the SHPO(s), and the other Consulting Parties agree that the Criteria apply or do not apply, in evaluating the NRHP eligibility of a property, the property shall be treated accordingly for purposes of this PA.

b. If the District, the SHPO(s), and other Consulting Parties disagree regarding NRHP eligibility, prior to the start of any project-related work at the site or in the vicinity of the property, the District shall obtain a formal Determination of Eligibility (DOE) from the Keeper of the National Register (Keeper), National Park Service, whose determination shall be final.

2. The District shall ensure that the identification and evaluation of historic properties that may be affected by each phase of the Undertaking is completed prior to the initiation of any formal action by the District including rehabilitation, relocation, demolition, etc.

3. Any changes to the project design that may have the potential to affect historic properties or extends beyond the current APE will be submitted to the Consulting Parties for review and comment.

4. If a property is determined to be eligible for the National Register, the District will consult with the NJSHPO, NYSHPO, NPS, LPC, and the appropriate Consulting

Parties to resolve the adverse effects in accordance with Stipulation II below.

II. RESOLUTION OF ADVERSE EFFECTS

A. If the District, in consultation with the appropriate SHPO(s), and other Consulting Parties, as appropriate, determines that the Project will have an adverse effect on historic properties, the District shall consult with the appropriate Consulting Parties and signatories, pursuant to 36 CFR Part 800.6, to determine how best to resolve adverse effects and document the proposed resolution.

B. The District shall invite the ACHP to participate in consultation when:

1. The District and SHPO determine that an agreement or treatment plan cannot be reached;

2. A National Historic Landmark is involved;

3. Human remains have been identified; or

4. There is widespread public interest in a historic property or properties.

C. Once there is agreement on how adverse effects will be resolved, the District will develop treatment plans that will identify the activities to be implemented to resolve adverse effects. The SHPO(s) and the appropriate signatories and other Consulting Parties, if identified, will be provided with copies of each treatment plan for review and comment. The District shall revise plans to address comments and recommendations provided by the Consulting Parties. The District shall ensure that treatment plans are implemented by the District or its representative(s).

1. Treatment plans will include a description of the historic property, the adverse effect to the historic property, and the treatment to mitigate the adverse effect to the historic property.

2. Draft treatment plans will be reviewed by the signatories and the applicable invited signatories. The signatories will have 30 calendar days to review the draft treatment plan and provide comments to the District.

3. The District will resolve all comments received. Once all comments have been agreed upon, a final treatment plan will be sent for signature to the signatories and applicable invited signatories.

II. PUBLIC INVOLVEMENT AND OUTREACH

A. The District shall inform the public of the existence of this PA and the District's plan for meeting the stipulations of the PA. Copies of this agreement and relevant documentation prepared pursuant to the terms of this PA shall be made available for public inspection via the District's website. Information regarding the specific locations of terrestrial and submerged archaeological sites, including potential wreck areas, will be withheld in accordance with the Freedom of Information Act and National Register Bulletin No. 29, if

it appears that this information could jeopardize archaeological sites. Any comments received from the public related to the activities identified by this PA shall be taken into account by the District.

B. The District shall develop publicly accessible information about the cultural resources and historic properties investigations for the Undertaking in the form of brief publication(s), exhibit(s), or website.

III. CURATION

A. Any collection resulting from the investigations undertaken as part of the agreement are the property of the landowner at the time the collection was made. The District does not retain ownership of any collection removed from land(s) it does not own.

B. The District shall ensure that all collections resulting from the identification and evaluation of surveys, data recovery operations, or other investigations pursuant to this PA are maintained in accordance with 36 CFR Part 79 until the collection is turned over to the landowner or other entity. Minimally, the District will ensure that analysis is complete and the final report(s) are produced and accepted by the New York and NJHPO before the collection is provided to the landowner.

C. The District shall be responsible for consulting with landowners regarding the curation of collections resulting from archaeological surveys, data recovery operations, or other studies and activities pursuant to this agreement. The District shall coordinate the return of collections to non-federal landowners. If landowners wish to donate the collection, the District, in coordination with the New York SHPO and NJHPO, determine an appropriate entity to take control of the collection.

D. The District shall be responsible for the preparation of federally-owned collections and the associated records and non-federal collections donated for curation in accordance with the standards of the curation facility.

IV. UNANTICIPATED DISCOVERY

A. The following language shall be included in construction plans and specifications:

"When a previously identified cultural resource, including but not limited to archaeological sites, shipwrecks and the remains of ships and/or boats, standing structures, and properties of traditional religious and cultural significance to the the Delaware Nation, the Stockbridge Munsee, and the Delaware Tribe of Indians (federally-recognized tribes) are discovered during the execution of the Project, the individual(s) who made the discovery shall immediately secure the vicinity and make a reasonable effort to avoid or minimize harm to the resource, and notify the Project's Contracting Officer's Representative (COR) and the District. All activities shall cease within a minimum of 50 feet from the inadvertent discovery (50-foot radius 'no work' buffer) until authorized by the District and the Project COR.

B. If previously unidentified and unanticipated properties are discovered during Project activities, the District shall cease all work in the vicinity of the discovery until it can be evaluated in accordance with 36 CFR Part 800.13 "Post Review Discoveries". Upon

notification of an unanticipated discovery, the District shall implement any additional reasonable measures to avoid or minimize effects to the resource. Any previously unidentified cultural resource will be treated as though it is eligible for the NRHP until such other determination may be made.

C. The District shall immediately notify the NYSHPO, NJHPO, LPC and NPS for unanticipated discoveries within their respective boundaries, as well as the Delaware Nation, the Stockbridge Munsee, and the Delaware Tribe of Indians (federally-recognized tribes), within 48 hours of the finding and request consultation to determination the nature of the find, the National Register eligibility and the assessment and resolution adverse effects, if identified.

1. Pursuant to [16 U.S.C. 470cc (a)], the unanticipated discovery of a cultural resource on land managed by the NPS will also require the immediate notification of the GATE Superintendent and the COR, who will coordinate with the NPS and other Consulting Parties in order to facilitate a timely resolution in tandem to the requirements outlined Stipulation IV.

D. If it is determined the unanticipated discovery is not eligible for the National Register, in consultation and concurrence with the Consulting Parties, then the suspension of work in the area of the discovery will end.

E. If it is determined that the cultural resource is eligible for the National Register, then the suspension of work will continue, and the District, in consultation with the NYSHPO, NJHPO, LPC and NPS for unanticipated discoveries within their respective boundaries, as well as the Delaware Nation, the Stockbridge Munsee, and the Delaware Tribe of Indians (federally-recognized tribes), will determine the actions to avoid, minimize, or mitigate adverse effects to the historic property and will ensure that the appropriate actions are carried out.

F. If there is a disagreement on the appropriate course of action to address an unanticipated discovery or effects to an unanticipated discovery, then the District shall initiate the dispute resolution process set forth in Stipulation XII below.

G. Inadvertent discovery under section 3 (d) of NAGPRA and the treatment of human remains is governed by Stipulation V.

V. DISCOVERY OF HUMAN REMAINS/FUNERARY OBJECTS

A. If any human remains and/or grave-associated artifacts are encountered during any of the investigations federal lands, including but not limited to land managed by the NPS, the District shall follow the Native American Graves Protection and Repatriation Act (PL 101-601) and its implementing regulations. All other project features not located on federal land will follow the NYSHPO Human Remains Discovery Protocol (2018; see Appendix D) and, as appropriate, develop a treatment plan for human remains that is responsive to the ACHP's Policy Statement on Human Remains" (September 27, 1988), and , US Army Corps of Engineers, Policy Guidance Letter No. 57 (1998) Indian Sovereignty and Government-to-Government Relations with Indian Tribes.

B. In the event that human remains as burials, fragmentary remains, or any associated

funerary objects, sacred objects, and objects of cultural patrimony are encountered, the following actions should be taken:

"In the event that human remains as burials or fragmentary remains are found, the following actions should be taken:

1. The Contractor will stop work in the general area of the discovery immediately and report the discovery to the Contracting Officer/Contracting Officer Representative (KO/COR), who will call the appropriate New York or New Jersey Police Department at 911 and the NY Office of the Chief Medical Examiner and direct the call to the Forensic Anthropology Unit or the NJ **Office of the Chief State Medical Examiner.**
2. The KO/COR will inform the District Archaeologist who, as appropriate, will call the New York Landmarks Preservation Commission, the New York State Historic Preservation Office, the New Jersey State Historic Preservation Office and the relevant federally-recognized Tribes as appropriate.
3. If, upon inspection by the appropriate legal authorities, the remains are determined to be a criminal matter and not archaeological, the District will ensure that appropriate legal and contractual requirements are followed.
4. If the remains are determined to be archaeological, the relevant State Archaeologist has jurisdiction to determine the appropriate treatment and options for the remains following additional coordination with the Consulting Parties.
5. At all times, the Contractor will treat human remains with the utmost dignity and respect.
6. The Contractor will secure and protect the general area of the discovery (not less than fifty feet in all directions from the location of the discovery) from damage, vandalism, and disturbance until released by the KO/COR.
7. The Contractor will leave human remains and/or associated artifacts in place and not disturb them. The Contractor will not collect skeletal remains or materials associated with the remains. Any displaced remains or those found after excavation will be turned over to the KO/COR immediately.
8. The Contractor will not conduct any activities in the vicinity of the site until these steps have been completed and the site has been released by the KO/COR.
9. The Contractor will continue to protect and secure the area until the site is released by the KO/COR.
10. The District will coordinate with all Consulting Parties, and other Interest Parties or descendent communities to develop a treatment or avoidance plan consistent with Stipulation IV"

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C. The following language, in accordance with [43 CFR 10.2 (g)(4)], shall be included in the construction plans and specifications for Project features located on land managed by the NPS:

"In the event that human remains as burials, fragmentary remains, or any associated funerary objects, sacred objects, and objects of cultural patrimony are encountered, the following actions should be taken:

1. The Contractor will stop work in the general area of the discovery immediately and report the discovery to the Contracting Officer/Contracting Officer Representative (KO/COR), who will notify the GATE Superintendent who will then notify the appropriate

authorities once jurisdiction is situationally established after the Stop Work order is made.

2. The KO/COR and Superintendent will inform the District archaeologist who, as appropriate, will notify the New York Landmarks Preservation Commission, the New York State Historic Preservation Office, the New Jersey State Historic Preservation Office and the relevant federally-recognized Tribes.
3. If, upon inspection by the appropriate legal authorities, the remains are determined to be a criminal matter and not archaeological, the District will ensure that appropriate legal and contractual requirements are followed.
4. If the remains are determined to be archaeological, the GATE Superintendent has jurisdiction to determine the appropriate treatment and options for the remains following additional coordination with the Consulting Parties.
5. At all times, the Contractor will treat human remains with the utmost dignity and respect.
6. The Contractor will secure and protect the general area of the discovery (not less than fifty feet in all directions from the location of the discovery) from damage, vandalism, and disturbance until released by the KO/COR.
7. When human remains/funerary objects are encountered, all activity that might disturb the remains shall not resume until authorized by the GATE Superintendent, District Archaeologist, and the relevant federally-recognized Tribes.
8. The Contractor will leave human remains and/or associated artifacts in place and not disturb them. The Contractor will not collect skeletal remains or materials associated with the remains. Any displaced remains or those found after excavation will be turned over to the KO/COR immediately.
9. The Contractor will not conduct any activities in the vicinity of the site until these steps have been completed and the site has been released by the KO/COR.
10. The Contractor will continue to protect and secure the area until the site is released by the KO/COR.
11. The Corps will coordinate with all Consulting Parties, Interested Tribe(s), and other Interest Parties or descendent communities to develop a treatment or avoidance plan consistent with Stipulation IV"

VI. PROFESSIONAL QUALIFICATIONS AND STANDARDS

A. The District shall ensure that qualified professionals meeting the National Park Service professional qualifications for the appropriate discipline [National Park Service Professional Qualification Standards, Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (48 FR 44738-39)] are used to complete all identification and evaluation plans related to this undertaking, to include remote sensing surveys, underwater investigations, historic structure inventory and documentation.

B. All historic structures surveys carried out pursuant to this PA will be undertaken in accordance with the standards and guidelines of the NYSHPO, NJHPO, the LPC and the Secretary of the Interior's *Standards for the Treatment of Historic Properties* (36 CFR Part 68) which takes into account the statewide historic contexts developed by the NJHPO and NY SHPO. The survey will be conducted following consultation with the NJHPO, NY SHPO, LPC and relevant historic and preservation groups and will be consistent with the appropriate guidelines for architectural surveys as identified by the

Consulting Parties.

C. All archaeological investigations carried out pursuant to this PA will be undertaken in accordance with the New York State Archaeological ACHP's Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State (1994) and Cultural Resources Standards Handbook (2000), the NYSHPO Archaeological Report Format Requirements (2005), and the Secretary of the Interior's *Standards for the Treatment of Historic Properties* (36 CFR Part 68), and the New Jersey Historic Preservation Office Guidelines for Phase I Archaeological Investigations: Identification of Archaeological Resources (N.J.A.C. 7:4-8.4), the New Jersey Historic Preservation Office Requirements for Archaeological Reports – Standards for Report Sufficiency (N.J.A.C. 7:4-8.5)

D. For submerged portions of the APE, the archaeological survey should be designed with input from a qualified marine archaeologist and specialists in other fields as appropriate (e.g., geology and geomorphology), in a manner that is capable of identifying the precontact and historic period site types that are present offshore New Jersey and New York. The Report and analyses presented therein should be prepared by a qualified marine archaeologist and specialists in other fields as appropriate (e.g., geology, geomorphology). A qualified marine archaeologist must meet the Secretary of the Interior's Professional Qualification Standards (48 F.R. 44738-44739) and have experience in conducting high-resolution geophysical surveys of submerged environments and processing and interpreting the resulting data for archaeological potential.

VII. ADMINISTRATIVE TERMS

A. REPORTING

1. The District shall provide a summary report to the Consulting Parties by February 1st of each year detailing work undertaken pursuant to this PA in the preceding calendar year (Appendix E). This report will include any scheduling changes, problems encountered, project work completed, PA activities completed, and any objections and/or disputes received by the District in its efforts to carry out the terms of this PA. Copies of the summary report with be posted in the District project website.

2. Following authorization and appropriation, the District shall coordinate a meeting or equivalent with the signatories to be held annually on a mutually agreed upon date to evaluate the effectiveness of this PA and discuss activities carried out pursuant to this PA during the preceding year and activities scheduled for the upcoming year.

B. COORDINATION, CONSULTATION, AND REVIEW PERIODS

1. The District will consult with the NJSHPO, the NYSHPO, the NPS, the LPC and all other relevant Consulting Parties in regard to portions of the APE within their relevant areas of responsibility and jurisdiction unless otherwise formally requested by the Consulting Party.

2. National Park Service Land:

a. For all activities involving properties and/or investigations within the bounds of land held by the National Park Service, the District will obtain the required National Park Service permits to complete investigations.

b. The District will provide the draft and final reports pertaining to the investigations within the respective boundaries bounds of National Park Service Land, the NYSHPO, NJHPO, NPS, the Delaware Nation, the Stockbridge Munsee, and the Delaware Tribe of Indians (federally-recognized tribes), for review.

c. Coordination and consultation on eligibility determinations, the need for additional investigations within National Park Service Land based on results of completed investigations will include, where relevant, the NYSHPO, NJHPO, NPS, the Delaware Nation, the Stockbridge Munsee, and the Delaware Tribe of Indians (federally-recognized tribes).

d. All elements of the Project within the boundaries of, or impacting cultural resources of the NPS must be mutually acceptable to the Department of the Interior and the Department of the Army (P.L. 92-592, 1972):

   "The authority of the Secretary of the Army to undertake or contribute to water resource developments, including shore erosion control, beach protection, and navigation improvements (including the deepening of the shipping channel from the Atlantic Ocean to the New York harbor) on land and/or waters within the recreation area shall be exercised in accordance with plans which are mutually acceptable to the Secretary of the Interior and the Secretary of the Army and which are consistent with both the purpose of this sub chapter and the purpose of existing statutes dealing with water and related land resource development."

   The NPS 's authority to conserve and manage park resources is derived from the Organic Act of 1916, which states that "the fundamental purpose of the said parks .. .is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations." The NPS has discretion to allow impacts on park resources and values when necessary and appropriate to fulfill the purposes of a park (NPS 2006 sec. 1.4.3). However, as mandated by the Organic Act, the NPS cannot allow an adverse impact that would constitute impairment of the affected resources and values (NPS 2006 sec 1.4.3). An action constitutes an impairment when its impacts "harm the integrity of Park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values" (NPS 2006 sec 1.4.5). To determine impairment, the NPS must evaluate "the particular resources and values that would be affected; the severity, duration, and timing of the impact; the direct and indirect effects of the impact; and the cumulative effects of the impact in question and other impacts" (NPS 2006 sec 1.4.5). The NPS cannot legally take or authorize an action that will result in impairment. Therefore, the District will continue to coordinate with and provide sufficient information to the NPS, upon which the NPS can make a written determination that the Districts actions authorized by the NPS will not lead to an impairment of park resources and values (NPS 2006 sec 1.4. 7).

3. Borrow Areas

a. All draft and final reports pertaining to investigations of Project borrow areas will be provided to the New York SHPO, NJHPO, the LPC NPS, and the Interested Tribes for review.

b. Coordination and consultation on eligibility determinations, the need for additional investigations for targets and anomalies will include the New York SHPO, NJHPO, NPS, and Interested Tribes.

4. Nearshore Sand Placement, Coastal Process Features, Measures for Residential and Non-Residential Structures, and Ringwalls:

a. All draft and final reports pertaining to investigations of the nearshore, the coastal process features, the measures for residential and non-residential structure Areas of Potential Effect outside of National Park Service Land will be provided to the New York SHPO, NJHPO, the LPC, NPS, Interested Tribes, the relevant municipality(ies) and local historical society(ies) or historic preservation group(s) for review (see Appendix E).

b. Coordination and consultation on eligibility determinations, the need for additional investigations, etc., resulting from the reviews completed in Stipulation XI.B.3.a above will include the New York SHPO, NJHPO, the LPC, Interested Tribes, the relevant municipality, its local historical society or historic preservation group(s) (see Appendix E), and the landowner(s).

5. Unless otherwise stated, all review periods will be 30 calendar days from the date of receipt by the Consulting Party and any comments resulting from those reviews must be submitted to the District in writing (via electronic or regular mail).

6. With the submission of final reports, the District will respond to comments, identifying how comments were/were not taken into account as part of report revisions or recommendation for additional action.

7. If a response is not received by the end of the review period, the District will assume concurrence with the subject determination, evaluation, plan, report or other document submitted.

8. Activities On New York City Lands:

a. For those portions of the Undertaking which take place on New York City (NYC) owned property, the District will fully engage the LPC in all consultations and secure LPC concurrence for all decisions related to identification, evaluation, effect determinations, and treatment of adverse effects. The District will submit all documentation and determination findings for properties on NYC land to the LPC for review and concurrence prior to submission to NYSHPO or ACHP. If the District, and NYSHPO cannot come to agreement on any such matters, the provisions of Stipulations V or XII will apply, as most appropriate.

XII. DISPUTE RESOLUTION

A. Should any Signatory object in writing to the District at any time to any actions proposed or the manner in which the terms of this PA are implemented, the District and the signatories shall attempt to resolve any disagreement arising from implementation of this PA.

B. If there is a determination that the disagreement cannot be resolved, the District shall forward all documentation relevant to the dispute to the ACHP and request the ACHP's recommendations or request the comments of the ACHP in accordance with 36 CFR Part 800.7(c).

C. The ACHP shall provide the District with its advice on the resolution of the objection within thirty (30) days of receiving adequate documentation. Any ACHP recommendations or comments provided in response will be considered in accordance with 36 CFR Part 800.7(c), with reference only to the subject of the dispute. The District shall respond to ACHP recommendations or comments indicating how the District has taken the ACHP's recommendations or comments into account and complied with the ACHP's recommendations or comments prior to proceeding with the Undertaking activities that are the subject to dispute. Responsibility to carry out all other actions under this PA that are not the subject of the dispute will remain unchanged.

D. If the ACHP does not provide its advice regarding the dispute within the thirty (30) calendar daytime period, the District may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, the District shall prepare a written response that takes into account any timely comments regarding the dispute from the signatories to the PA, and provide them and the ACHP with a copy of such written response.

XIII. WITHDRAWAL AND TERMINATION

A. Any signatory may withdraw its participation in this PA by providing thirty (30) days advance written notification to all other signatories. In the event of withdrawal, any signatory to this PA may terminate it by providing 30 calendar days, written notice to the signatories. In the event of withdrawal, this PA will remain in effect for the remaining signatories.

B. This agreement may be terminated in accordance with 36 CFR Part 800, provided that the signatories consult during the period prior to termination to seek agreement on amendments or other actions that would avoid termination. Any signatory requesting termination of this PA will provide thirty (30) days advance written notification to all other signatories.

C. In the event of termination, the District will comply with 36 CFR 800.4 through 800.6 with regard to individual undertakings covered by this Agreement.

XIV. DURATION AND SUNSET CLAUSE

A. This PA shall take effect upon execution by the District, the New York SHPO, NJHPO, NPS with the date of the final signature.

B. This PA will continue in full force and effect until the construction of the Undertaking is complete and all terms of this PA are met, unless the Undertaking is terminated or authorization is rescinded or a period of five years from execution of the PA has passed, at which time the agreement may be extended as written provided all signatories concur.

XV. AMENDMENT

A. This PA may be amended upon agreement in writing by all Signatories. Within thirty (30) days of a written request to the District, the District will facilitate consultation between the signatories regarding the proposed amendment.

B. Any amendments will be in writing and will be in effect on the date the amended PA is filed with the ACHP.

XVI. ANTI-DEFICIENCY ACT

All requirements set forth in this PA requiring expenditure of funds by the District are expressly subject to the availability of appropriations and the requirements of the Anti-Deficiency Act (31 U.S.C. 1341). No obligation undertaken by the District under the terms of this PA shall require or be interpreted to require a commitment to extend funds not appropriated for a particular purpose. If the District cannot perform any obligation set forth in this PA because of unavailability of funds that obligation must be renegotiated among the District and the signatories as necessary.

PROGRAMMATIC AGREEMENT
AMONG
THE U.S. ARMY CORPS OF ENGINEERS, NEW YORK DISTRICT,
THE NEW YORK STATE HISTORIC PRESERVATION OFFICE,
THE NEW JERSEY STATE HISTORIC PRESERVATION OFFICE AND
THE NATIONAL PARK SERVICE

REGARDING THE NEW YORK – NEW JERSEY HARBOR AND TRIBUTARIES
COASTAL STORM RISK MANAGEMENT PROJECT

ACTIONABLE ELEMENTS
EAST RISER, HARLEM RIVER, and OAKWOOD BEACH

Execution and implementation of this PA evidences that the District has satisfied its Section 106 responsibilities 36 CFR 800.6(b)(1)(iv) for all individual undertakings of the Project, and has afforded the New York , NJHPO, NPS and the ACHP an opportunity to comment on the undertaking and its effects on historic properties.

_____ _____

Matthew W. Luzzatto
Colonel, U.S. Army
New York District
Army Corps of Engineers

Date

PROGRAMMATIC AGREEMENT
AMONG
THE U.S. ARMY CORPS OF ENGINEERS, NEW YORK DISTRICT,
THE NEW YORK STATE HISTORIC PRESERVATION OFFICE,
THE NEW JERSEY STATE HISTORIC PRESERVATION OFFICE AND
THE NATIONAL PARK SERVICE

REGARDING THE NEW YORK – NEW JERSEY HARBOR AND TRIBUTARIES
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_____ _____

Jennifer T. Nersesian Date
Superintendent
Gateway National Recreation Area

PROGRAMMATIC AGREEMENT
AMONG
THE U.S. ARMY CORPS OF ENGINEERS, NEW YORK DISTRICT,
THE NEW YORK STATE HISTORIC PRESERVATION OFFICE,
THE NEW JERSEY STATE HISTORIC PRESERVATION OFFICE AND
THE NATIONAL PARK SERVICE

REGARDING THE NEW YORK – NEW JERSEY HARBOR AND TRIBUTARIES
COASTAL STORM RISK MANAGEMENT PROJECT

ACTIONABLE ELEMENTS
EAST RISER, HARLEM RIVER, and OAKWOOD BEACH

Execution and implementation of this PA evidences that the District has satisfied its Section 106 responsibilities 36 CFR 800.6(b)(1)(iv) for all individual undertakings of the Project, and has afforded the New York SHPO, NJHPO, NPS and the ACHP an opportunity to comment on the undertaking and its effects on historic properties.

_____ _____

Katherine J. Marcopul, PhD Date
Deputy State Historic Preservation Officer
New Jersey State Historic Preservation Office

PROGRAMMATIC AGREEMENT
AMONG
THE U.S. ARMY CORPS OF ENGINEERS, NEW YORK DISTRICT,
THE NEW YORK STATE HISTORIC PRESERVATION OFFICE,
THE NEW JERSEY STATE HISTORIC PRESERVATION OFFICE AND
THE NATIONAL PARK SERVICE

REGARDING THE NEW YORK – NEW JERSEY HARBOR AND TRIBUTARIES
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_____ _____

R. Daniel Mackay Date
Deputy Commissioner for Historic Preservation/Deputy SHPO
New York State Historic Preservation Office

PROGRAMMATIC AGREEMENT - APPENDIX A

REGARDING THE NEW YORK – NEW JERSEY HARBOR AND TRIBUTARIES
COASTAL STORM RISK MANAGEMENT PROJECT

ACTIONABLE ELEMENTS
EAST RISER, HARLEM RIVER, and OAKWOOD BEACH
STUDY MAPS

NY-NJ HARBOR AND TRIBUTARIES STUDY

U.S. ARMY
CORPS OF ENGINEERS
NEW YORK DISTRICT

East Riser Actionable Element Project Measures

Moonachie and Carlstadt Boroughs
Bergen County, New Jersey
Date: 6/25/2025

Legend

- Hackensack/Passaic Study Region
- Municipal Boundary

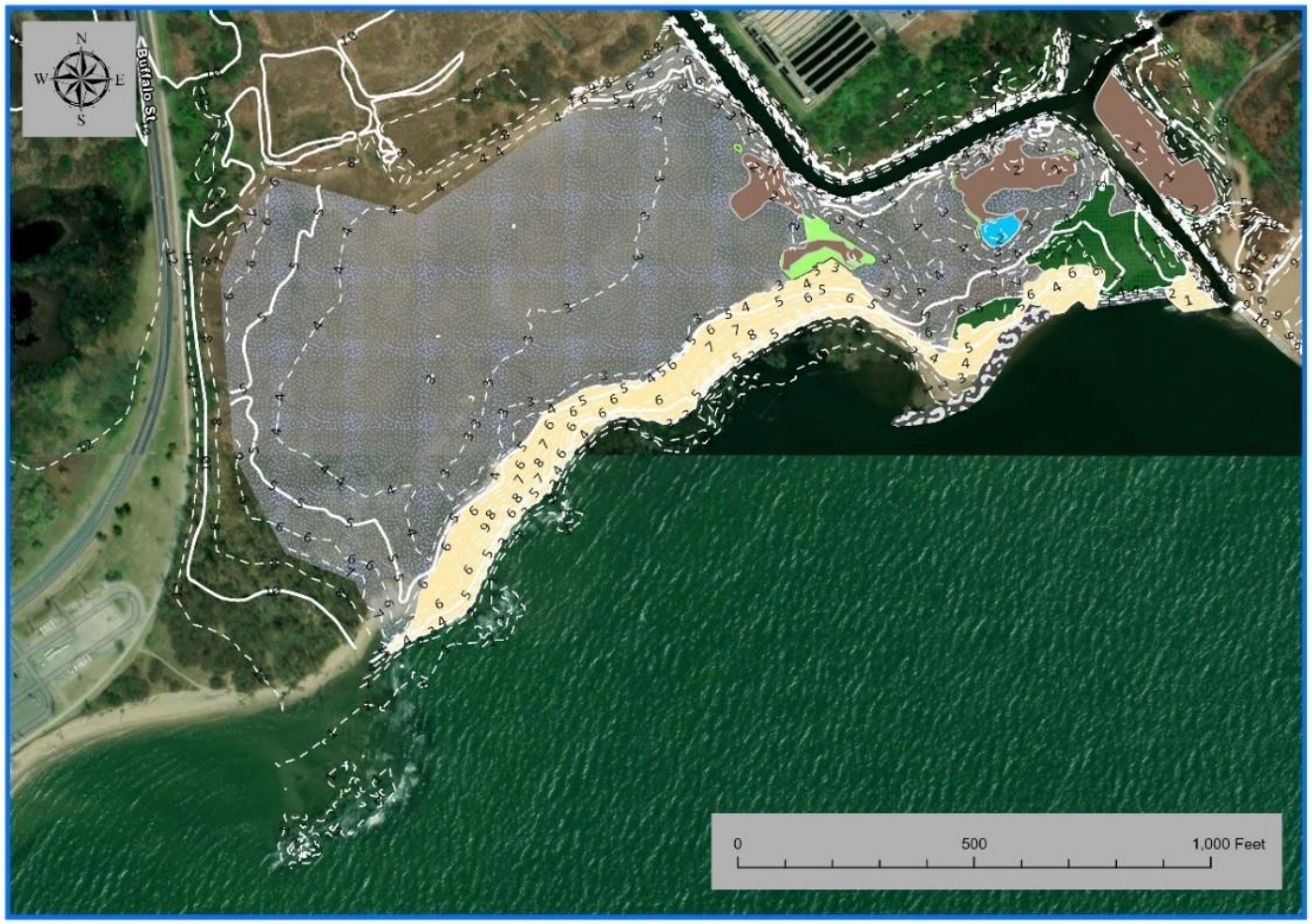
Measures

- Channel Modifications
- Culvert Replacement(s)
- Areas Impacted by Culvert Replacement(s)
- Railroad Bridge Replacement


Harlem River
Actionable Element
LANDWARD Alignment
Harlem River Dr
Harlem River Dr S
Amtrak Railroad
P.S. 046 Arthur Tappan
Holcombe Rucker Park Comfort Station
Macombs Dam
Colonel Charles Young Triangle
Harlem Lane Playground
Frederick Johnson Playground
Harlem-148 St
0 250 500 750 Feet


Harlem River
Actionable Element
SEAWARD Alignment
Harlem River Dr
Harlem River Dr S
Amtrak Railroad
P.S. 046 Arthur Tappan
Holcombe Rucker Park Comfort Station
Macombs Dam
Colonel Charles Young Triangle
Harlem Lane Playground
Frederick Johnson Playground
Harlem-148 St
0 250 500 750 Feet


Area of Detail
ROCKLAND
Ossining
White
Scarsdal
Yonkers
BRONX
NEW YORK
Queens
New York
Brooklyn
Jamaica
Scale 1:500,000
Legend
Lower Hudson/East River Study Region
Reduced Risk with Harlem River Actionable Element
Measures
Combi Wall
Deployable Flood Barrier - Vehicle Gate
Large Floodwall
Large Floodwall - Under Roadway
Tunnel Span
NY-NJ HARBOR AND TRIBUTARIES STUDY
Harlem River Actionable Element Alignment Comparison
Future With Project Reduced Risk (1% AEP w/ Intermediate Sea Level Rise in 2095)
Date: 6/20/2025
U.S. ARMY CORPS OF ENGINEERS NEW YORK DISTRICT



NY-NJ HARBOR AND TRIBUTARIES STUDY

Oakwood Beach Actionable Element

Existing Conditions

Staten Island, New York

Date: 6/26/2025

U.S. ARMY
CORPS OF ENGINEERS
NEW YORK DISTRICT

Legend

Existing Contours
- 5ft Interval Contours
- 1ft Interval Contours

Existing Environmental Zones
- Existing Rip Rap
- Phragmites Zone
- Mud Flat Zone
- Spartina Zone
- Salt Panne Zone
- Maritime Shrub Land Zone
- Dune Beach Zone

PROGRAMMATIC AGREEMENT - APPENDIX B

THE NEW YORK – NEW JERSEY HARBOR AND TRIBUTARIES
COASTAL STORM RISK MANAGEMENT ACTIONABLE ELEMENTS
EAST RISER, HARLEM RIVER, and OAKWOOD BEACH

CULTURAL APPENDIX