



**US Army Corps
of Engineers®**
New York District

REVISED DRAFT
Integrated Hurricane Sandy
General Reevaluation Report
and
Environmental Impact Statement

Atlantic Coast of New York

East Rockaway Inlet to
Rockaway Inlet and Jamaica Bay

Appendix D
Environmental Compliance

Attachment D6
Programmatic Agreement Among:

U.S. Army Corps of Engineers
New York State Historic Preservation Office
National Park Service
Advisory Council on Historic Preservation

August 2018

East Rockaway Inlet to Rockaway Inlet and Jamaica Bay Reformulation Study

Revised Draft General Reevaluation Report and Environmental Impact Statement

Preliminary Draft Programmatic Agreement among

**The United States Army Corps of Engineers
The New York State Historic Preservation Office
The National Park Service
The Advisory Council on Historic Preservation**

WHEREAS, the US Army Corps of Engineers, New York District (District) is proposing to undertake measures to reduce coastal storm damages and minimize impact on the Rockaway Peninsula from East Rockaway Inlet to Rockaway Inlet along the Atlantic Ocean and the Jamaica Bay shorelines as well as locations within Jamaica Bay (Project); and

WHEREAS, the East Rockaway Inlet to Rockaway Inlet and Jamaica Bay, New York Hurricane Sandy General Re-Evaluation Study was authorized by the House of Representatives dated 27 September 1997 and Public Law 113-2 (29 Jan 13), the Disaster Relief Appropriations Act of 2013 authorized Corps projects for reducing flood and storm risks in the Hurricane Sandy affected area that have been or are under construction, which includes the Project; and

WHEREAS, the New York State Department of Environmental Conservation is the non-federal sponsor and New York City, through the New York City Mayor's Office Recovery and Resiliency is the local sponsor to New York State; and

WHEREAS, the Project consists of levee, buried seawall, new groin construction, extension of existing groins, and beach renourishment along the Atlantic Ocean shoreline of the Rockaway Peninsula, as well as residual high frequency flood risk reduction features consisting of berms, floodwalls, and bulkheads along the southeast side of Jamaica Bay (Appendices A and B); and

WHEREAS, the Area(s) of Potential Effect include the offshore borrow sites, near shore sand placement, the alignments for all of the Project features, the viewsheds associated with affected historic properties, including those from the shore to the Atlantic Ocean (Appendices A and B); and

WHEREAS, the Jacob Riis Park Historic District, and the Far Rockaway Bungalow Historic District are located within the APE along the Rockaway Peninsula (Appendices A and B); and

WHEREAS, the high frequency flood risk reduction features and other Project alignments have the potential to be sensitive for archaeological resources (Appendices A and B); and



WHEREAS, pursuant to 36 CFR Part 800, the regulations implementing Section 106 of the National Historic Preservation Act (NHPA) (54 U.S.C 306108), the District has determined that implementation of the Project will have the potential to have an adverse effect on the Jacob Riis Park Historic District and archaeological resources located within the alignment and the high frequency flood risk reduction measures; and

WHEREAS, the National Park Service (NPS) manages and administers the Jacob Riis Historic District, which is located within the Gateway National Recreation Area; and

WHEREAS, the District will consult with the NPS, Gateway National Recreation Area, New York State Historic Preservation Office (NYSHPO), the Shinnecock Indian Nation, the Stockbridge-Munsee Band of Mohican Indians, the Delaware Tribe of Indians, the Delaware Nation (all federally-recognized Tribes), the New York state-recognized Unkecheug Indian Nation, the New York City Landmarks Preservation Commission (NYCLPC), and other appropriate consulting parties to define efficient and cost effective processes for taking into consideration the effects of the Project on historic properties; and

WHEREAS, the District will invite the NPS, NYSHPO, the Shinnecock Indian Nation, the Stockbridge-Munsee Band of the Mohican Indians, the Delaware Tribe of Indians, the Delaware Nation, the Unkechaug Indian Nation, the NYCLPC, and other relevant consulting parties to be signatories to this agreement; and

WHEREAS, the District will notify the Advisory Council on Historic Preservation (ACHP) of the potential for the Project to affect historic properties and that a programmatic agreement will be prepared; and

WHEREAS, the District will involve the general public through the National Environmental Policy Act (NEPA) process, which affords all persons, organizations, and government agencies the right to review and comment on proposed major federal actions that are evaluated by a NEPA document and participate in public meetings during the review of the feasibility report; and

NOW, THEREFORE, the District, NYSHPO, and ACHP agree that the Undertakings shall be implemented in accordance with the following stipulations in order to take into account the effects of the Undertakings on historic properties.

STIPULATIONS

I. BEACH FILL - BORROW AREA INVESTIGATIONS

- A. A remote sensing (magnetometer and side scan sonar survey) of any borrow areas not previously surveyed will be conducted to identify any potential cultural resources. In addition, cores for any borrow areas not previously surveyed will be examined to determine the potential for the recovery of buried landsurfaces.
- B. If a cultural resource(s), target(s), and/or anomaly(ies) are identified, the District will designate a buffer zone around each potential resource, as determined by the nature of the



anomaly/return. Buffer zone(s) shall be clearly delineated on construction plans. No construction activities, including the removal of sand, anchoring, etc., that could potentially impact the wrecks will occur within the designated buffer zones.

- C. If any targets and/or anomalies cannot be avoided, the District will consult with the NYSHPO and other relevant signatories and other consulting parties to consider alternatives and determine the level of additional investigations (diving, documentation, additional reconnaissance diving, Phase II survey, etc.) are required.
- D. The results of any investigations will be coordinated with the NYSHPO and other signatories and consulting parties.
- E. If the anomalies/targets are determined to represent a historic property, the District in coordination with the NYSHPO and other relevant signatories and interested parties will determine alternatives including avoidance, data recovery through underwater archaeological investigations, and documentation. The District will resolve adverse effects to historic properties in accordance with Stipulation IV below.

II. HIGH FREQUENCY FLOOD RISK REDUCTION FEATURES

- A. The District will determine, in coordination and consultation with the NYSHPO, the federally-recognized Tribes, and other relevant signatories and interested parties, what investigations are necessary to determine if the construction of any high frequency flood risk reduction features will have an adverse effect on historic properties. The District would carry out investigations, as necessary, to identify historic properties and determine the effect of the proposed features on identified features.
- B. The District will document the results of any investigations and provide them for review to the NYSHPO, the federally-recognized Tribes, and other relevant signatories and interested parties.
- C. If a property is determined to be eligible for the National Register, the District will consult with the NYSHPO, federally-recognized Tribes and other relevant signatories and interested parties to resolve the adverse effects in accordance with Stipulation IV below.

III. BURIED SEAWALL AND FLOODWALLS

- A. The District will determine, in coordination and consultation with the NYSHPO, the NPS, the federally-recognized Tribes, and other relevant signatories and interested parties what investigations are necessary to determine if the construction of buried seawalls, floodwalls, and other features that include subsurface disturbance will have an adverse effect on the built environment, including the beach, bulkhead, and/or groins that are contributing elements of the various historic districts, as well as on potentially sensitive areas for archaeological resources. These investigations may include, but not be limited to, construction monitoring and recordation and/or research, field investigations and analysis on the Rockaway Peninsula development to include the potential for deeply buried archaeological sites.



- B. The District will document results of any investigations and provide them for review to the NYSHPO, NPS, the federally-recognized Tribes, and other relevant signatories and interested parties.
- C. If a property is determined to be eligible for the National Register, the District will consult with the NYSHPO, NPS, federally-recognized Tribes and other relevant signatories and interested parties to resolve the adverse effects in accordance with Stipulation IV below.

IV. RESOLUTION OF ADVERSE EFFECTS

- A. The District shall continue consultation with the NYSHPO, NPS, the federally-recognized Tribes, other signatories and consulting parties, as appropriate, pursuant to 36 CFR Part 800.6 to avoid, minimize or mitigate adverse effects to historic properties.
- B. The District shall notify the NYSHPO, NPS, the federally-recognized Tribes, and other relevant signatories, property owners and consulting parties and provide documentation regarding the identification and evaluation of the historic properties. The District will work with the NYSHPO, other relevant signatories, etc. to determine how best to resolve any adverse effects and document the proposed resolution.
- C. Once there is agreement on how the adverse effects will be resolved, the District shall prepare treatment plan that will identify the activities to be implemented that will resolve the adverse effects. The treatment plan will be provided for review and comment prior to implementation.
- D. Should the District, NYSHPO, and the relevant signatories disagree on how the adverse effects will be resolved, the District shall seek to resolve such objection through consultation in accordance with procedures outlined in Stipulation X.C.

V. PUBLIC INVOLVEMNT 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. 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, in coordination with the NYSHPO, NPS, the federally-recognized Tribes, and other interested parties, publically accessible information about the cultural resources and historic properties investigations for the Undertaking in the form of brief publication(s), exhibit(s), or website.



VI. CURATION

- A. 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 NPS, New York City, or other landowner/entity. Minimally, the District will ensure that analysis is complete and the final report(s) are produced and accepted by the NYSHPO.
- B. The District shall be responsible for consulting with the NPS, New York City and other 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 non-federal landowners wish to donate the collection, the District, in coordination with the NYSHPO, the NPS, the federally-recognized Tribes, and others to determine an appropriate entity to take control of the collection.
- C. 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.

VII. 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 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, the NPS, the federally-recognized Tribes, the signatories, and additional interested or consulting parties as appropriate, within 48 hours of the finding and request consultation to resolve potential adverse effects.

1. If the District, NYSHPO, the NPS, the federally-recognized Tribes, and the



signatories agree that the cultural resource is not eligible for the NRHP, then the suspension of work in the area of the discovery will end.

2. If the District, NYSHPO, the NPS, the federally-recognized Tribes, and the signatories agree that the cultural resource is eligible for the NRHP, then the suspension of work will continue, and the District, in consultation with the NYSHPO, NPS, the federally-recognized Tribes and the signatories, 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.
3. If the District, the NYSHPO, the NPS, the federally-recognized Tribes, and the signatories cannot agree on the appropriate course of action to address an unanticipated discovery or effects situation, then the District shall initiate the dispute resolution process set forth in Stipulation X.C below.

VIII. DISCOVERY OF HUMAN REMAINS

1. If any human remains and/or grave-associated artifacts are encountered during any of the investigations, including data recovery, the District will follow the NYSHPO Human Remains Discovery Protocol (2008; Appendix C) 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), the Native American Graves Protection and Repatriation Act (PL 101-601) and , US Army Corps of Engineers, Policy Guidance Letter No. 57 (1998) Indian Sovereignty and Government-to-Government Relations with Indian Tribes.
2. The following language shall be included in the construction plans and specifications:

“When human remains, suspected human remains, or indications of a burial are discovered during the execution of a Project, the individual(s) who made the discovery shall immediately notify the local law enforcement, coroner/medical examiner, and the Project COR and the District, and make a reasonable effort to protect the remains from any harm. The human remains shall not be touched, moved or further disturbed. All activities shall cease within a minimum of 50 feet from the area of the find (50-foot radius ‘no work’ buffer) until authorized by the District.”

IX. 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 archaeological investigations carried out pursuant to this PA will be undertaken in



accordance with the New York State Archaeological Council'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).

X. ADMINISTRATIVE TERMS

A. REPORTING

1. Each year following the execution of this PA until it expires or is terminated, the District shall provide the NYSHPO, NPS, the federally-recognized Tribes, all signatories, and interested parties a summary report detailing work undertaken pursuant to this PA. 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.
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. REVIEW PERIODS

1. The District shall ensure that all draft and final reports resulting from action pursuant to this PA will be provided to the NYSHPO, ACHP, NPS, the federally-recognized Tribes, the Unkechaug Indian Nation, and to other interested parties.
2. The NYSHPO, ACHP, NPS, the federally-recognized Tribes, the Unkechaug Indian Nation, and any other interested party shall have 30 calendar days to review and/or object to determinations, evaluations, plans, reports and other documents submitted to them by the District.
3. Any comments and/or objections resulting from a review of any District determination, evaluations, plans, reports and other documents must be provided in writing to the District.
4. If comments, objections, etc., are not received within 30 calendar days, the District will assume concurrence with the subject determination, evaluation, plan, report or other document submitted.

C. DISPUTE RESOLUTION

1. 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.



2. 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 Council in accordance with 36 CFR Part 800.7(c).
3. 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 recommendations or comments into account and complied with the ACHP 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.
4. If the ACHP does not provide its advice regarding the dispute within the thirty (30) calendar day time 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.

D. WITHDRAWAL AND TERMINATION

1. 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.
2. 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.
3. 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.

E. DURATION AND SUNSET CLAUSE

1. This PA shall take effect upon execution by the District, the NYSHPO, and the signatories with the date of the final signature.
2. This PA will continue in full force and effect until the construction of the Project is complete and all terms of this PA are met, unless the Project 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.

F. AMENDMENT

1. 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.
2. Any amendments will be in writing and will be in effect on the date the amended PA is filed with the Council.

G. 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.

Execution and implementation of this PA evidences that the District has satisfied its Section 106 responsibilities for all individual undertakings of the Project, and has afforded the NYSHPO and the Council an opportunity to comment on the undertaking and its effects on historic properties.



APPENDIX A

CULTURAL RESOURCES



Cultural Resources

“Cultural resources” is an umbrella term for many heritage-related resources, including prehistoric and historic archaeological sites, buildings, structures, districts, or certain objects. Cultural resources are discussed in terms of archaeological resources, architectural resources, or resources of traditional cultural significance. Federal cultural resources laws applicable to this project include the National Historic Preservation Act (NHPA), the Archaeological and Historic Preservation Act (1974), the American Indian Religious Freedom Act (1978), the Archaeological Resources Protection Act (1979), and the Native American Graves Protection and Repatriation Act (1990).

The National Register of Historic Places (NRHP) is the official list of the properties in the United States that are significant in terms of prehistory, history, architecture, or engineering. The NRHP is administered by the National Park Service.

Generally, resources must be more than 50 years old to be considered eligible for the NRHP. To meet the evaluation criteria for eligibility to the NRHP, a property needs to be significant under one or more NRHP evaluation criteria (36 CFR Part 60.4), and retain historic integrity expressive of the significance. More recent structures might be eligible for listing in the NRHP if they are of exceptional importance or if they have the potential to gain significance in the future per special NRHP considerations.

The New York City landmarks law gives the New York City Landmarks Preservation Commission (NYCLPC) authority to designate City landmarks, Interior landmarks, Scenic landmarks, and Historic Districts, and to regulate any construction, reconstruction, alteration, or demolition of them. Projects that might physically affect City landmarks or are within landmark Historic Districts require review by NYCLPC. Archaeological resources also are considered by the NYCLPC. Criteria for City landmarks are different from NRHP evaluation criteria, and consider properties 30 years of age or older that meet certain criteria, compared to the NRHP evaluation of properties of at least 50 years of age or older.

Section 106 of the NHPA requires a Federal agency official to take into account the effects of its undertaking on historic properties, and afford the Advisory Council on Historic Preservation (ACHP), an independent Federal agency, an opportunity to comment. This is done in accordance with the regulations of the ACHP implementing Section 106 process, 36 CFR Part 800. Additionally, consultation with the New York State Historic Preservation Office (NYSHPO) and consulting parties including local governments is required regarding the identification and evaluation of potentially affected historic properties, determination of potential effects of an undertaking on historic properties, and resolution of any adverse effects. Under the Section 106 process, the City of New York would also be a consulting party for the proposed project.

The Section 106 review requires an assessment of the potential impact of an undertaking on historic properties that are within the proposed project’s Area of Potential Effect (APE). The APE is defined as the geographic area(s) “within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist.”

The APEs are based on location of each proposed project element (Appendix B) and the areal extent over which construction and operation of the element would reasonably be expected to occur. In general, the APEs for each project element are considered to be within or immediately adjacent to the element, because construction and operation of each element is not anticipated to



require disturbing the ground surface beyond the immediate “footprint” of the element. A description of the APEs are provided in Section 2.

1 HISTORICAL CONTEXT

The following information for the Cultural Resources sections were excerpted from *Phase 1A Cultural Resource Documentary Study For Gerritsen’s Creek Ecosystem Restoration, Borough of Brooklyn, Kings County, New York* (2002). This information was reported in the USACE Gerritsen’s Creek Environmental Assessment (2003). The following information pertains to the area encompassing both the Rockaway and Jamaica Bay projects.

1.1 Native American and Early European History

Roughly 5,000 to 6,000 years ago (circa 3,000 to 4,000 B.C.), the Atlantic shoreline lay some 25 miles to the east; by around A.D. 500 to 1000, less than 1,500 years ago, the coastline began to roughly resemble that of the present day, and Jamaica Bay and its neighboring drainages will have been largely tidal (Hunter and Damon, 2002). Native American occupation of the Lower Hudson Valley and Long Island is likely to have followed on soon after the retreat of the last glacier, although clear cut evidence of such activity during the Paleo-Indian (circa 10,000-8,000 B.C) and Archaic (circa 8,000-2,000 B.C.) periods is generally sparse (Hunter and Damon, 2002).

Throughout the Late Woodland period, circa AD 1000-1600, camp sites and shell middens were a common feature within the tidal landscape of southern Long Island and evidence of Native American occupation of this period has been recorded all around the periphery of Jamaica Bay (Hunter and Damon, 2002). Further inland on Long Island, a few larger sites, probably permanent base camps, have also been identified, including one locus in Flatlands with an Iroquois style longhouse considered to be a ceremonial center and meeting house. Both longhouses and smaller round houses have been noted on Late Woodland period sites on Long Island. The majority of the documented sites were noted in the late nineteenth and early twentieth centuries, in particular as a result of the work of Reginald Bolton (1920, 1922, and 1934), with several subsequent studies confirming their existence (Hunter and Damon, 2002).

Towards the end of the Late Woodland period, continuing into the seventh century when contact with Europeans was occurring on a regular basis, the Native American population of Long Island began to come more clearly into focus as a part of recorded history (Hunter and Damon, 2002). The Brooklyn area was inhabited by a group known as the Canarsie (or Canarsee), a branch of the Algonquian-speaking Lenape, a series of loose-knit and semi-sedentary tribes spread across much of the area between the Delaware and Lower Hudson Rivers and extending east into Long Island (Hunter and Damon, 2002).

The Jamaica Bay area supported villages of Canarsie and Rockaway American Indians, who engaged in cultivation, fishing, gathering shellfish, and possibly the manufacture of wampum from the seashells (Hunter and Damon, 2002). In the seventh century, the Canarsie participated in a complex web of trading relationships involving the Lenape, other Native American peoples further to the west and north, the Dutch and eventually the English. The two key commodities traded by the Canarsie for European goods were furs and wampum (polished shell beads used for jewelry and as currency), the latter being of particular importance in view of the abundance of shellfish in and around Jamaica Bay. The general area (southern Long Island) was



settled by the Dutch in the 1630s and 1640s (Hunter and Damon, 2002). In the 1630s and 1640s, however, the Canarsie began to lose their hold over land in southern Long Island, ceding property to Dutch farmer-settlers. By century's end, their numbers, probably never more than a few thousand, were severely reduced as a result of disease, conflict (notably Kieft's War of 1643-46) and the general dislocation visited upon them by Europeans. Over the course of the eighteenth century, the surviving Canarsie moved west and out of the Hudson Valley altogether.

A detailed and more expansive history of the transition from American Indians to European occupancy is available in *Jamaica Bay: A History, Gateway National Recreation Area, New York--New Jersey* (Black, 1981), as well as the *Cultural Resources Baseline Study, Jamaica Bay Ecosystems Restoration Project, Kings, Queens and Nassau Counties, New York* (Panamerican, July 2003).

1.2 19th and 20th Century History

The section provides a summary of development in the Rockaway and Jamaica Bay areas during the 19th and early 20th centuries.

1.2.1 Rockaway

Although a part of Queens, Rockaway was settled by Europeans separately and earlier than other areas around Jamaica Bay (NYCDEP, 2011). In 1833, the Rockaway Association purchased most of the oceanfront property on the Richard Cornell homestead to construct an oceanfront resort called the Marine Hotel in Far Rockaway. Transportation to and from Rockaway originally consisted of horses and horse-drawn carriages, but by the mid-1880s, railroad access was provided, terminating at the present Far Rockaway station of the Long Island Railroad. Land values increased and business expanded rapidly as a consequence, and the population of Far Rockaway was large enough to apply for incorporation in 1888. On July 1, 1897, the Village of Rockaway Park was incorporated into the City of Greater New York. Streets were graded and sections of Rockaway Park, Belle Harbor, and Neponsit began to be developed. Completion of the Cross Bay Bridge in 1925, further development of the beach and boardwalk in 1930, the opening of the Marine Parkway Bridge in 1937, and improvements to the railroad services in 1941 all made Rockaway more accessible, encouraging population growth, development, and urbanization (NYCDEP, 2011).

In the second half of the nineteenth century, the Rockaway Peninsula developed as a popular seaside resort for the growing middle-class New Yorkers, who filled its seaside bungalows and amusement parks (Structures of Coastal Resilience [SRC], 2014). Transportation access to the oceanfront beaches became an issue. Ferry service and deepened navigational channels were established by the Canarsie Railroad Line, and by 1887 a cross-bay train trestle was constructed by the New York, Woodhaven, and Rockaway Railroad. This line was sold in 1886 to the Long Island Railroad, which renamed it the New York and Rockaway Beach Railway. It was purchased in 1955 by the City of New York, reconstructed, and incorporated into the city's subway service as the IND Rockaway Line; it now carries the Metropolitan Transportation Authority's A and S trains across Jamaica Bay. The trestle pilings caused some obstruction of the bay's creeks and waterways, as did the development of the Flynn Cross-Bay Roadway (now the Cross Bay Boulevard) traversing the bay. Yet the Canarsie Line, the train trestle, and the Cross Bay Boulevard led to the transformed perception of the bay itself as an enjoyable place of



recreation. Many believed that the waters of the bay were healthier and safer for swimming than the Atlantic beachfront of the Rockaway Peninsula (SCR, 2014).

Fort Tilden was established in 1917 and provided a coastal location from which to defend New York City and the harbor from sea and air attacks during World War I through the Cold War era, when a Nike Missile Launch Site was installed. Fort Tilden was decommissioned in 1967 and in 1974 was transferred to the National Park Service and became part of the Gateway National Recreation Area (NPS, 2014).

1.2.2 Jamaica Bay

A review of historical maps shows that the area of Brooklyn adjacent to Jamaica Bay was largely undeveloped marshland until the turn of the 20th century (NYCDEP, 2011). The neighborhoods of East New York and Flatbush were the closest developed areas of Brooklyn to Jamaica Bay, although limited development had occurred in Canarsie Landing and Bergen Beach on high ground that extended into the marshes of Jamaica Bay. Brooklyn was originally inhabited by the Lenape, American Indians who planted corn and tobacco and fished in the rivers. The Dutch settled in Manhattan in the early 1600s, and subsequently founded five villages on Long Island: Bushwick, Brooklyn, Flatbush, Flatlands, and New Utrecht. A sixth village, Gravesend, was founded in 1643 by an Englishwoman. The British captured the Dutch territory in 1674, and incorporated the six villages into Kings County, which is now part of New York City. A 1698 census counted 2,017 people in Kings County, about half of whom were Dutch (NYCDEP, 2011).

Brooklyn quickly became an important commercial port, in part due to the supply of foods grown on Long Island to New York City (NYCDEP, 2011). The Navy opened a shipyard on Wallabout Bay in 1801, and Robert Fulton began a steam-ferry service across the East River in 1814. The Village of Brooklyn was incorporated in 1816, roughly encompassing what is now known as Brooklyn Heights. By 1860, 40 percent of Brooklyn's wage earners worked in Manhattan, and ferries carried more than 32 million passengers a year. The intense pressure on ferry service led to the construction of the Brooklyn Bridge, which opened in 1883, spawning a surge in population and development. The City of Brooklyn, created in 1834, expanded to accommodate the new population, eventually encompassing all of Kings County. Brooklyn was incorporated into the City of New York in 1898 (NYCDEP, 2011).

The early 20th century saw a vast expansion in the population and urbanization of Brooklyn (NYCDEP, 2011). New bridges, trolley lines, elevated railroads, and subway lines went further into the borough. Each expansion opened new settlement and development areas. The rural character of Brooklyn quickly vanished. By the 1930s, the tributary waterbodies had been dredged, straightened, and armored, and by about 1960, most of the shoreline area was developed and expanded around Jamaica Bay (NYCDEP, 2011).

In Queens, as in Brooklyn, expansion of mass transportation system influenced growth and urbanization in Queens dramatically (NYCDEP, 2011). By 1915, most of Queens came within reach of the New York City subway. The Interborough Rapid Transit service opened to Long Island City (1915), Astoria (1917), and Queensboro Plaza (1916). Another branch extended along Queens Boulevard and Roosevelt Avenue, reaching Corona (1917) and Flushing (1928). In southern Queens, the Brooklyn Rapid Transit Company built an elevated line along Liberty Avenue through Ozone Park and Woodhaven to Richmond Hill in 1915 and along Jamaica



Avenue from the Brooklyn border through Woodhaven and Richmond Hill to Jamaica during 1917-1918 (NYCDEP, 2011).

These improvements in transportation promoted rapid growth (NYCDEP, 2011). During the 1920s, the population of Queens more than doubled, from 469,042 to 1,079,129. Farms and open areas were replaced with urban street grids aligned without regard to streams, marshes, and other waterbodies that would have to be buried or filled. While the Great Depression of the 1930s ended this boom, transportation improvements continued with new bridges (the Triborough Bridge in 1936 and the Bronx-Whitestone in 1939), roadways (the Interboro Parkway in 1935 and the Grand Central Parkway in 1936), and airports (LaGuardia Airport in 1939 and Idlewild in 1948) (NYCDEP, 2011). Floyd Bennett Field was constructed in 1928-1931 on Barren Island and served as New York City's first municipal airport. It was sold by the City to the US Navy in 1941, and became the most active Naval Air Station in the US during World War II. In 1972, it was transferred to the National Park Service and became part of the Gateway National Recreation Area (<http://www.nyharborparks.org/visit/flbe.html>).

Plumb Beach is located along the north shore of Rockaway Inlet in Brooklyn. It is a stretch of shoreline, tidal mudflats, low saltmarsh areas, a tidal lagoon, a dune system, and woodland thickets at the entrance to Gerritsen Creek adjacent to the Belt Parkway. Originally an island, the creek separating it from the land was filled in the 1930s. In 1924, New York City acquired the property for use as a park, but instead leased it to a contracting company, which parceled and rented the land. In 1972 it became part of Gateway National Recreation Area, though the parking lot and greenway that provide primary access to the shore are the responsibility of the New York City Department of Parks and Recreation and the New York City Department of Transportation.

The Marine Parkway-Gil Hodges Memorial Bridge was opened by the Marine Parkway Authority in 1937 to provide access to the Rockaway Peninsula, which previously could be reached only by ferry or by a circuitous route around the eastern end of Jamaica Bay (NYC MTA, 2016). The bridge is approximately 3,985 feet long, and is designed with a vertical lift-through truss. The land at both ends of the bridge is part of the Gateway National Recreation Area. In 1978, Gil Hodges' name was added to the bridge in honor of the Brooklyn Dodgers' great first baseman and Mets manager. Average daily traffic is approximately 20,000 vehicles.

2 AREAS OF POTENTIAL EFFECT

2.1 Rockaway

The APE for Rockaway consists of the ocean-side (Atlantic facing) onshore and nearshore areas. It also includes the proposed off-shore borrow area located in the Atlantic Ocean approximately two miles south of the Rockaway peninsula (see Appendix B, Figures 1-6).

The high-frequency flood risk reduction features (HFFRR) are proposed for in Hammels, Arverne, and Edgemere along the bayside of the Rockaway Peninsula (see Appendix B, Figures 9-11). These features consist of floodwalls, road raisings, berms, and vegetation plantings (salt meadow hay, etc.).

Based on the proposed alignments and construction designs of the shoreline measures and the HFFRR features, the APE is limited to a relatively narrow strip along the shoreline of the Rockaway peninsula and the defined areas of the HFFRR features on the bay (see Appendix B,



Figures 1-6, 9-11). However, the APE for the offshore borrow area is approximately 20 square miles.

2.2 Jamaica Bay

The APE for Jamaica Bay includes the onshore and shoreline areas along southwest corner of the bay in Motts Basin and Cedarhurst (see Appendix B, Figures 78). The features proposed for Motts Basin and Cedarhurst includes a floodwall and floodwall, bulkhead and pump station, respectively.

3 PREVIOUS RESEARCH

This section summarizes the findings of previous research investigations for cultural resources within or in close proximity to the APEs for Rockaway and Jamaica Bay, with a primary emphasis on historic properties—those that are listed or eligible for listing—on the NRHP, followed by a secondary focus on NYCLPC landmarks not on the NRHP list. This section also describes research findings for archaeological resources (pre-contact sites) and submerged sites within the APEs.

A portion of the shoreline APE is located within the Jamaica Bay Unit of the Gateway National Recreation Area. The NPS has reported that evidence of Paleo-Indian use in Gateway is sparse. Although manifestations of Paleo-Indian use of the general region are evident, no Paleo-Indian sites have been recorded (NPS, 2014). The NPS also reported that although manifestations of human occupation of northern New Jersey and the New York Harbor during the Archaic period have been recorded, no archeological sites dating definitively to this period have been recorded in Gateway.

Several sites dating to the Woodland period have been identified within Gateway and are characterized by the presence of ceramic sherds (fragments), lithic artifacts, and shell middens indicative of the period. Several Contact period sites are known to have existed in the area around Gateway, but none have been recorded within Gateway (NPS, 2014). Contact period settlements typically include small amounts of European goods (metal kettles, glass beads, bottles, etc.) intermixed with larger amounts of indigenous-material cultural items.

3.1 Rockaway

Prior cultural resource assessments have been conducted for beach nourishment projects along sections of Rockaway (e.g. between Beach 19th Street and Beach 49th Street; (USACE, 1979; USACE, 1993; Kopper, 1979). These prior studies concluded that no existing prehistoric or historic sites and no archaeological sites were present, and that, "...cultural resources reconnaissance surveys were deemed unnecessary considering the great erosive forces..." in those specific project areas (USACE, 1979; Kopper, 1979). The USACE has also determined for similar nourishment projects that sand placement should not have an adverse effect as long as it does not interfere with any features in historic districts.

3.1.1 Historic Districts Listed on the National Register

The NPS has identified the Fort Tilden, Jacob Riis Park, and the Far Rockaway Beach Bungalow Historic District (Beach 24th, 25th, and 26th Streets) as Historic Districts on the Rockaway



Peninsula. These districts are listed on the New York State Register of Historic Places (SRHP) and the NRHP. Of these, only Jacob Riis Park is within the APE for the shoreline measure (Appendix B, Figures 2-3). The Far Rockaway Beach Bungalow Historic District is immediately adjacent to the eastern section of the APE (see Appendix B, Figure 6). Jacob Riis Park is located within the Gateway National Recreation Area and are managed by the National Park Service.

3.1.1.1 Jacob Riis Park Historic District

The Jacob Riis Park Historic District, listed in 1981, is considered an “excellent, though greatly deteriorated, example of municipal recreational planning the 1930s” (NPS, 2014) (Appendix B, Figures 2-3). Its historical significance derives from its association with New York City’s Commissioner of Parks, Robert Moses, as well as it being a notable work of landscape architecture. The park was completed through the WPA (Works Progress Administration) and is associated with this important social and government program (NPS 1979). The park landscape has lost much of its integrity and has not been well maintained (NPS 2002). In 2012, Hurricane Sandy resulted in heavy wind and water damage to Jacob Riis Park facilities, including flooding; broken windows; blown out walls, sand deposition in the bathhouse; missing ceramic tiles in the bathhouse; and sand and other debris deposited in structures and across the landscape. The brick courtyard wall was destroyed and heavy erosion is evident along the boardwalk (IMT 2012h).

The 220-acre Jacob Riis Park occupies a mile-long section of the Rockaway Peninsula and provides a variety of recreational activities. The park’s three significant recreational buildings were constructed between 1932 and 1937.

The original bathing pavilion—commonly known as the bathhouse—is the dominant feature of the park. The T-shaped, one-story brick masonry structure was completed in 1932. In 1936–37, it was enlarged by a long, two-story addition on the south side of the structure. The entrance to the bathhouse is located on the north wall. The front of the bathhouse is faced with a long arcade supported by pillars and topped with two octagonal turrets (NPS 1979).

The mall focuses on a crescent-shaped extension of the boardwalk. The twin central mall buildings—constructed of brick and tile masonry—face each other at the southern end of the mall. Constructed in 1936–1937, both are two-story, square buildings, flanked by one-story wings, and connected to a rectangular, single-story wing to the south by a single-story, semicircular wing. Both have flat concrete roofs, concrete cornices, and concrete floors (NPS 1979b).

In addition, a broad promenade plaza adjacent to the original bathhouse was opened in 1932. During an expansion of the original park in 1936–1937, a continuous walkway (the length of the beach) was created, connecting all areas of the park. Both the promenade and boardwalk are considered integral elements of the park and contribute to its historic significance (Lane, Frenchman, and Associates 1992). Another striking feature of the park is the 72-acre parking lot located north of the bathhouse. With a 12,000–14,000 car capacity, it was believed to be the largest in the world at that time (NPS 1979b). The parking lot still retains its original integrity and is a contributing element to the district. (Please refer to NPS 1979b; Lane, Frenchman, and Associates 1992; and the NPS 2002 for greater detail on the Jacob Riis Park Historic District.)

The proposed Rockaway shoreline measure would be constructed along the beach, just inland of the shoreline. Based on the delineation of the historic district, the shoreline is within the historic



district (see Appendix B, Figure 3). This element would not intersect with any of the historic structures present within the district. The element elevation would be approximately 18 feet NAVD88 and approximately 50 feet wide. This element may have an effect on resources buried in the shoreline as well as a visual effect on the Jacob Riis historic district. Jacob Riis Park has also been defined as a cultural landscape. The historic structures' relationship to the ocean is a significant characteristic of this landscape (NPS 2015).

3.1.2 Far Rockaway Beach Bungalow Historic District

The Far Rockaway Beach Bungalow Historic District is located along Beach 24th, 25th, and 26th Streets in Far Rockaway in Queens County. It was listed on the National Register of Historic Places in 2013 (NPS, 2013b). It includes summer beach bungalows near the oceanfront of Far Rockaway. They are smaller than the usual domestic bungalows of the 1920s. They were built in 1921 using pattern book designs incorporating uniform facades, compact interiors, integrated porches and exposed rafters. Their architect, Henry Hohauser, became better known in the 1930s as a designer of Art Deco hotels in Miami Beach. The district was hit by Hurricane Sandy in 2012, but survived without major damage.

This historic district is located adjacent to the eastern extent of the buried shoreline measure. This measure should not intersect with the historic district or the features that contribute to the integrity of the district. Given its proximity to the shoreline measure, as project plans are designed, the placement of the buried shoreline and other features will be monitored to avoid adverse effects.

3.1.3 Other Historic Districts Eligible for the National Register

There are four historic districts located to the west of the western extent of the shoreline measures. These include the Fort Tilden Historic District, The Silver Gull Beach Club, the Breezy Point Surf Club, and the Far Rockaway Coast Guard Station. The Fort Tilden Historic District is a part of the Gateway National Recreation Area and is listed on the National Register. The Silver Gull Beach Club, the Breezy Point Surf Club and the Far Rockaway Coast Guard Station have been determined eligible for the National Register by the New York State Historic Preservation Office (NPS, 2014).

3.1.4 Landmark Structures

Landmark structures include buildings and sites and may be eligible for or listed on the National Register by the NPS and the NYC Landmark Preservation Commission. There are no landmarks located within the APE. Local landmarks (not formally listed) include the American Airline Flight 587 Memorial (southern end of Beach 116th Street near the beachfront), which is adjacent to the Rockaway shoreline measure but is outside the APE.

3.2 Jamaica Bay

Prior cultural resource assessments have been conducted in the area of the Jamaica Bay APE (FERC, 2013; NPS, 2014). Documented sites in this vicinity of Barren Island include the Equendito Native American village site and the nineteenth century Rendering Plant on Dead Horse Bay. Bernstein indicated that the area around Barren Island had an “overall low sensitivity for intact prehistoric and historic period archaeological deposits...” but “The area of highest



sensitivity for archaeological sites is near the southern end (the west side of Flat Bush Avenue near the entrance to Floyd Bennett Field), where historic maps indicate that former Barren Island was dry land and fill may not be as deep as elsewhere in the APE". Undisturbed portions Barren Island, if they exist, would have a moderate to high sensitivity for the presence of prehistoric resources. However, it is likely that any prehistoric deposits are now very deeply buried beneath landfill (greater than 6 feet below sediment surface). Excavation about six feet was anticipated to have relatively low potential for impact to any prehistoric resources. Jamaica Bay includes the Floyd Bennett Field Historic District, and the Gil Hodges Bridge, both properties listed or eligible for the National Register of Historic Places. These properties are outside the APE of each of the HFFRR features. There are no New York City Landmarks within or immediate adjacent to the APE.

3.3 Archeological Resources – Rockaway and Jamaica Bay

The NPS has reported that archeological resources in the Jamaica Bay Unit of the Gateway National Recreation Area date primarily to later pre-contact (Woodland period) and historical periods (NPS, 2014). Cultural manifestations include both surface and subsurface materials. However, many of the archeological resources identified in earlier studies can no longer be located, due to a combination of inaccurate data records, natural processes (e.g., erosion), and landfilling throughout the region in the late 19th and 20th centuries (NPS, 2014).

3.3.1 Pre-Contact Archeological Sites

Most of the recorded pre-contact sites in Gateway were described as lithic scatters, lithic/ceramic scatters, campsites, or shell middens (NPS, 2014). Most of these remain undated or are believed to date to the Woodland period. Isolated finds believed to date to the Paleo-Indian period have also been recovered. The NPS has stated that the potential for encountering pre-contact archeological resources in the future is dependent on the original sensitivity and later historical use of the area (NPS, 2014).

Although the APEs for Rockaway and Jamaica Bay are relatively narrow, the APEs extend for several linear miles through Gateway. Accordingly, it is possible that pre-contact archeological sites are present in the APEs. Given the depth of the elements throughout the APE, it is anticipated that additional assessment for pre-contact archeological sites is warranted with the APEs. USACE will consult with the NPS, the NYSHPO, the Tribes, and other interested parties to develop a testing program as part of the Programmatic Agreement.

3.3.2 Historical Archaeological Sites

The potential for the discovery of additional in situ archeological resources in Gateway is influenced by a variety of natural and human factors (NPS, 2014). These include ancient and historical sea-level fluctuations, erosion and sediment transport due to tidal/wave action, and land filling/land-modification activities in the 19th and 20th centuries. All these factors affect the potential for the discovery of buried archeological resources, and their influence varies by geographic location. Although many natural coastal park areas have been buried beneath deep fill deposits, there are also areas where intact soils and archeological deposits have been recorded. For these reasons, the potential for the identification of intact archeological deposits in the park is strongly dependent on the types and effects of past and ongoing natural and human processes. The potential for discovery of archeological resources in each specific area of the park



should be evaluated based on each area's unique set of circumstances.

Recent and comprehensive archeological assessments that considered the issue of the potential for archeological resources in Gateway included area-specific analyses of the sensitivity for such resources (NPS, 2014). These studies have included consideration of both natural and human impacts on specific park areas, and they have speculated on where the areas of highest potential for archeological resources may be. For instance, in Fort Wadsworth (Staten Island Unit), high-potential areas include pre-contact sites on bluffs within 1,000 feet of the shoreline, 18th century structures, late 19th century batteries, pre-contact sites on bluffs and terraces in the southern and western portions of Fort Wadsworth, and others (NPS, 2014).

The sensitivity for archeological resources located within portions of Breezy Point Tip in the Jamaica Bay Unit stands in contrast to the high-sensitivity areas at Fort Wadsworth (NPS, 2014). In this second case, the recent formation of the landform and the lack of long-term historical occupation have created a situation in which the potential for archeological resources of any period is very low. The ability to predict to a limited extent the sensitivity of an area for the presence of archeological resources is an outcome of the patterned nature of human behavior. Such predictions have many uses, one of which is their use in project planning (NPS, 2014).

The depth of floodwalls, levees, and buried seawalls/dunes may have the potential to impact archaeological resources.

3.3.3 Submerged Archeological Resources (Shipwrecks and Submerged Sites)

3.3.3.1 Rockaway

The Rockaway beach nourishment and reformulation proposed action may obtain sediment from one or more off-shore borrow locations, as well as from onshore sources shipped overwater via barge to the site by one or more commercial aggregate suppliers (USACE, 2016). Accordingly, and pursuant to guidelines established by the National Historic Preservation Act of 1966 and the National Environmental Policy Act of 1969, potential impacts to any significant cultural resources in a proposed borrow area must be addressed.

Based on a borrow source investigation, USACE identified three suitable offshore borrow areas approximately 3 miles south of the Rockaway peninsula (USACE, 2016). The borrow areas are identified as Borrow Area A West, Borrow Area A East, and Borrow Area B West (see Appendix B, Figure 12). The average dredging depth would be approximately 18 feet below the seafloor.

The area for Borrow Area A-West is roughly rectangular in shape approximately 4,800 feet from east to west, and 4,000 feet from north to south. Borrow Area A-East is roughly rectangular (5,000 feet in the alongshore direction by 4,000 feet in the on-offshore direction), and is approximately 1 mile east from Borrow Area A West. Borrow Area B-West is roughly a 1,200 by 1,200 feet box, and is approximately 4 miles west of Borrow Area A-West (USACE, 2016).

Panamerican conducted a remote sensing survey at Borrow Area A-West and A-East in 2005 (Panamerican, 2005). Sixty-seven magnetic anomalies were recorded within the project area. Based on signal characteristics, three anomalies have the potential to represent significant cultural resources. Panamerican recommended avoidance of all three targets. If avoidance is not



an option, additional archaeological investigations are recommended to identify the source of the magnetic anomalies. Additional work should consist of remote-sensing target refinement and diver assessment of the refined target location. Diver assessment should consist of a visual and tactile investigation of the ocean bed at the center of highest gamma deviation for each. In the event that there is no source of magnetic deflection located directly on the ocean bed, sub-ocean bed investigations should be conducted with a probe or hydroprobe to a depth sufficient to either meet proposed project requirements or to locate and delineate the anomaly source. All targets should be assessed as to historical significance, relative to NRHP criteria. The remaining anomalies represent debris deposited for fish havens along and in the western edge of the project area, as well as a pipeline that parallels the southern project area boundary (Panamerican, 2005).

A remote sensing survey has not been conducted at Borrow Area B-West. If USACE plans to use this borrow area, a remote sensing survey will be conducted prior to dredging any material. USACE will share the results with the SHPO and provide recommendations for avoidance or additional investigation, as warranted.

Previous reports suggest there is the potential for shipwrecks in the general area off of the Rockaway peninsula (e.g. Engebretsen's shipwreck inventory on the Greater New York Harbor; Engebretsen, 1982, as referenced in Panamerican Consultants, 2003b; Panamerican Consultants, 2006). Based on an analysis of shipwrecks compiled by Riess and Pickman, Panamerican concluded, "Considering the amount of vessels wrecked off of Coney Island/Ambrose Channel (west of Borrow Area 2) and the number of vessels wrecked to the east of [Borrow Area 2], it can be inferred that the potential for wrecks off of Rockaway Beach remains high" (Panamerican Consultants, 2003b).

Additionally, Panamerican reported that a diver's guide to shipwrecks within the general area of Rockaway Beach lists seven wreck sites, including: *Princess Anne*, *Robert A. Snow*, *Cornelia Soule*, *Rascal*, *Black Warrior*, *Mistletoe*, and *Margaret* (in Daniel Berg's Wreck Valley Vol. II, 1990) (Panamerican Consultants, 2003). USACE has previously stated that "*twenty-three vessels were known to have been wrecked or stranded off Rockaway and Rockaway Beach. No wrecks have been located in the East Rockaway channel inlet itself. Because this inlet has been dredged in the past [prior to 1993], no resources will be impacted* (Kopper, 1979)" (referenced in Appendix L in USACE, 1993).

The Rockaway APE also includes creation of groins and lengthening of existing groins along the Atlantic Ocean shoreline, on the eastern portion of the Rockaway peninsula. Based on the preliminary construction design, constructing new or extending groins will require deepening of the seafloor up to 10-12 feet below existing grade, over a width of approximately 50 feet.



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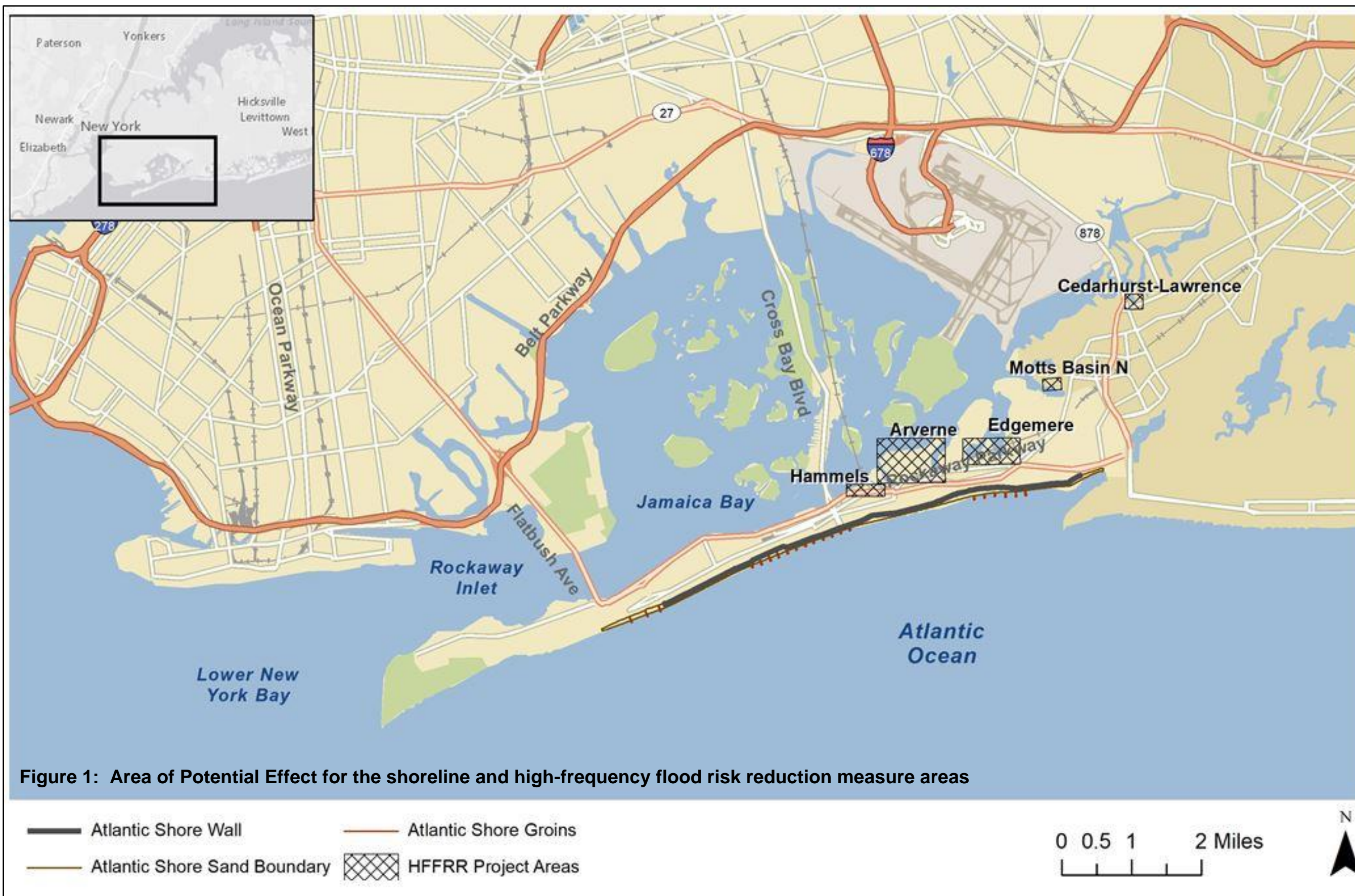
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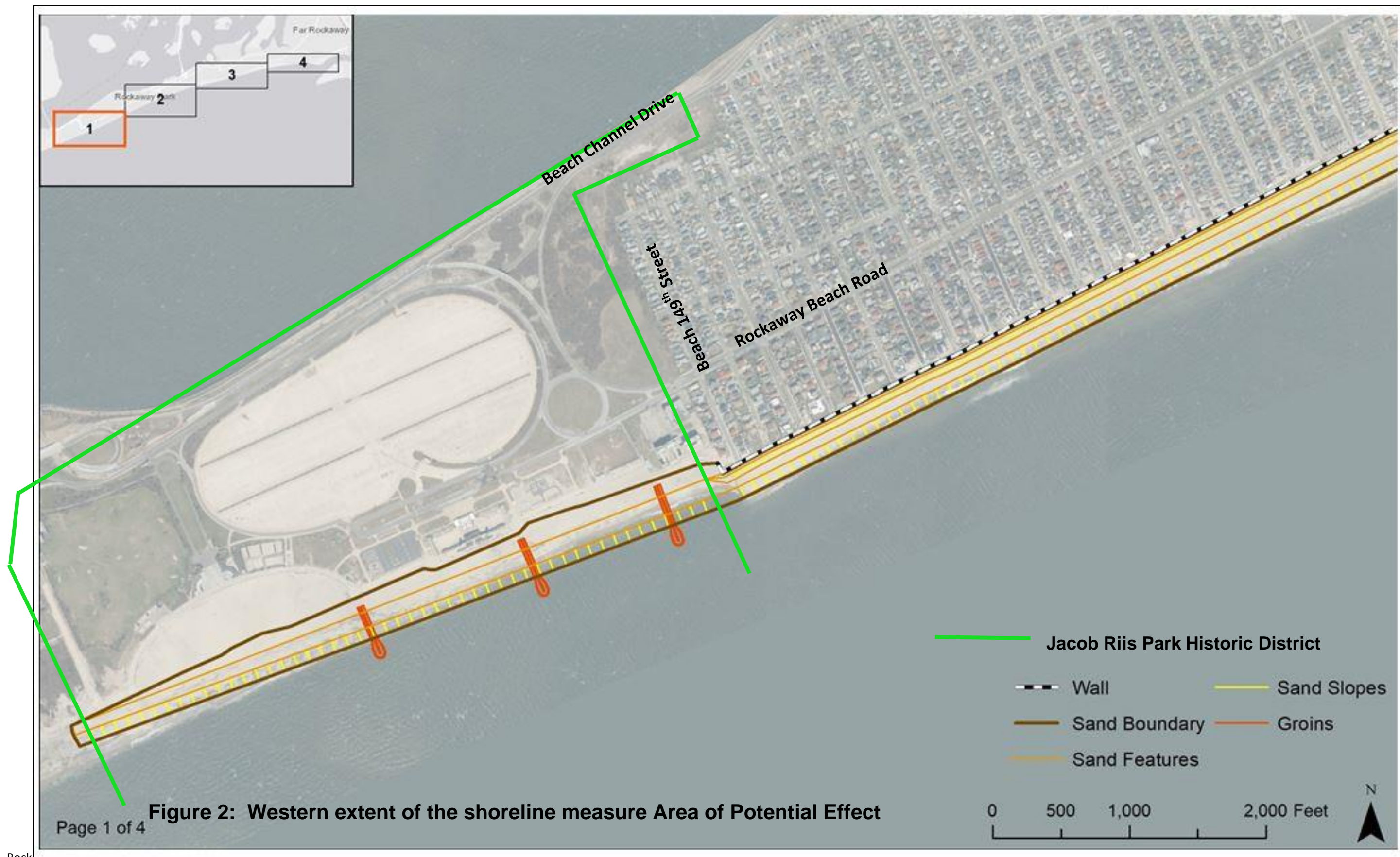


APPENDIX B

Area of Potential Effects Figures







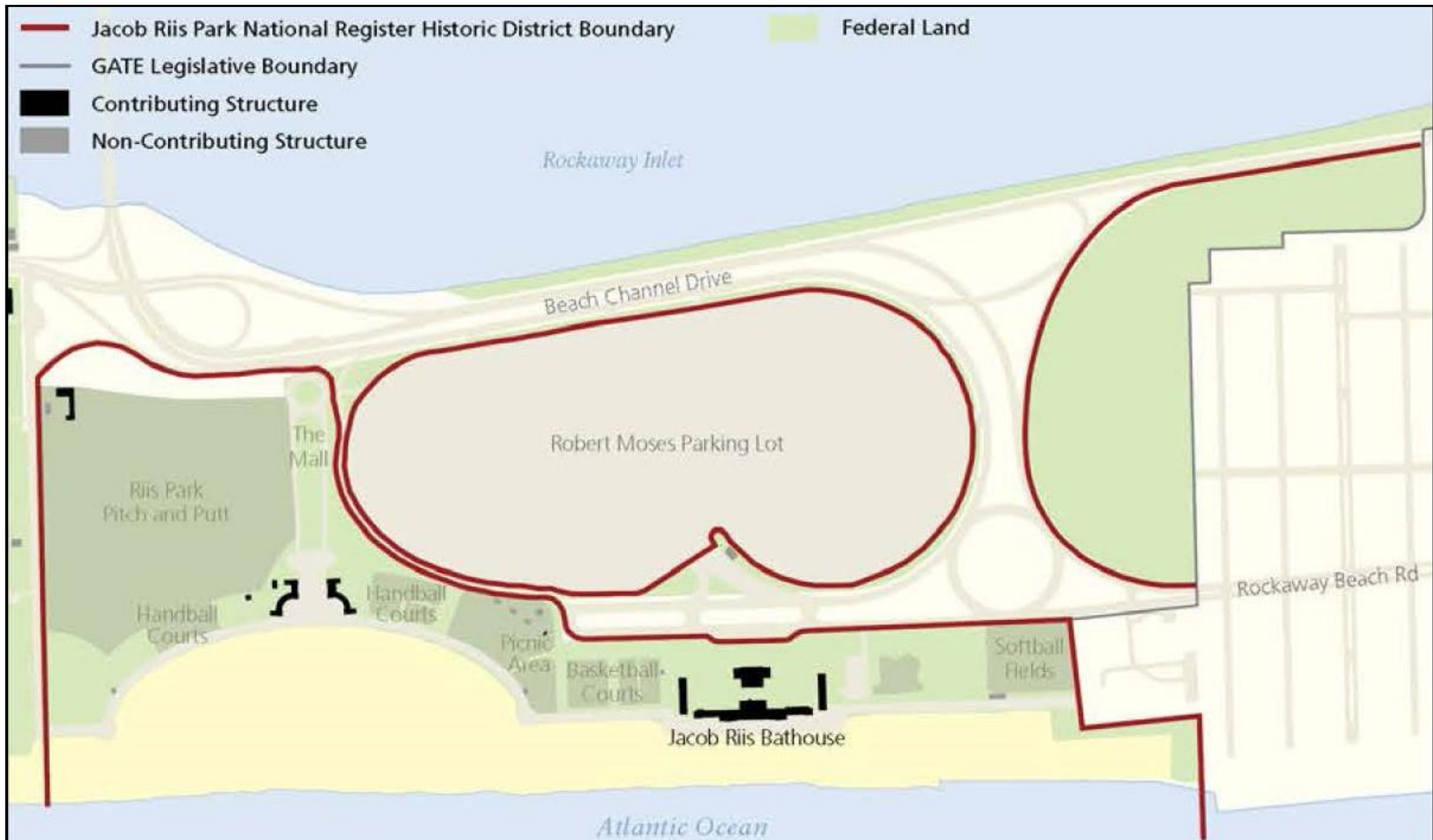


Figure 3: Jacob Riis Park Historic District

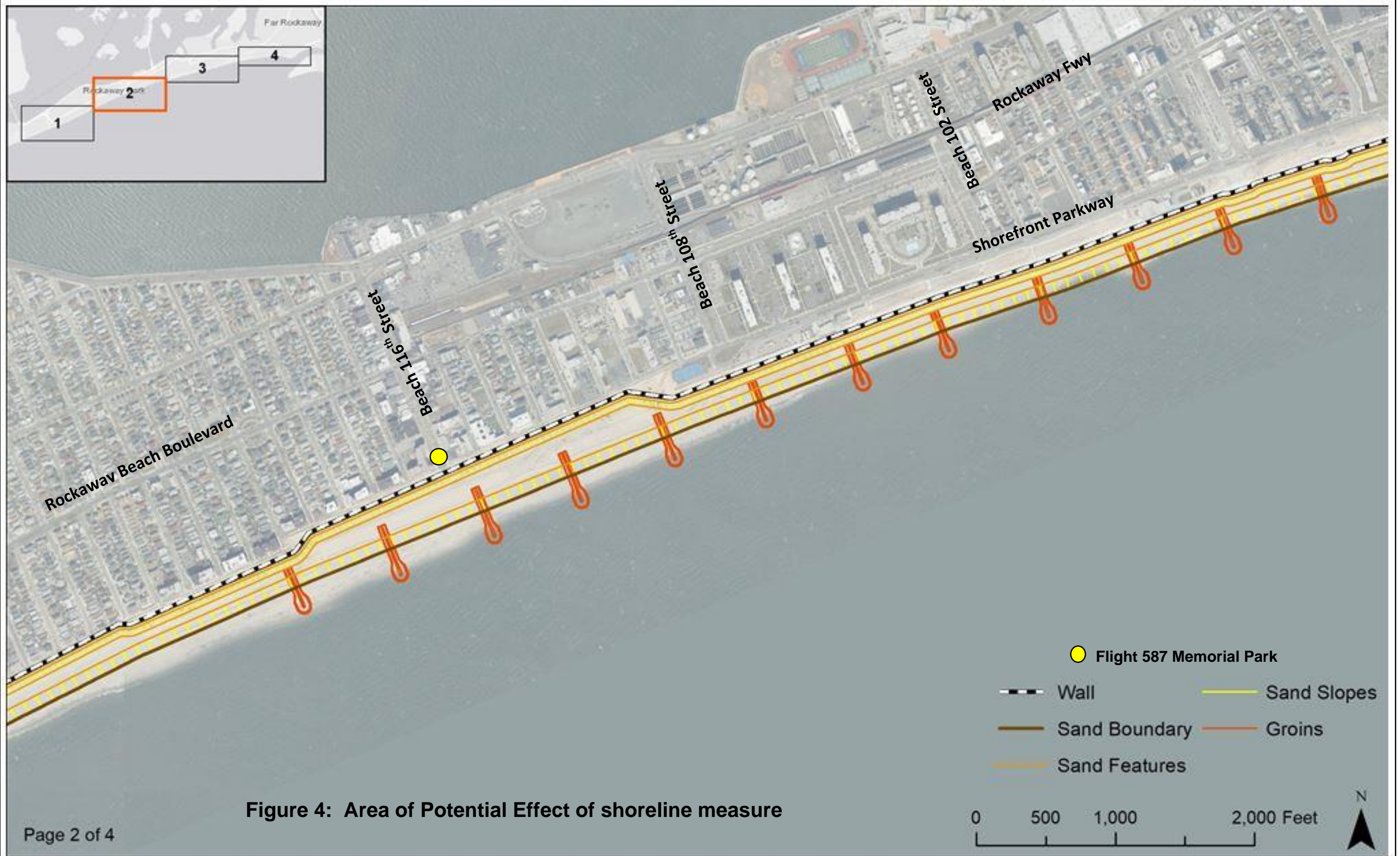
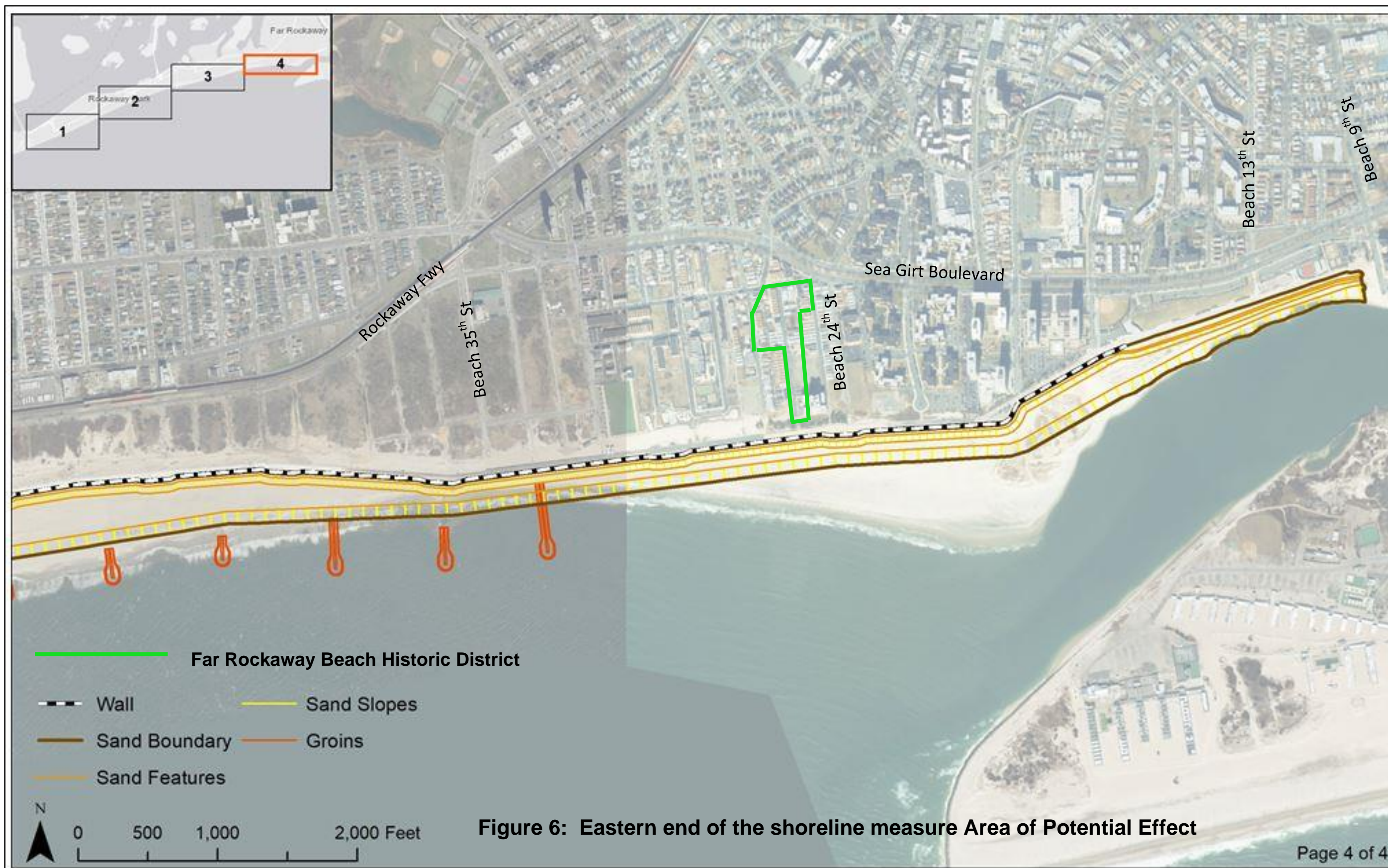
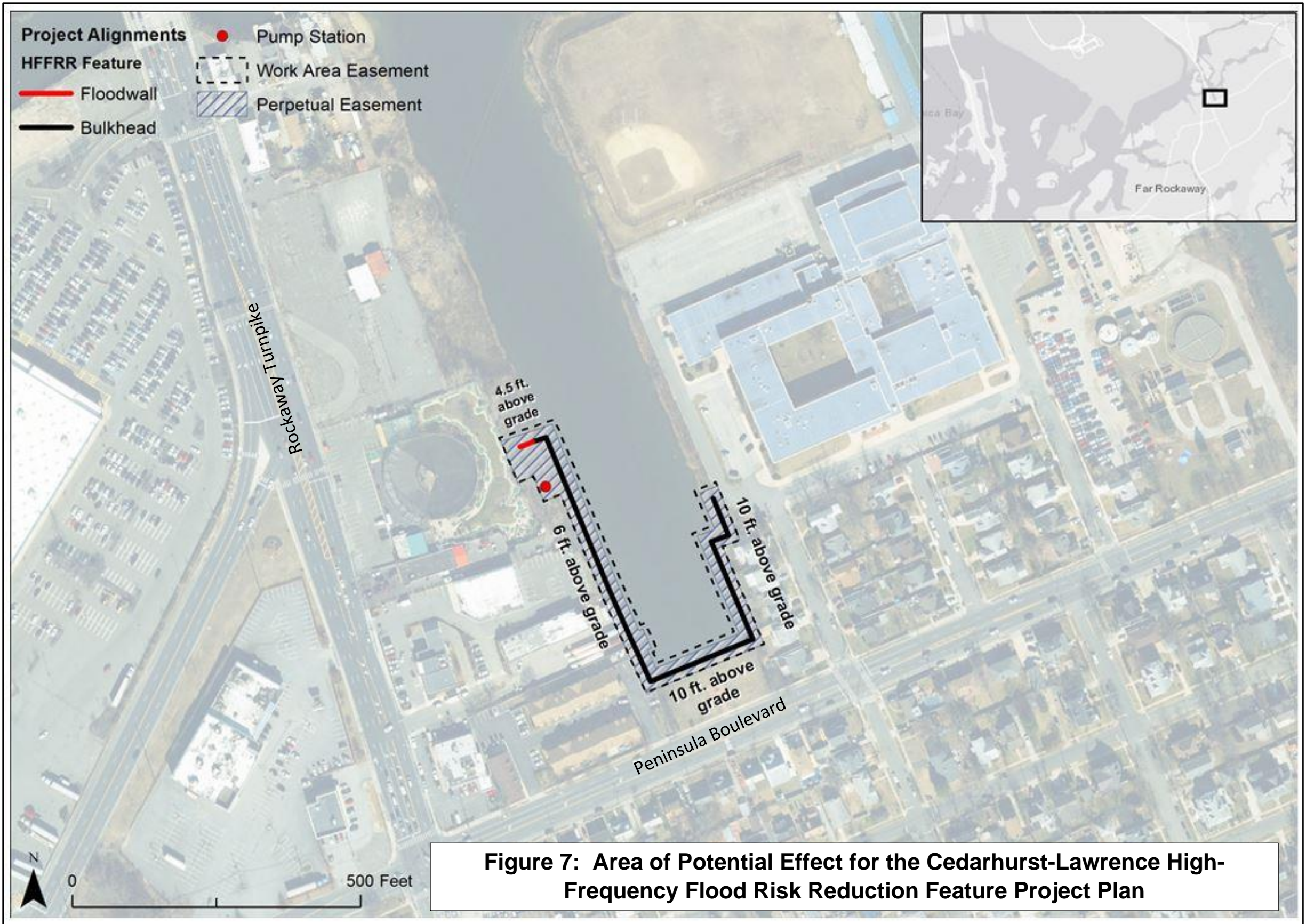
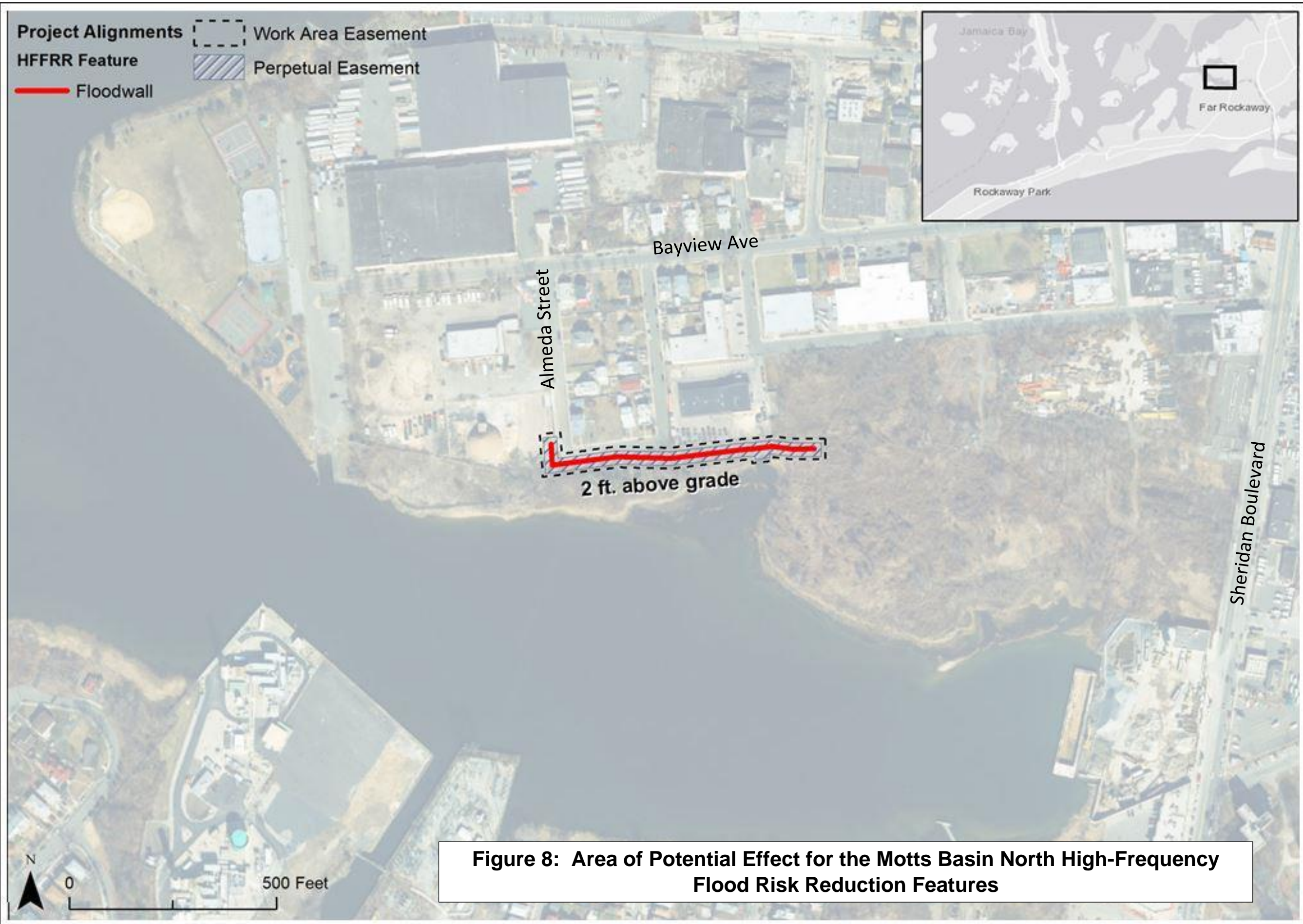


Figure 4: Area of Potential Effect of shoreline measure












NNBF Gains Areas

Planting

-  Salt Meadow Hay
-  Scrub-shrub
-  Smooth Cordgrass

Project Alignments

HFFRR Feature

-  Rock Sill
-  Floodwall
-  Berm
-  Hybrid Berm
-  Bulkhead
-  Road Ramp



Pump Station



Rock Sill Extent



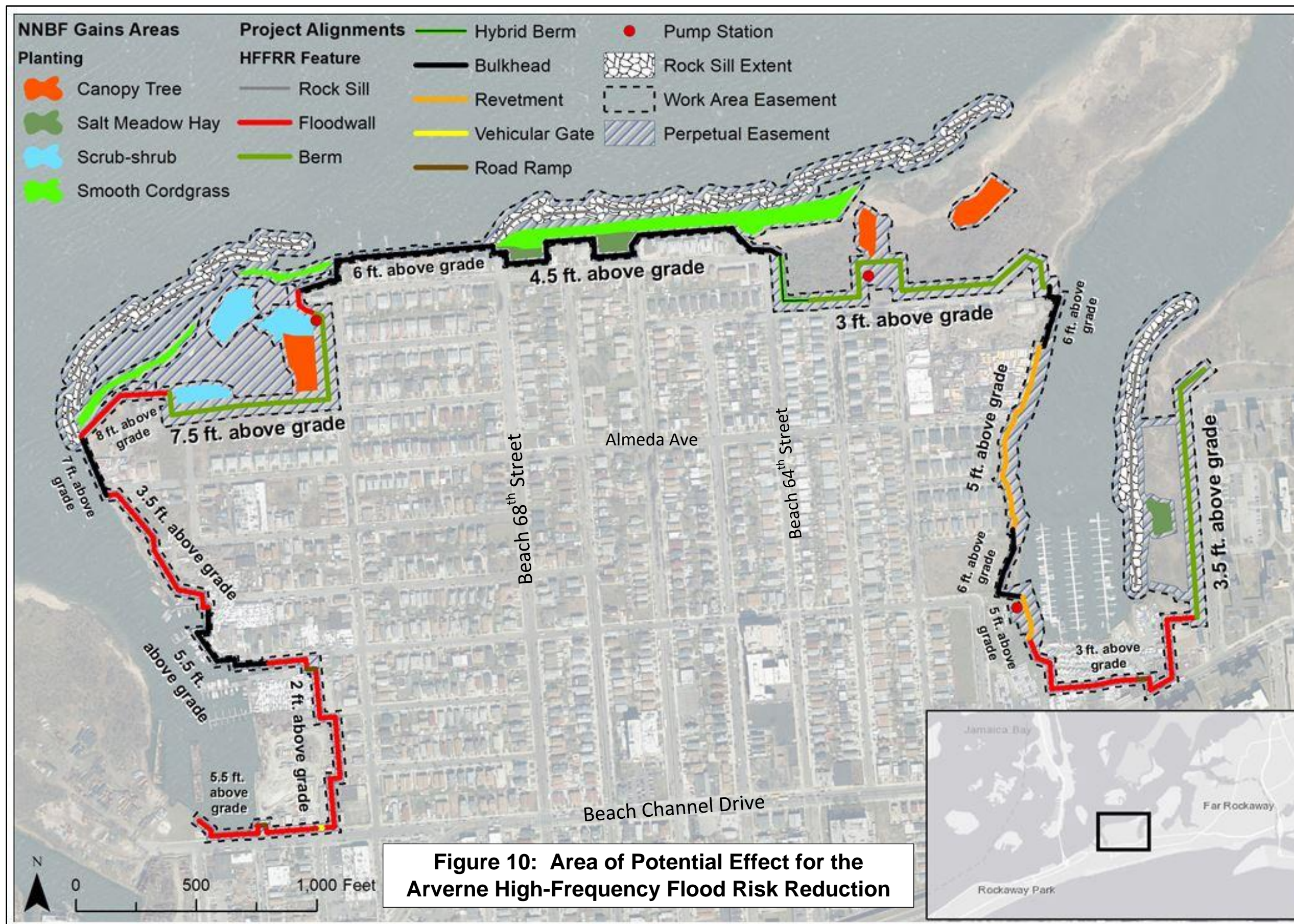
Work Area Easement

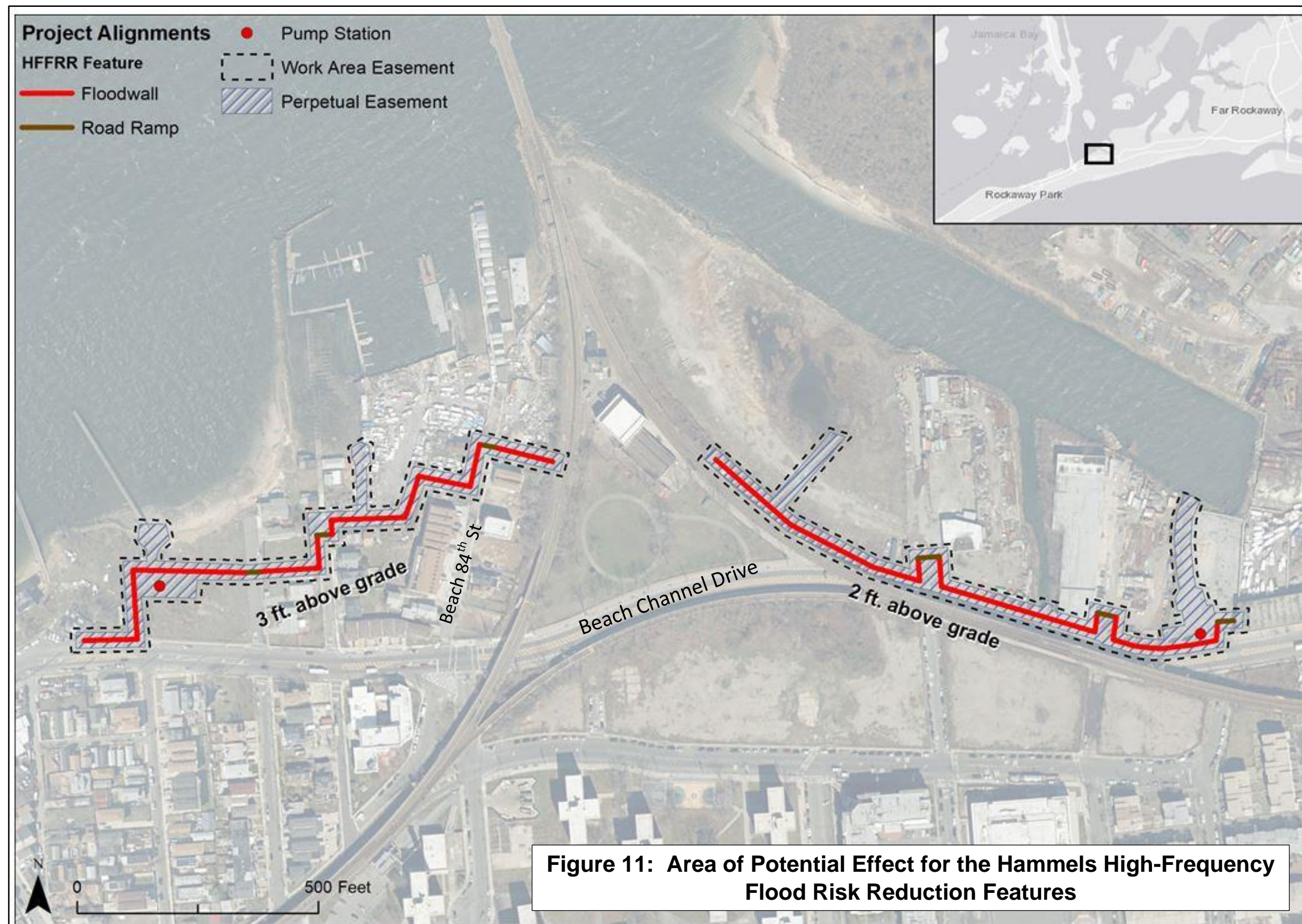


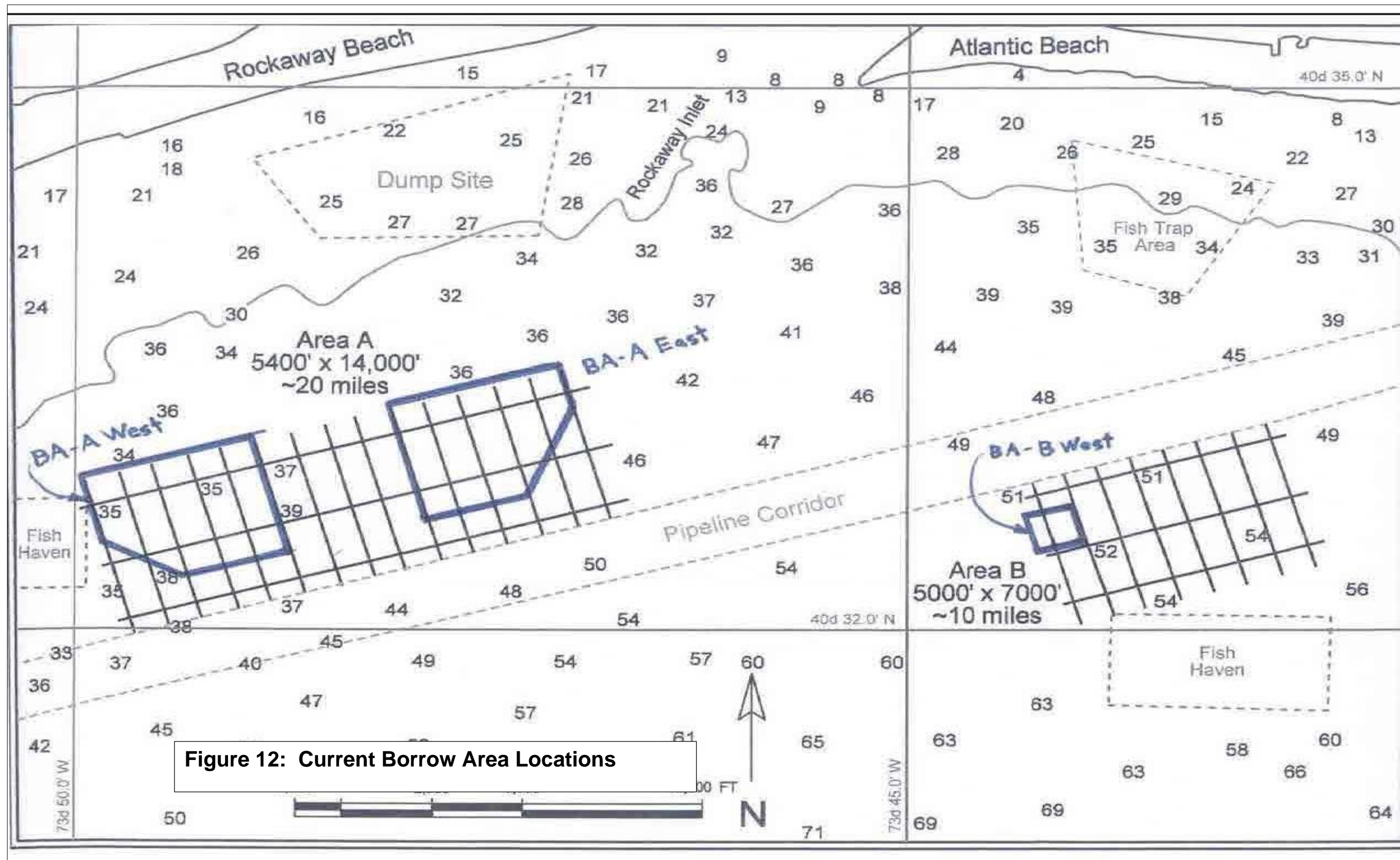
Perpetual Easement



Figure 9: Area of Potential Effect for the Edgemere High-Frequency Flood Risk Reduction Features







APPENDIX C

State Historic Preservation Office/
New York State Office of Parks, Recreation and Historic Preservation
Human Remains Discovery Protocol
(November 28, 2008)



**State Historic Preservation Office/
New York State Office of Parks, Recreation and Historic Preservation
Human Remains Discovery Protocol
(November 28, 2008)**

In the event that human remains are encountered during construction or archaeological investigations, the New York State Historic Preservation Office (SHPO) recommends that the following protocol is implemented:

- At all times human remains must be treated with the utmost dignity and respect. Should human remains be encountered work in the general area of the discovery will stop immediately and the location will be immediately secured and protected from damage and disturbance.
- Human remains or associated artifacts will be left in place and not disturbed. No skeletal remains or materials associated with the remains will be collected or removed until appropriate consultation has taken place and a plan of action has been developed.
- The county coroner/medical examiner, local law enforcement, the SHPO, the appropriate Indian Nations, and the involved agency will be notified immediately. The coroner and local law enforcement will make the official ruling on the nature of the remains, being either forensic or archaeological.
- If human remains are determined to be Native American, the remains will be left in place and protected from further disturbance until a plan for their avoidance or removal can be generated. Please note that avoidance is the preferred choice of the SHPO and the Indian Nations. The involved agency will consult SHPO and appropriate Indian Nations to develop a plan of action that is consistent with the Native American Graves Protection and Repatriation Act (NAGPRA) guidance.
- If human remains are determined to be non-Native American, the remains will be left in place and protected from further disturbance until a plan for their avoidance or removal can be generated. Please note that avoidance is the preferred choice of the SHPO. Consultation with the SHPO and other appropriate parties will be required to determine a plan of action.



Section 106 Coordination





New York State Office of Parks, Recreation and Historic Preservation

Division for Historic Preservation
P.O. Box 189, Waterford, New York 12188-0189
518-237-8643

Andrew M. Cuomo
Governor

Rose Harvey
Commissioner

May 15, 2013

Leonard Houston
U.S. Army Corps of Engineers, New York District,
Jacob K. Javits Federal Building
26 Federal Plaza
New York, New York 10278-0090

Re: CORPS
East Rockaway Beach Nourishment Project
East Rockaway Inlet
QUEENS, Queens County
13PR02248

Dear Mr. Houston:

Thank you for requesting the comments of the State Historic Preservation Office (SHPO). We have reviewed the project in accordance with Section 106 of the National Historic Preservation Act of 1966. These comments are those of the SHPO and relate only to Historic/Cultural resources. They do not include potential environmental impacts to New York State Parkland that may be involved in or near your project. Such impacts must be considered as part of the environmental review of the project pursuant to the National Environmental Policy Act and/or the State Environmental Quality Review Act (New York Environmental Conservation Law Article 8).

Based upon this review, it is the SHPO's opinion that your project will have No Effect upon cultural resources in or eligible for inclusion in the National Registers of Historic Places.

If further correspondence is required regarding this project, please be sure to refer to the OPRHP Project Review (PR) number noted above.

Sincerely,

Ruth L. Pierpont
Deputy Commissioner for Historic Preservation



DEPARTMENT OF THE ARMY
NEW YORK DISTRICT, CORPS OF ENGINEERS
JACOB K. JAVITS FEDERAL BUILDING
26 FEDERAL PLAZA
NEW YORK, N.Y. 10278-0090

Reply to
Environmental Analysis Branch

May 3, 2013

Ms. Ruth L. Pierpont, Director
Historic Preservation Field Services Bureau Office
New York State Offices of Parks, Recreation and Historic Preservation
Pebbles Island – P.O. Box 189
Waterford, NY 12188-0189

RE: USACE East Rockaway Beach Nourishment Project
Dredging of East Rockaway Inlet

Dear Ms. Pierpont:

The U.S. Army Corps of Engineers, New York District (NY District) under the emergency provisions under Public Law (PL) 84-99, Flood and Coastal Storm Emergencies and PL 113-2 (Repair) and The Disaster Relief Appropriations Act – 2013 (Restore), at the request of New York State, is in the process of restoring damages to Rockaway Beach caused by Hurricane Sandy so as to restore protection to the community before the next storm season. The Atlantic Coast of Long Island New York project sustained considerable damages from Hurricane Sandy between October 28 and 30, 2012. It is critical that the rehabilitation is carried out rapidly to return protection to the affected communities and infrastructure.

For the repair and restoration activities at Rockaway Beach, the District anticipates placing approximately 3.5 Million cy/yds of sand along 6.2 miles of shoreline between Beach 19th street and Beach 149th street, all areas where we have historically placed sand in the past. The existing project constructed under the prior Section 934 effort consisted of building a 100-foot wide berm to an elevation of +10 feet National Geodetic Vertical Datum of 1929 (NGVD) (Enclosure 2-3: Proposed project scope, location and borrow area location).

The District's dredging procurement strategy is as follows:

CONTRACT 1A: The specifications will include utilization of a cutter head dredge to obtain 800,000 c/yds of East Rockaway Inlet sand. The District anticipates award of this contract can be made in Mid-May. Sand placement would be for Rockaway Beach and start early June in the vicinity of the end groin around Beach 89th, and move west to Beach 149th. This is primarily to address the most critical sand losses, and to avoid potential piping plover nesting areas in the eastern half of the project.

CONTRACT 1B: This action would be for 2.8 Million c/yds of additional sand to complete Rockaway Beach using sand from the previously used offshore borrow area via a hopper dredge,

to complete the full Restoration of Rockaway Beach to design conditions. Contract award would likely not be until the June timeframe, because of additional Federal procedural reviews required when contracts near \$50 Million in scope.

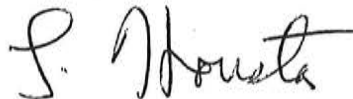
Federal undertakings will comply with the Archaeological and Historical Preservation Act of 1974 (16 USC 469-469c), the Abandoned Shipwreck Act of 1987 (PL 100-298; 43 USC 2101-2106), The National Historic Preservation Act of 1966, as amended (16 USC 470) and the Advisory Council on Historic Preservation's implementing regulations 36CFR800 (protection of Historic Properties). Section 106 of the National Historic Preservation Act requires Federal agencies to provide the State Historic Preservation Officer (SHPO), as agent to the Advisory Council on Historic Preservation, reasonable opportunity to evaluate and comment on any Federal undertaking.

In a letter dated August 9, 2000, the New York State Office of Parks, Recreation and Historic Preservation Office stated that it reviewed the project in accordance with Section 106 of the National Historic Preservation Act of 1966 and determined that the Corps' project will have no effect upon cultural resources in or eligible for inclusion in the National Registers of Historic Places (Enclosure 1).

Extensive archaeological recordation, archival documentation and investigations have been performed in the past for this project area in accordance with Section 106 of the National Historic Preservation Act, as amended, and its implementing regulations pursuant to 36 CFR 800.5. It is the NY District's opinion that the work as proposed will have no impacts to cultural resources and no further cultural resources studies will be undertaken if the plan remains as proposed.

Please review the enclosed documents that explain in further detail the scope of the emergency shoreline rehabilitation project and provide your comments in accordance with Section 106 of the National Historic Preservation Act, as amended, and its implementing regulations pursuant to 36 CFR. If you or your staff require additional information or have any questions, please contact Heather Morgan, Project Archaeologist at (917) 790-8730.

Sincerely,

A handwritten signature in dark ink, appearing to read "L. Houston", with a stylized, flowing script.

Leonard Houston
Chief, Environmental Analysis Branch

Enclosures:

- 1: USACE and NYSHPO coordination letter, August 2000
- 2: PL84-99 Project Information Report (PIR), Record of the Environment (REC) for Hurricane Sandy Response
- 3: FCCE Hurricane Sandy Rehab, Atlantic Coast of NYC, Rockaway and Coney Island Drawing



New York State Office of Parks, Recreation and Historic Preservation
Historic Preservation Field Services Bureau
Peebles Island, PO Box 189, Waterford, New York 12188-0189

518-237-8643

February 17, 2006

Christopher Ricciardi
Project Archaeologist
Environmental Analyst Branch
New York District
US Army Corps of Engineers
Jacob K. Javits Federal Building
New York, NY 10278-0090

Dear Mr. Ricciardi,

Re: CORPS
Rockaway Beach Nourishment Project
Dredging of East Rockaway Inlet
Queens County, NY
05PR05274 formerly 00PR2949

Thank you for requesting the comments of the New York State Historic Preservation Office (SHPO) with regard to the potential for this project to affect significant historical/cultural resources. SHPO had previously reviewed the report *Remote Sensing Survey of the Proposed Borrow Area for the East Rockaway Reformulation Project, Queens County, New York* prepared by Panamerican Consultants, Inc. in September 2005. Based on that review, SHPO had asked for additional information to address the potential for submerged prehistoric sites. In response you have provided SHPO with extensive coring information that had been collected for proposed borrow Area A. Based on those logs, SHPO has no further concerns regarding this issue.

Please contact me at extension 3291, or by e-mail at douglas.mackey@oprhp.state.ny.us, if you have any questions regarding these comments.

Sincerely

Douglas P. Mackey
Historic Preservation Program Analyst
Archaeology



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, NEW YORK DISTRICT
JACOB K. JAVITS FEDERAL BUILDING
26 FEDERAL PLAZA
NEW YORK, NY 10278-0090

February 15, 2006

Environmental Analysis Branch

Ms. Ruth L. Pierpont, Director
Historic Preservation Field Services Bureau
New York State Office of Parks, Recreation and Historic Preservation
Peebles Island - P.O. Box 189
Waterford, New York 12188-0189

RE: CORPS
Rockaway Beach Nourishment Project
Dredging of East Rockaway Inlet
Queens, Queens County
00PR2949

Dear Ms. Pierpont:

The U.S. Army Corps of Engineers, New York District (Corps), is pleased to furnish you with the copy of portions of the Engineering Report, *Preliminary Investigation – Borrow Area Identification and Investigation for the East Rockaway Inlet to Rockaway Inlet and Jamaica Bay, New York Reformulation Study*. This report details the coring samples taken within the proposed Borrow Area A for the East Rockaway Project.

As per your request for information with regard to the undertaking studies for previously buried land surfaces, according to the study report sand cores taken to a depth of twenty feet did not reveal indications of stratified levels. The samples were fairly uniform in their composition. No discernable intrusions and/or inclusions were uncovered. The lack of stratigraphy in the samples supports the notion that the removal of sand to the recommended depth of twenty feet will not disturb potentially buried stratified surfaces. The uniformity of the samples helped to make Borrow Area A the choice for sand mining for the proposed project. Based on this information, additional studies for the potential to uncover buried land surfaces were not required in our Scope of Work.

If you have further questions, please contact the Project Archaeologist, Dr. Christopher Ricciardi at (917) 790-8630 or christopher.g.ricciardi@usace.army.mil.

Sincerely,

Leonard Houston
Chief, Environmental Analysis Branch

Enclosure



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, NEW YORK DISTRICT
JACOB K. JAVITS FEDERAL BUILDING
26 FEDERAL PLAZA
NEW YORK, NY 10278-0090

November 22, 2005

Environmental Analysis Branch

Ms. Ruth L. Pierpont, Director
Historic Preservation Field Services Bureau
New York State Office of Parks, Recreation and Historic Preservation
Peebles Island - P.O. Box 189
Waterford, New York 12188-0189

RE: CORPS
Rockaway Beach Nourishment Project
Dredging of East Rockaway Inlet
Queens, Queens County
00PR2949

Dear Ms. Pierpont:

The U.S. Army Corps of Engineers, New York District (Corps), is pleased to furnish you with the final copy of, *Remote Sensing Survey Of the Proposed Borrow Area for the East Rockaway Reformulation Project, Queens County, New York Project*.

As per your letter dated October 24, 2005, the Corps thanks you for your comments and agreement with the assessment of the report with regard to the East Rockaway Borrow Area Project. The Corps is currently preparing the supplemental data that your office requested with regard to Coring Sample Information and will provide that information shortly.

Once again, thank you for your participation in the Section 106 process with regard to the East Rockaway Reformulation Project.

Sincerely,

Leonard Houston
Chief, Environmental Analysis Branch

Enclosure



New York State Office of Parks, Recreation and Historic Preservation
Historic Preservation Field Services Bureau
Peebles Island, PO Box 189, Waterford, New York 12188-0189

518-237-8643

October 24, 2005

Christopher Ricciardi
Project Archaeologist
Environmental Analyst Branch
New York District
US Army Corps of Engineers
Jacob K. Javits Federal Building
New York, NY 10278-0090

Dear Mr. Ricciardi,

Re: CORPS
Rockaway Beach Nourishment Project
Dredging of East Rockaway Inlet
Queens County, NY
00PR2949

Thank you for requesting the comments of the New York State Historic Preservation Office (SHPO) with regard to the potential for this project to affect significant historical/cultural resources. SHPO has reviewed the report *Remote Sensing Survey of the Proposed Borrow Area for the East Rockaway Reformulation Project, Queens County, New York* prepared by Panamerican Consultants, Inc. in September 2005. Based on this review, SHPO offers the following comments.

1. SHPO concurs with the recommendations concerning the three identified potential shipwrecks.
2. Although the report addresses the potential for submerged prehistoric sites, and discusses potential ways to identify landforms that may contain such sites, there appears to be no actual attempt to identify such landforms, or detailed discussion of why this may not be appropriate for this project. Please provide further details on this potential and why the identified survey or analysis was not completed

Please contact me at extension 3291, or by e-mail at douglas.mackey@oprhp.state.ny.us, if you have any questions regarding these comments.

Sincerely

Douglas P. Mackey
Historic Preservation Program Analyst
Archaeology



New York State Office of Parks, Recreation and Historic Preservation
Historic Preservation Field Services Bureau
Peebles Island, PO Box 189, Waterford, New York 12188-0189

518-237-8643

August 11, 2003

Nancy Brighton
US Army Corps of Engineers
Jacob Javits Federal Building
New York, NY 10278-0090

Dear Ms. Brighton:

Re: CORPS
Rockaway Beach Project
T-Groing Placements
Brooklyn, Kings County, New York
03PR03715

Thank you for requesting the comments of the State Historic Preservation Office (SHPO) with regard to the potential for this project to affect significant cultural/historical resources. SHPO has reviewed the report "Draft Report - Cultural Resources Assessment of T-Groin Placement, Atlantic Coast of New York, East Rockaway Inlet to Rockaway Inlet, and Jamaica Bay, Queens County, New York, Section 934" prepared by Panamerican Consultants, Inc. in June 2000. Based on this review, SHPO concurs with the recommendations of the report for limited Phase 1B underwater investigation .

Please contact me at extension 3291 if you have any questions regarding these comments.

Sincerely

Douglas P. Mackey
Historic Preservation Program Analyst
Archaeology



New York State Office of Parks, Recreation and Historic Preservation
Historic Preservation Field Services Bureau
Peebles Island, PO Box 189, Waterford, New York 12188-0189

518-237-8643

October 29, 2002

Leonard Houston
Corps of Engineers
New York District
Jacob Javits Federal Building
New York, New York 10278-0090

Re: CORPS
Rockaway Beach Shoreline – Beach
Renourishment Projects/Rockaway Beach, East
Rockaway Inlet
Brooklyn/Queens, Kings/Queens County
02PR04702

Dear Mr. Houston:

Thank you for requesting the comments of the State Historic Preservation Office (SHPO). We have reviewed the project in accordance with Section 106 of the National Historic Preservation Act of 1966.

Based upon this review, it is the SHPO's opinion that your project will have No Effect upon cultural resources in or eligible for inclusion in the National Registers of Historic Places.

If further correspondence is required regarding this project, please be sure to refer to the OPRHP Project Review (PR) number noted above.

Sincerely,

Ruth L. Pierpont
Director

RLP:cmp



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
NEW YORK DISTRICT, CORPS OF ENGINEERS
JACOB K. JAVITS FEDERAL BUILDING
NEW YORK, N.Y. 10278-0090

September 20, 2002

Environmental Analysis Branch

Ms. Ruth L. Pierpont, Director
Historic Preservation Field Services Bureau
New York State Office of Parks, Recreation and Historic Preservation
Peebles Island - P.O. Box 189
Waterford, New York 12188-0189

RE: CORPS
Rockaway Beach Project
Brooklyn, Kings County
89PR1188

CORPS
East Rockaway Inlet Channel Dredging
Queens County
92PR1171

Public Notice No. 00-ERIMDSN

CORPS
Beach Nourishment Rockaway Beach/Channel
Dredge East Rockaway Inlet
Queens, Queens County
00PR2949

Dear Ms. Pierpont:

The U.S. Army Corps of Engineers, New York District (Corps), in its continuing effort to nourish the beaches along the Rockaway Beach shoreline as part of the above referenced Beach Erosion Control and Hurricane Protection Project for the East Rockaway Inlet, Queens County, New York (89PR1188), proposes to place material dredged from Borrow Area #2 along the shoreline between Beach 19th Street and Beach 148th Street (92PR1171; Enclosure 1). This renourishment will be the final sand placement as part of the 89PR1188 Project. These proposed actions are also described in the above referenced Public Notice issued June 16, 2000, by the Corps (Enclosure 2).

As part of previous coordination efforts for the Beach Erosion Control and Hurricane Protection project, the placement of sand on the beach from Beach 19th Street to Beach 148th Street has been determined to have no effect on historic properties (Enclosures 3 and 6). In addition, the use of material from Borrow Area 2 was also determined to have no effect on historic properties (Enclosures 3, 4 and 5). The proposed sand placement will occur from October 2003 through February 2004.

Please review the enclosed materials and provide your comments in accordance with Section 106 of the National Historic Preservation Act, as amended, and its implementing regulations 36 CFR 800, by November 1, 2002. If you have any questions or require additional information, please contact Mr. Chris Ricciardi, Project Archaeologist, at 212-264-0204. Thank you for your assistance.

Sincerely,


for Leonard Houston
Chief, Environmental Analysis Branch

Enclosures



**US Army Corps
of Engineers**

New York District
26 Federal Plaza
New York, N.Y. 10278
ATTN: CENAN-OP-ST

Public No

Enclosure 2

In replying refer to:

Public Notice No. 00 ERIMDSN

Published: 6/16/00

Expires: 7/17/00

**EAST ROCKAWAY INLET, NEW YORK FEDERAL NAVIGATION PROJECT
MAINTENANCE DREDGING
and
SUPPLEMENTAL NOURISHMENT FOR THE FEDERAL BEACH EROSION CONTROL
AND HURRICANE PROTECTION PROJECT FOR EAST ROCKAWAY INLET TO
ROCKAWAY INLET AND JAMAICA BAY, NEW YORK**

TO WHOM IT MAY CONCERN:

Pursuant to Section 404 (33 U.S.C. 1344) of the Federal Water Pollution Control Act (amended in 1977 and commonly referred to as the Clean Water Act) and Section 10 of the Rivers and Harbors Act, notice is hereby given that the U.S. Army Engineer District, New York proposes to perform maintenance dredging of the Federal Navigation Channel in East Rockaway Inlet (Attachment 1) with placement of dredged material along Rockaway beach. In addition, New York District is planning to perform a supplemental nourishment cycle for the Beach Erosion Control and Hurricane Protection Project for East Rockaway Inlet to Rockaway Inlet and Jamaica Bay, New York. This would require dredging of the borrow area 2 (Attachment 2) and an intermediate area (East Rockaway Inlet Borrow area) adjacent to the western boundary of the scheduled maintenance dredging limits. The dredged material will be placed along Rockaway Beach.

FEDERAL PROJECT AUTHORIZED:

The Federal maintenance dredging project for East Rockaway Inlet Navigational channel was authorized by the Rivers and Harbors Act of 1930.

The Federal Beach Erosion Control and Hurricane Protection Project for East Rockaway Inlet to Rockaway Inlet and Jamaica Bay, New York was authorized by the Flood Control Act of 1965 and subsequently modified in 1974 by the Water Resources Development Act (WRDA) and in 1986 in accordance with the authority provided by Section 934 of the WRDA.

FEDERAL PROJECT DESCRIPTION:

The existing Federal navigation project provides for a channel, 12 feet deep at mean low water, 250 feet wide from a 12 foot depth contour in the Atlantic ocean to a 12 foot depth contour in East Rockaway Inlet, and a 4,250 foot long jetty on the eastern side of the inlet. The channel is about 1.4 miles long.

It should be noted that due to the rapid shoaling nature of the East Rockaway inlet, advance maintenance measures are being considered, including: 1) maintaining a previously constructed deposition basin with a variable width of 150 - 270 feet which is directly parallel to the entire western boundary of the channel; and 2) maintaining a second deposition basin with a maximum width of 200 feet and length of about 0.4 miles directly parallel to the eastern boundary of the outer portion of the channel. Advance maintenance dredging of 14 feet plus 2 feet allowable overdepth has been performed for the entire channel during past maintenance operations and is planned for the proposed maintenance dredging.

In order to maximize the amount of sand available for beachfill, supplemental dredging and nourishment for the Beach Erosion Control and Hurricane Protection Project for East Rockaway Inlet to Rockaway Inlet and Jamaica Bay, New York will be performed. The sand for the supplemental nourishment will be dredged from an intermediate area west of the western deposition basin described above, and placed on the beaches between B27th and B40th Streets. The dimensions of this area would be 300 feet by 0.4 miles long.

Additionally, to provide beachfill in the vicinity of Beach 90th Street, the Beach Erosion Control and Hurricane Protection Project authority would be utilized to dredge a 0.22 square mile portion of a borrow area approximately 1 mile offshore (identified as borrow area number 2) to a depth of no greater than 20 feet below existing grade. This material would be placed onto the beaches between B96th and B110th Streets.

DESCRIPTION OF PROPOSED FEDERAL ACTION:

The first proposed action by the U. S. Army Engineer District, New York is the future maintenance dredging of the Federal Navigation Channel and deposition basins in East Rockaway Inlet. Approximately 210,000 cubic yards of sand will be dredged from the inlet and used in a beneficial manner as beachfill, placed along severely eroded areas of the Rockaway beach shoreline. Maintenance dredging of the channel is generally accomplished by hydraulic or similar plant. The entire channel will generally not require maintenance dredging; only areas where shoaling has reduced the depth of the channel will require dredging. The

project was last dredged in 1998, with the removal of about 218,000 cubic yards with placement along the shoreline (Rockaway Beach) west of the inlet. The currently proposed action is intended to provide a safe navigation route through the inlet and to utilize the sand dredged from the inlet in a beneficial manner as replenishment for the nearby shoreline.

The second proposed action by the New York District is the supplemental nourishment which requires dredging an intermediate area west of the western deposition basin and the borrow area 2 and placing the material as beach erosion control and hurricane protection along severely eroded areas of the Rockaway Beach shoreline. This action was last performed in 1996 when a total of about 2,700,000 cubic yards were dredged from an offshore borrow site and placed along Rockaway beach shoreline. For the currently proposed action a combined total of approximately 700,000 cubic yards of sand is expected to be dredged with about 300,000 cubic yards being removed from the intermediate area adjacent to the navigation channel and deposition basins, and the remaining quantity coming from the borrow area 2.

PLACEMENT SITE:

The dredged material from the proposed actions shall be placed along the beaches west of the inlet. Specifically, material dredged from East Rockaway Inlet, including the intermediate area, shall be placed on the beaches between B27th and B40th Streets; material dredged from the offshore borrow area shall be placed between B96th and B110th Streets. Between maintenance operations the bypassed sand placed at the feeder beach would be carried by littoral drift to feed down-drift beaches. The maintenance dredging operation would thus serve to place sand trapped in the channel back into the normal littoral movement that naturally replenishes the western beaches, while maintaining a safe channel for navigation. The beach nourishment operation would serve as replenishment to severely eroded areas of the Rockaway Beach shoreline.

ENVIRONMENTAL IMPACT ASSESSMENT:

The New York District has done a review of the Environmental Assessment (EA) for the maintenance dredging of East Rockaway Inlet project, dated October 1998, which updated an EA prepared in 1993. The EA prepared in 1993 had updated an Environmental Impact Statement that was prepared in September 1973 for maintenance dredging of East Rockaway Inlet Federal Navigation channel. It was determined that maintenance dredging of East Rockaway Inlet with placement of the sand as nourishment along the nearby shoreline of the designated beach would have no significant adverse environmental impact on water quality, marine

resources, wildlife, endangered species, recreation, aesthetics and flood protection of the area.

An update of the 1998 EA and an update of Section 404(b)(1) of the Clean Water Act 40 CFR 230 will be prepared.

In addition, New York District has also done a review of the Environmental Assessment for borrow area dredging and beach nourishment, dated 1993, which updated an EA prepared in 1973. It was determined that borrow area dredging with placement of sand as nourishment along the nearby shoreline of the designated beach would have no significant adverse environmental impact on water quality, marine resources, wildlife, endangered species, recreation, aesthetics and flood protection of the area.

An update of the 1993 EA and an update of Section 404(b)(1) of the Clean Water Act 40 CFR 230 will be prepared.

ALTERNATIVES TO THE PROPOSED ACTION:

a. No Dredging - The no dredge alternative would result in the continued shoaling of the inlet, which will eventually lead to the loss of accessibility for those activities that depend upon the inlet for water transportation.

b. USEPA designated East Rockaway Inlet Placement Site - The inlet placement site is located within a short distance from the inlet. The Corps has used this inlet placement site in the past for placement of sand dredged from the East Rockaway Inlet Federal Channel. While this alternative will potentially provide littoral drift to feed the local beaches, its action would not provide the direct benefit of placing the material on the nearby shoreline of a designated beach.

c. No Beach Nourishment - The no nourishment alternative would result in continued erosion of the Rockaway Beach shoreline, which will eventually undermine the structures of the State property and increase the potential for storm damage due to wave action and flooding.

d. Alternative to Borrow Area 2 - Utilization of the Borrow Areas 1A or 1B, which are described in the May 1993, "East Rockaway Inlet to Rockaway Inlet and Jamaica Bay, New York, Final Reevaluation Report (Section 934 of WRDA 1986)," is not economically feasible for this supplemental nourishment action due to the lack of access to Borrow Area 1A (dredging would be required to provide access) and availability of an adequate quantity of material at Borrow Area 1B. In addition, the location of both sites would establish a higher unit price per cubic yard due to the greater pumping distance.

GRAIN SIZE ANALYSES:

Results of grain size analyses performed on samples collected within the project area have indicated that the material to be deposited is predominantly sand (greater than 90% sand). Therefore, the proposed dredged material would be physically compatible for beach placement, and placement on the beach would be consistent with existing laws and regulations.

MISCELLANEOUS INFORMATION:

Pursuant to Section 7 of the Endangered Species Act (16 U.S.C. (531)) and based upon a review of the latest published version of the threatened and endangered species listing, a preliminary determination is that the activity under consideration will not affect those species listed (piping plover), or proposed for listing (roseate tern) or their critical habitat, if the work is performed after 15 September and before 1 April. This will avoid the critical time frame for piping plover nesting, as determined by the U.S. Fish and Wildlife Service.

There are no known sites within the surrounding area that are eligible for or included in the National Register of Historic Places. Presently no known archaeological, scientific, prehistorical or historical data are expected to be lost by work accomplished under the required dredging.

Water Quality Certifications (WQC) have been obtained from the New York State Department of Environmental Conservation in accordance with Section 401 of the Clean Water Act, for maintenance dredging of East Rockaway Inlet and beach nourishment involving dredging of borrow area 2, with material from both operations being placed at Rockaway Beach. An amendment to the beach nourishment WQC will be obtained prior to dredging of the intermediate area (East Rockaway Inlet borrow area) with placement of dredged material at Rockaway Beach.

Pursuant to Section 307 of the Coastal Zone Management Act of 1972 as amended [16 USC 1456(C)], for activities conducted or supported by a federal agency in a state which has a federally approved coastal Zone Management (CZM) program, the Corps will submit a determination that the proposed project is consistent with the State CZM program to the maximum extent practicable. The Corps will request the State's concurrence with that determination. For activities within the coastal zone of the State of New York, project information is available from the Consistency Coordinator, New York State Department of State, Division of Coastal Resources and Waterfront Revitalization, Coastal Zone Management Program, 41 State Street, Albany, New York 12231, Telephone (518) 474-3642.

In compliance with Section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act (1996 amendments), an Essential Habitat Assessment will be prepared and submitted to the National Marine Fisheries Service for review and comments.

The proposed work is being coordinated with the following Federal, State and Local Agencies:

U. S. Environmental Protection Agency

U. S. Department of Commerce, National Marine Fisheries Service

U. S. Department of the Interior, Fish and Wildlife Service

U. S. Coast Guard, Third Coast Guard District

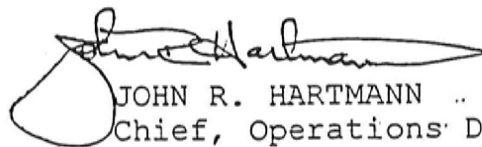
New York State Department of Environmental Conservation

New York State Department of State

ALL COMMENTS REGARDING THIS ACTIVITY MUST BE PREPARED IN WRITING AND MAILED TO REACH THIS OFFICE AT THE ADDRESS ON THE FRONT PAGE BEFORE THE EXPIRATION DATE OF THIS NOTICE, otherwise, it will be presumed that there are no objections to the activity.

Any person who has an interest which may be affected by the placement of this dredged material may request a public hearing. The request must be submitted in writing to the District Engineer within the comment period of this notice and must clearly set forth the interest which may be affected and the manner in which the interest may be affected by the activity. It should be noted that information submitted by mail is considered just as carefully in the process and bears the same weight as that furnished at a public hearing.

It is requested that you communicate the foregoing information concerning the proposed work to any persons known by you to be interested and who have not received a copy of this notice. If you have any questions, please do not hesitate to contact Mr. William Vanterpool of this office at (212) 264-9032.



JOHN R. HARTMANN
Chief, Operations Division

Enclosure

1. East Rockaway Inlet
2. Borrow Area 2



Bernadette Castro
Commissioner

New York State Office of Parks, Recreation and Historic Preservation
Historic Preservation Field Services Bureau
Peebles Island, PO Box 189, Waterford, New York 12188-0189

518-237-8643

August 9, 2000

Leonard Houston
Acting Chief, Environmental Analyst Branch
U.S. Army Corps of Engineers
New York District
Jacob K. Javits Federal Building
New York, New York 10278-0090

Dear Mr. Houston:

Re: CORPS
Beach Nourishment Rockaway Beach/Channel
Dredge East Rockaway Inlet
Queens, Queens County
00PR2949

Thank you for requesting the comments of the State Historic Preservation Office (SHPO). We have reviewed the project in accordance with Section 106 of the National Historic Preservation Act of 1966.

Based upon our review, it is the SHPO's opinion that your project will have No Effect upon cultural resources in or eligible for inclusion in the National Register of Historic Places.

If further correspondence is required regarding this project, please be sure to refer to the OPRHP Project Review (PR) number noted above.

Sincerely,

Ruth L. Pierpont
Director

RLP:bsd



DEPARTMENT OF THE ARMY
NEW YORK DISTRICT, CORPS OF ENGINEERS
JACOB K. JAVITS FEDERAL BUILDING
NEW YORK, N.Y. 10278-0090

REPLY TO
ATTENTION OF

July 17, 2000

Environmental Analysis Branch
Environmental Assessment Section

Ms. Ruth L. Pierpont
Director
Historic Preservation Field Services Bureau
New York State Office of Parks, Recreation and
Historic Preservation
Peebles Island
P.O. Box 189
Waterford, New York 12188-0189

RE: CORPS
Rockaway Beach Project
Brooklyn, Kings County
89PR1188

CORPS
East Rockaway Inlet Channel Dredging
Queens County
92PR1171

Public Notice No. 00-ERIMDSN

Dear Ms. Pierpont;

The U.S. Army Corps of Engineers, New York District (New York District), in its continuing effort to nourish the beaches along the Rockaway Beach shoreline as part of the above referenced Beach Erosion Control and Hurricane Protection Project for East Rockaway Inlet to Rockaway Inlet and Jamaica Bay, Queens County, New York (89PR1188), proposes to place material dredged from the nearby East Rockaway Inlet Federal channel and a borrow area adjacent to the Federal channel along the shoreline between Beach 27th Street and Beach 40th Street (92PR1171; Enclosure 1). These proposed actions are also described in the above referenced Public Notice issued June 16, 2000, by the New York District (Enclosure 2).

As part of previous coordination efforts for the Beach Erosion Control and Hurricane Protection project, the placement of sand on the beach from Beach 19th Street to Beach 149th Street has been determined to have no effect on historic properties (Enclosure 3). In addition, the use of material from the Federal channel, Borrow Area 2 and portions of Borrow Area 1A and 1B were also determined to have no effect on historic properties (Enclosures 4, 5 and see Enclosure 3). As part of the current renourishment effort, an additional source of sand, the East Rockaway Inlet Borrow Area, located along the west side of the Federal channel will be utilized, in association with sand from the Federal channel and Borrow Area 2.

The East Rockaway Inlet Borrow Area is located in a very active inlet with continuous scouring and shoaling of sand on the inlet bottom. The inlet borrow area is about 300 feet wide and approximately 2120 feet long (Enclosure 6). The New York District proposes to remove approximately 300,000 cubic yards from the inlet borrow area for placement on the shoreline between Beach 27th Street and Beach 40th Street. The inlet borrow area and the adjacent channel would be dredged to about 14 feet below mean low water plus 2 feet allowable overdredge. According to a sample of soundings taken since 1985, the East Rockaway Inlet Borrow Area has varied in depths from 12.5 - 19 feet below MLW in 1985 to 8 - 15 feet MLW in 1996 to between 1 - 14 feet MLW in May 2000 (Enclosures 7 and 8; see also Enclosure 6).

According to the Cultural Resources Reconnaissance Report prepared for the Atlantic Coast of Long Island from East Rockaway Inlet to Jones Inlet (Pickman 1993), East Rockaway Inlet and the west end of Long Beach Island were situated in their current locations by the beginning of the 20th century (Enclosure 9). According to maps from the 19th century, the present location of East Rockaway Inlet was once the location of the western end of the former "Far Rockaway Beach", which had extended east toward Long Beach Island (Pickman 1993:23-24). By 1931, the inlet's position became fixed with the construction of seven timber groins and a timber bulkhead built on the east side of the inlet. Two years later, the East Rockaway Inlet jetty was built by the U.S. Army Corps of Engineers and the sand captured by the new jetty buried the earlier structures. A stone seawall that extended along the east shore of the inlet and connected to the landward end of the jetty was built in 1952 (Pickman 1993:32).

Although the area of the inlet was once a part of Rockaway Beach, the subsequent erosion of the area to a depth several feet below mean low water and continued scouring of the inlet would indicate there is no potential for the identification of significant cultural resources that are eligible for the National Register. It is also likely that the initial dredging and periodic maintenance of the Federal channel may have impacted sections of the borrow area adjacent to the channel. The New York District has determined that the dredging of the East Rockaway Inlet Borrow Area will have no effect on historic properties.

Please review the enclosed materials and provide your comments in accordance with Section 106 of the National Historic Preservation Act, as amended, and its implementing regulations 36 CFR 800, by August 7, 2000. If you have any questions or require additional information, please contact Ms. Nancy Brighton, Project Archaeologist, at 212-264-2198. Thank you for your assistance.

Sincerely,

A handwritten signature in dark ink, appearing to read "L. Houston", written in a cursive style.

Leonard Houston
Acting Chief, Environmental Analysis Branch

Enclosures



Bernadette Castro
Commissioner

New York State Office of Parks, Recreation and Historic Preservation
Historic Preservation Field Services Bureau
Peebles Island, PO Box 189, Waterford, New York 12188-0189

518-237-8643

Nancy

May 10, 2000

Frank Santomauro, P.E.
Chief, Planning Division
U.S. Army Corps of Engineers
New York District
Jacob K. Javits Federal Building
New York, New York 10278-0090

Dear Mr. Santomauro:

Re: CORPS
Rockaway Inlet to Norton's Point Reconnaissance
Brooklyn, Kings County
89PR1188

Thank you for requesting the comments of the State Historic Preservation Office (SHPO). We have reviewed the project in accordance with Section 106 of the National Historic Preservation Act of 1966.

Based upon our review, it is the SHPO's opinion that your project will have No Effect upon cultural resources in or eligible for inclusion in the National Register of Historic Places.

If further correspondence is required regarding this project, please be sure to refer to the OPRHP Project Review (PR) number noted above.

Sincerely,

Ruth L. Pierpont
Director

RLP:bsd



DEPARTMENT OF THE ARMY
NEW YORK DISTRICT, CORPS OF ENGINEERS
JACOB K. JAVITS FEDERAL BUILDING
NEW YORK, N.Y. 10278-0090

REPLY TO
ATTENTION OF

April 27, 2000

Environmental Analysis Branch
Environmental Assessment Section

J. Winthrop Aldrich
New York State Office of Parks, Recreation
and Historic Preservation
Historic Preservation Field Services Bureau
Peebles Island
P.O. Box 189
Waterford, New York 12188-0189

RE: CORPS
Rockaway Beach Project
Brooklyn, Kings County
89PR1188

Dear Mr. Aldrich;

Reference is made to the remote sensing survey conducted in 1993 by WCH Industries, Inc., in association with the Darling Marine Center, for the U.S. Army Corps of Engineers, New York District (New York District), within Borrow Area 2 as part of the above referenced project (Enclosure 1). The survey identified 34 side scan sonar targets and magnetometer anomalies throughout the borrow site. At the time of the survey, the New York District determined that the anomalies and targets would be avoided during sand removal and no further work was undertaken. Borrow Area 2 was not used as part of the initial beach fill activities for the project.

In an effort to identify enough suitable material for subsequent renourishment of the beach, the New York District has re-evaluated Borrow Area 2 and has determined that all of the borrow site must be used to provide the amount of material needed for beach placement. The New York District instructed Panamerican Consultants, Inc. (PCI), to relocate and investigate each of the targets and anomalies identified in the 1993 survey. Enclosed is the report entitled "Underwater Inspection of Targets, Borrow Area 2, Atlantic Coast of Long Island, East Rockaway Inlet to Rockaway Inlet, Queens County, New York, Storm Damage Reduction Project" that provides a description and the results of this investigation (Enclosure 2).

PCI was able to relocate 18 of the 34 targets originally recorded in 1993. All of the 18 relocated targets were identified as modern debris, specifically wire cable and concrete/rebar "bridge spans", that may have been intended for placement in the Rockaway Beach Artificial Reef located to the southwest of the borrow site. None of the targets are considered to be potentially significant submerged cultural resources. The 16 targets that are no longer present at their recorded locations were likely redeposited to other locations by either trawling activities, surf clam dredging, surge and/or current activity, or their identification was erroneous due to the

lack of contouring in the original survey. It has been determined that activities related to the dredging of Borrow Area 2 will not have an impact on any historically significant watercraft.

Please review the enclosed report and provide comments on this project to the New York District by May 31, 2000, in accordance with Section 106 of the National Historic Preservation Act, as amended, and its implementing regulation, 36 CFR 800. If you have any questions or require additional information, please contact Nancy Brighton at 212-264-2198. Thank you for your assistance.

Sincerely,

A handwritten signature in cursive script, reading "Frank Santomauro".

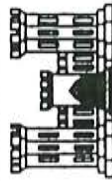
Frank Santomauro, P.E.
Chief, Planning Division

Enclosures

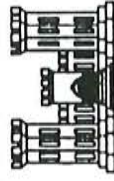
GAHAGAN & BRYANT ASSOCIATES, INC.
5803 KENNETT PIKE, SUITE D
CENTREVILLE SQUARE
WILMINGTON, DELAWARE 19807-1195
TEL. (302)652-4948 FAX. (302)655-9218
GBAWILMINGTON@GBA-INC.COM

GBA

ENGINEERS ★ SURVEYORS



DEPARTMENT OF THE ARMY
NEW YORK DISTRICT CORPS OF ENGINEERS
NEW YORK, N.Y. 10278-0090



SURVEY OF: **EAST ROCKAWAY, NY**
CONDITION SURVEY
ECHO SOUNDINGS

100 0 50 100 200 400

SCALE: 1 INCH = 100 FEET

PLOTTED BY:

J. DRAKE

DATE OF SURVEY:

27 - 30 APRIL 2000

SUBMITTED BY:

R. ROMAN

FIELD BOOKS:

NY-08-2000

APPROVED:

DATE:

17 MAY 2000

SHEET 3 OF 4

153000

REQ. NO. 2044

Enclosure 6

DEPARTMENT OF THE ARMY
NEW YORK DISTRICT CORPS OF ENGINEERS
NEW YORK, N. Y. 10007

SURVEY OF: EAST ROCKAWAY INLET, N.Y.
FINAL AFTER DREDGING
ECHO SOUNDINGS

SCALE ONE INCH = 100 FEET

BAR SCALE

PLOTTED BY:

P.P. WAMPT

DATE OF SURVEY:

AS SHOWN

SUBMITTED BY:

[Signature]
CHIEF OF PARTY

FIELD BOOKS:

13829, 13830, 13843, 13844

APPROVED:

[Signature]
CHIEF, SURVEY BRANCH

DATE

23 October 85

SHEET 1 OF 1

Enclosure 7

FIL

N 13/000

—System.



PROJECT CODE

PROJECT

MAINTENANCE DREDGING
EAST ROCKAWAY INLET

DRAWING TITLE

CONDITIONAL SURVEY

DRAWING NUMBER

GLDD / RZF1

PHASE

SHEET

SCALE

DRAWN

DESIGNED

1 in. = 100 ft.

J.L.H.

DATE

CHECKED

APPROVED

27-OCT-1996

Enclosure 8 1 of 1

E 2068500



GREAT LAKES
DREDGE & DOCK
COMPANY

PROJECT CODE

PROJECT

MAINTENANCE DREDGING
EAST ROCKAWAY INLET

DRAWING TITLE

CONDITIONAL SURVEY

DRAWING NUMBER

GLDD / RZF1

SHEET

PHASE

date 27 Oct 96

DRAWN

SCALE

1 in. = 100 ft.

J.L.H

DESIGNED

APPROVED

DATE

CHECKED

Enclosure 8 2 of 2

E 2070500

CULTURAL RESOURCES RECONNAISSANCE
ATLANTIC COAST OF LONG ISLAND
JONES INLET TO EAST ROCKAWAY INLET
CITY OF LONG BEACH, VILLAGE OF ATLANTIC BEACH,
LIDO BEACH AND POINT LOOKOUT AREAS, TOWN OF HEMPSTEAD
LONG BEACH ISLAND
NASSAU COUNTY, NEW YORK

92PR2416

by
Arnold Pickman

Submitted to:
U.S. Army Corps of Engineers
New York District

June 1993

Work Performed Under Contract No. DACW51-92-M-0636



Arnold Pickman
Principal Investigator

years of the twentieth, the buildings associated with the U.S. Life Saving Stations and the Long Beach and Point Lookout Hotels and cottages continued to be the only structures on Long Beach Island. A second life saving station, not shown on the 1873 map was opened in the Point Lookout section of Long Beach Island. It is shown on maps dating to 1878 (Figure 20) and 1886 (Figure 25a) located near the shoreline in what is now the Lido Beach area.

By the 1890's both the Long Beach and Point Lookout lifesaving stations had been moved from their original locations. The Point Lookout station was apparently moved from its original location on or near the beach to a site on the northern portion of the island (see Figures 27a and 27c) approximately opposite the western portion of Alder Island.

The Long Beach life saving station was apparently moved twice from its location as shown in 1873 (Figures 18b and 18d). The 1896 Hyde map (Figure 31a and 31b) shows both an "old" and relocated position of this station. However, the "old" location shown on the map apparently refers to a ca. 1880's site. As noted above, in 1873 the station was located in the Edwards/Riverside Boulevard area. It was probably relocated when the Long Beach Hotel was constructed on the original site in 1880. This ca. 1880 site was located in the vicinity of the present Neptune Avenue, which at that time would have been near the west side of Luce's inlet. The station was subsequently moved again to the "new" location as shown on the 1896 map (Figures 27a and 27b), which was on the west end of Long Beach, near the present location of New York Avenue. It should be noted that an 1898 coastal survey chart (Figures 28a and 28b) continues to show the life saving station west of Luce's Inlet. However, this location is most likely uncorrected from an earlier edition of this chart. The location of the site as shown on subsequent maps (e.g. Figures 29 and 30) is the same as the "new" site as shown on the 1896 map.

4. Long Beach Island Morphology - Late Nineteenth/Early Twentieth Century Changes

Prior to 1886 Luce's Inlet had been partially closed by a strip of beach, but still existed as a shallow cove extending southward from Hempstead Bay (see Figure 25a). As noted above, through the third quarter of the 19th century, Rockaway Beach extended eastward to Hog Island Inlet. A body of water known as the "Bay of Far Rockaway" separated Far Rockaway beach from the mainland. This configuration is shown on maps as late as 1886 (see Figure 25b).

It would appear that after 1886 a new inlet had formed near the present location of East Rockaway inlet, creating a new island between this inlet and Hog Island Inlet (see Figure 26a). An 1898 map (see Figure 28a) indicates this new inlet as "Little Inlet" and the new island as "Shelter Island", with Far Rockaway beach extending westward from "Little Inlet." After 1898 Hog Island Inlet closed, effectively extending Long Beach Island westward to East Rockaway Inlet. Thus by the first decade of the 20th century

(see Figures 29 - 31) the configuration of the western portion of Long Beach Island was close to that which now exists.

One source (Chief of Engineers 1929) states that the present East Rockaway inlet "is located at approximately the middle of the former long and narrow Bay of Far Rockaway", with the eastern end of the former Far Rockaway Beach now being incorporated into the present Long Beach Island. However, examination of the late 19th and early 20th century maps indicates that the present East Rockaway inlet is actually at the western end of the former "Far Rockaway Beach", with the present Reynolds Channel at the location of the former "Bay of Far Rockaway." Thus all of the late 19th century "Far Rockaway Beach", with the exception of its extreme western end, which was at the present location of the inlet, has apparently been incorporated into the present Long Beach Island.

On the eastern end of Long Beach Island, the 1851 Coastal Survey and 1859 Walling Maps (Figures 16 and 17a) had shown the west side of Jones Inlet aligned approximately with the east side of Alder Island. The 1873 Beers map (Figure 18a), reflects an apparent eastward shift of the eastern end of Long Beach Island and shows the western side of Jones Inlet aligned with the western portion of Meadow Island. However, a Coastal Survey map (Figure 20) indicates that by 1878 the Island's eastern end had once more retreated westward. This map also includes dashed lines which reflect shoreline changes occurring between 1878 and 1886. The northern portion of the eastern tip of Long Beach Island had evidently been eroded during this period with a narrow strip of land remaining on the southern shoreline. This strip extended eastward to once again approximately align with the western side of Meadow Island. This approximate configuration is also shown on the 1886 Beers map (Figure 25a).

Maps dating to to the 1890's and the first decade of the 20th century (Figures 26-31) show a similar configuration of the Point Lookout area to that shown on the ca. 1880's maps, with some minor changes, including an increase in the width of the Island.

At present the eastern end of Point Lookout is located some 2000-2500 feet further to the west than at the beginning of the twentieth century and is now aligned with the eastern portion of Alder Island (see Figure 71).

G. Early Twentieth Century Development

In 1898 a suit was brought by several individuals claiming ownership of Long Beach Island by virtue of a chain of purchases originating with John Hicks, who had purchased the land from a group of Hempstead freeholders in 1725. As noted above, a similar suit had been brought at the end of the 18th century. In 1902 the court again ruled that the ocean beach property was owned by the Town of Hempstead. This ruling cleared the way for the sale of Long Beach to private developers (Hazelton 1925:II:880).

steamboat dock. The dock on the north side of Point Lookout which was noted above also is not shown on any of the 20th century maps.

In 1939 a fishing pier was built at the foot of Magnolia Boulevard in Long Beach. This pier was destroyed during a hurricane in 1960 (Graf 1972:50). Graf (1972) notes that a new pier was built at this location. However, this pier has since been removed and no traces of either pier were noted during the reconnaissance.

J. Shore Protection Structures

The first shore protection structures on Long Beach were 51 wooden groins constructed in 1926 (Tolins 1956:110). These were extensively damaged by a severe storm in 1927, and extensive repairs were required (Tolins 1956:27). The ca. 1920's groins apparently were located only in the central portion of Long Beach. Graf (1972:25) indicates that the west end of Long Beach was not fully protected by groins until the 1940's.

Taney (1961:Table 4) indicates the dates of construction of shore protection structures in and near the study area as follows:

Long Beach	Groins and Bulkheads	1927
Long Beach	Groins	1937
Long Beach	Groins	1947
Lido Beach	Groins and Bulkheads	1930
Point Lookout	Groins and Bulkheads	1940
Atlantic Beach	Groins and Bulkheads	Before 1928
East Rockaway Inlet Jetty		1934

Additional data as to shore protection structures in the project area were presented by the U.S. Army Corps of Engineers (1965) and summarized as follows:

Point Lookout - Four timber groins were constructed by the Town of Hempstead in 1949. They were subsequently destroyed and replaced by three stone groins in 1953.

Lido Beach - A total of four stone groins were built by Long Beach on the Ocean Inc. This construction took place in 1930 (as indicated above) and also in 1933.

Long Beach - In addition to the construction noted above four timber groins were constructed in 1944. These were subsequently destroyed.

Atlantic Beach - 28 timber and 5 stone filled timber groins were constructed between 1928 and 1933. It is uncertain if these include the groins listed above as constructed pre-1928. Two additional stone-filled timber groins were constructed in 1947. All of these groins have either been replaced, removed, destroyed or buried.

The existing groins within the study area were constructed beginning in 1945 (U.S. Army Corps of Engineers 1989). Nyman (1985) noted that remains of at least some of the earlier wooden groins are apparently still present in the Long Beach area and are periodically uncovered as a result of wave action. Remains of a number of these groins were noted in the City of Long Beach portion of the study area during the reconnaissance (see Figures 53a and 53b).

The remains of a timber groin were also noted in the eastern portion of the Silver Point Park section of Atlantic Beach (Figure 53c). Two other timber groins and a timber bulkhead were noted a short distance to the east (Figure 53d). The latter are apparently associated with one of the beach clubs located immediately east of the Silver Point Park section (see Figure 56).

The first shore protection structures on the west shore of Jones Inlet were constructed in 1939. During the 1940's the Town of Hempstead constructed a stone seawall and 12 stone groins in the area.

Seven timber groins and a timber bulkhead were constructed on the east side of East Rockaway Inlet in 1931. In 1933-1934 The East Rockaway Inlet jetty was constructed by the U.S. Army Corps of Engineers. The earlier structures were buried beneath the sand trapped to the east of this jetty. A stone seawall built in 1952 extends along the east shore of the Inlet, connected to the landward end of the jetty.

K. Significant Standing Structures

Two existing Long Beach structures, the Granada Towers and the U.S. Post Office, are listed on the National Register of Historic Places (U.S. Army Corps of Engineers 1992). An additional structure is listed in the historic structures inventory maintained by the New York State Division of Parks, Recreation, and Historic Preservation. This is a private residence at 116 Washington Boulevard which supposedly dates to the late 19th century and is considered to be one of the first private homes built in Long Beach (Mintz 1979, included in Bouchard and Hartgen 1985). None of these structures will be affected by the proposed project.



New York State Office of Parks, Recreation and Historic Preservation
Historic Preservation Field Services Bureau
Peebles Island, PO Box 189, Waterford, New York 12188-0189

518-237-8643

March 18, 1993

Mr. Bruce A. Bergmann
Chief, Planning Division
Department of the Army
Corps of Engineers
New York District Office
Jacob K. Javits Federal Building
New York, New York 10278-0090

Dear Mr. Bergmann:

Re: CORPS
Rockaway Beach Project
Brooklyn, Kings County
89PR1188


Thank you for requesting the comments of the State Historic Preservation Office (SHPO). We have reviewed the East Rockaway Inlet to Rockaway Inlet and Jamaica Bay, Section 934 Project in accordance with Section 106 of the National Historic Preservation Act of 1966 and the relevant implementing regulations.

Based upon this review, it is the SHPO's opinion that this project will have No Effect upon cultural resources in or eligible for inclusion in the National Register of Historic Places. This determination is based on the condition that all potential cultural resources in Borrow Area 1A and 1B are avoided according to the recommendations of the Remote Sensing Survey report. This No Effect determination does not extend to the use of Borrow Area 2, which has not been surveyed.

We look forward to receiving and commenting on the results of the Remote Sensing Survey for Borrow Area 2 when that study has been completed.

If you have any questions, please call Robert Kuhn of our Project Review Unit at (518) 237-8643 Ext. 281.

Sincerely,


Julia S. Stokes
Deputy Commissioner for
Historic Preservation

JSS/RDK/JPW:gc



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
NEW YORK DISTRICT CORPS OF ENGINEERS
JACOB K. JAVITS FEDERAL BUILDING
NEW YORK, N.Y. 10278-0090

March 1, 1993

Environmental Analysis Branch
Environmental Assessment Section

Ms. Julia S. Stokes
Deputy Commissioner for Historic Preservation
New York State Office of Parks, Recreation, and
Historic Preservation
Agency Building 1
Empire State Plaza
Albany, New York 12238

Dear Ms. Stokes:

The New York District, Army Corps of Engineers (Corps) is conducting a study to determine Federal interest in participating in the cost of placing material (sand) dredged from two offshore borrow areas onto nearby Rockaway Beach, Queens, New York (Attachment 1). This work is part of a plan to prevent long term beach erosion along Rockaway Beach from Beach 19th to 149th Streets. The study has been authorized under Section 934 of the Water Resources Development Act of 1986.

Current project plans call for the restoration of Rockaway Beach from Beach 19th to Beach 149th Streets and for future nourishment of two feeder beaches, (Beach 25th Street to Beach 39th Street and Beach 86th Street to Beach 110th Street), at three 3-year intervals. Sand for the construction of the project and subsequent nourishment cycles will be dredged from two offshore borrow areas (Attachment 1).

The National Register of Historic Places lists no properties within the project area that are currently on the Register or that are eligible for inclusion. A cultural resource study, prepared as part of a maintenance dredging project, entitled "Cultural Resources Reconnaissance Dredging Project, East Rockaway Inlet, New York" was written by J. Stephen Kopper (Attachment 2). This report found that there were no prehistoric or historic archaeological sites within the beachfront area bounded by Beach 19th Street and Beach 149th Street.

In addition, the Corps has coordinated with your office regarding a project authorized by Section 933 of the Water Resources Development Act of 1986 that involved dredging sand from the East Rockaway Inlet navigation channel and placing it on two sections of Rockaway Beach (Attachment 3). After a copy of the aforementioned cultural resource survey report was forwarded to your office on June 25, 1992, the Corps received your response, dated July 7, 1992, of no concern with regards to the Section 933 project (Attachment 4).

The Corps has plans to utilize two offshore borrow sites during the initial and subsequent nourishment phases of the project. The first borrow area, Borrow Area 1A and 1B, is located offshore Coney Island, New York and to the west of Rockaway Inlet (Attachment 1). In November 1992, Dr. Warren Reiss and Ocean Surveys, Inc. conducted a remote sensing survey of this area using side scan sonar and a magnetometer (Attachment 5). This investigation identified 10 "potential cultural resources" and 1 "probable significant cultural resource" based upon magnetometer and side scan sonar data. The "probable significant cultural resource" may be one or more shipwrecks, possibly a wooden hulled vessel(s) with associated large ferrous objects, such as an engine or anchor. According to current project plans, all potential resources identified by this survey will be avoided during dredging.

Borrow area 2 (Attachment 1) is located offshore of the sand placement area. Parts of this borrow site may have been used to nourish the beach during the original project in the late 1970s and early 1980s. Dredging records, however, have not indicated which areas may or may not have been impacted. As a result, the Corps has plans to conduct a remote sensing survey of the entire borrow site. The results of this investigation will be coordinated with your office upon completion of this survey.

On the basis of current project plans and pending review by your office, the Corps is of the opinion that the Atlantic Coast of New York City, East Rockaway Inlet to Rockaway Inlet and Jamaica Bay, New York, Section 934 Project will have no effect on historic properties located on Rockaway Beach, from Beach 19th to 149th Streets, or within Borrow Areas 1A and 1B. Please provide us with Section 106 comments as pursuant to 36 CFR 800.5.

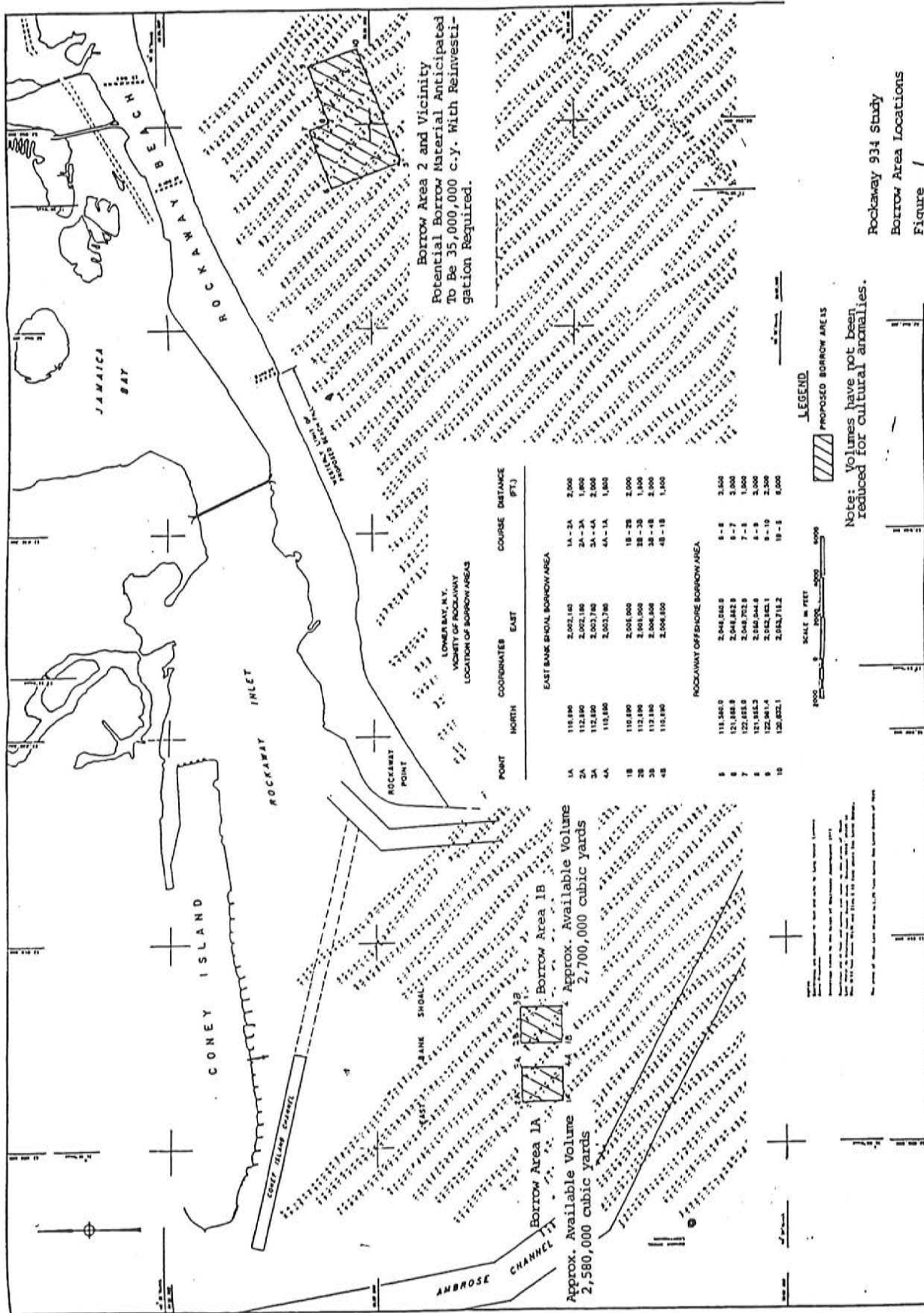
If you or your staff have any questions or require additional information, please contact Nancy Brighton, Project Archaeologist, (212)264-4663. Thank you for your assistance.

Sincerely,

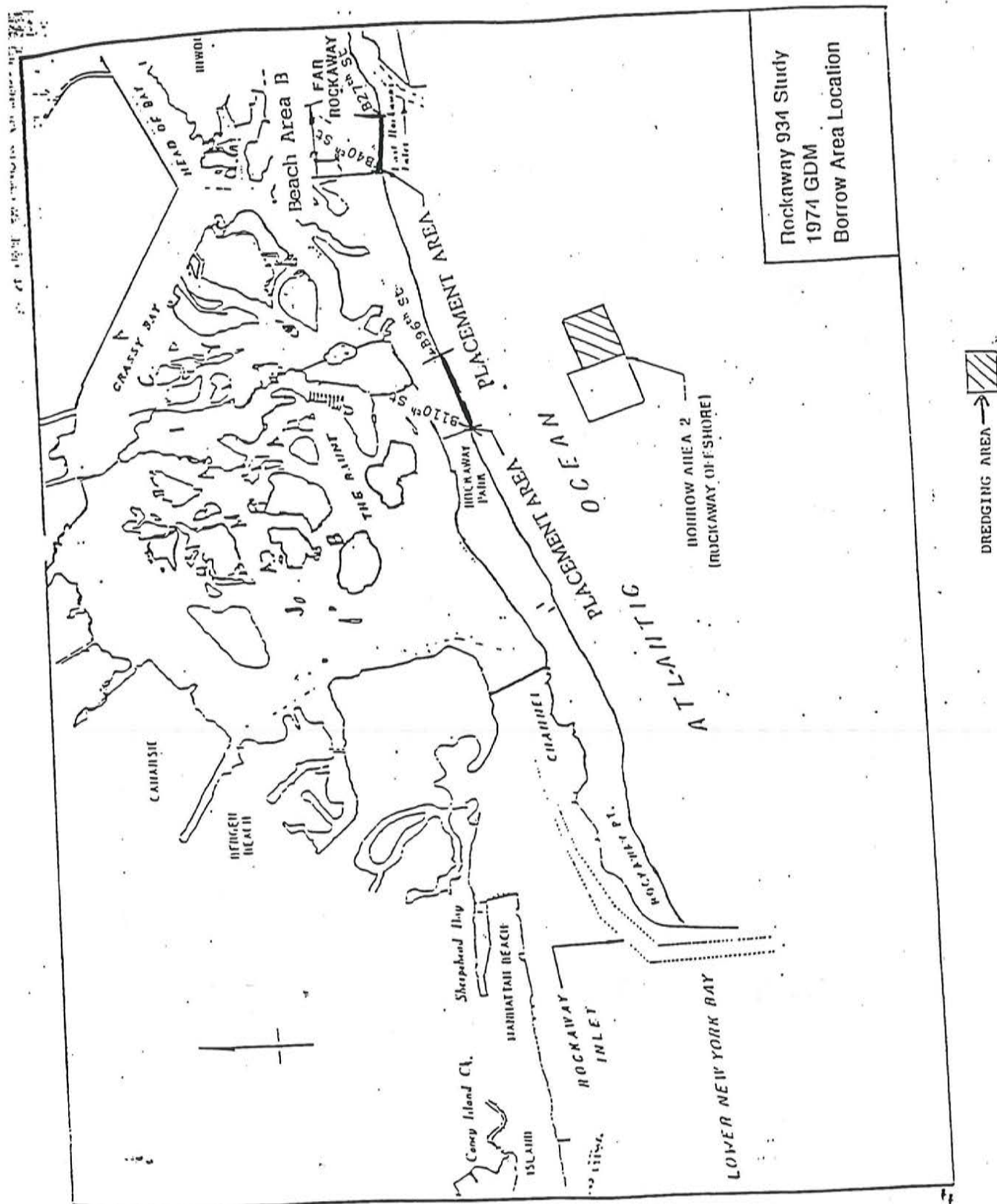


Bruce A. Bergmann
Chief, Planning Division

Attachments



Rockaway 934 Study
Borrow Area Locations
Figure 1
Reduced, not to scale



CULTURAL RESOURCES RECONNAISSANCE

DREDGING PROJECT
EAST ROCKAWAY INLET, NEW YORK

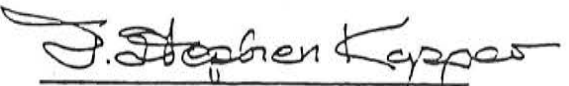
by

J. Stephen Kopper
Department of Anthropology, C.W. Post Center
Long Island University, Greenvale, NY 11548

May 10, 1979

Funded by the Department of the Army,
New York District Corps of Engineers,
26 Federal Plaza, New York, NY 10007

Prepared Under the Supervision of J. Stephen Kopper,
Principal Investigator


J. Stephen Kopper
Principal Investigator

REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
NEW YORK DISTRICT CORPS OF ENGINEERS
JACOB K. JAVITS FEDERAL BUILDING
NEW YORK, N.Y. 10278-0090

June 3, 1992

Environmental Assessment Section
Environmental Analysis Branch

Ms. Julia S. Stokes
Deputy Commissioner for Historic Preservation
New York State Office of Parks, Recreation, and Historic
Preservation
Agency Building 1
Empire State Plaza
Albany, New York 12238

Dear Ms. Stokes:

The New York District, Army Corps of Engineers (Corps) is conducting a study to determine Federal interest in participating in the cost of placing material (sand) dredged from the East Rockaway Inlet navigation channel, located in Queens County, New York, onto nearby Rockaway Beach (Attachment 1). This work is part of a scheduled maintenance dredging operation of the channel as well as an attempt to prevent long term beach erosion on a portion of Long Beach Island. The study has been authorized under Section 933 of the Water Resources Development Act of 1986.

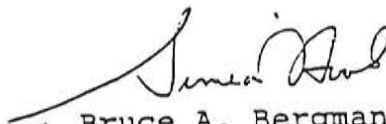
The Federal portion of the navigation channel begins to the southwest of Atlantic Beach, Long Beach Island, and proceeds in a north to northeasterly direction towards Rockaway where it terminates offshore, southwest of Beach 20th Street (Attachment 2). Maintenance dredging is necessary to prevent the build-up of shoals in the channel which create shallow depths and hazardous navigation conditions for local mariners. The area of the proposed placement of dredged material will be at one of two sections of Rockaway Beach in the Town of Far Rockaway. These sections are Beach 32nd Street to Beach 36th Street and Beach 56th to Beach 60th Street. Both are areas of intense erosion. Sand will be used to build up the existing beach to withstand wave and storm action (Attachment 3).

The National Register of Historic Places lists no properties within the project areas that are currently on the Register or that are eligible for inclusion. A cultural resource study, prepared as part of a similar maintenance

dredging project, entitled "Cultural Resources Reconnaissance Dredging Project, East Rockaway Inlet, New York" was written by J. Stephen Kopper (Attachment 4). This report found that there were no prehistoric or historic archaeological sites within the beachfront area bounded by Beach 19th Street and Beach 149th Street, which includes both proposed nourishment areas.

On the basis of current project plans and pending review by your office, the Corps is of the opinion that the Section 933, East Rockaway Inlet, New York Project will have no effect on historic properties. Please provide us with Section 106 comments as pursuant to 36 CFR 800.5.

If you or your staff have any questions or require further information on this project, please contact Nancy Brighton (212)246-4663. Thank you for your assistance.


h Bruce A. Bergmann
Chief, Planning Division

Attachments



New York State Office of Parks, Recreation and Historic Preservation
The Governor Nelson A. Rockefeller Empire State Plaza
Agency Building 1, Albany, New York 12238-0001

Orin Lehman
Commissioner

July 7, 1992

Mr. Bruce A. Bergmann
Chief, Planning Division
Department of the Army
Environmental Analysis Branch
Jacob K. Javits Federal Building
New York, New York 10278-0090

Dear Mr. Bergmann:

Re: CORPS
East Rockaway Inlet Channel
Dredging
Queens County
92PR1171

Thank you for requesting the comments of the State Historic Preservation Office (SHPO) concerning the property referenced above. The information which you submitted has been reviewed in accordance with Section 106 of the National Historic Preservation Act of 1966 and the relevant implementing regulations.

Based upon this review, the SHPO has no concerns regarding this project's impact on archeological resources.

If you have any questions, please call Vic DiSanto of our Project Review Unit at (518) 474-0479.

Sincerely,

David S. Gillespie
Director
Field Services Bureau

DSG/VJD:gc

ATLANTIC COAST OF NEW YORK CITY
EAST ROCKAWAY INLET TO ROCKAWAY INLET
AND JAMAICA BAY, NEW YORK
SECTION 934 STUDY
BORROW AREAS 1A AND B
REMOTE SENSING SURVEY

Prepared For:

NEW YORK DISTRICT
CORPS OF ENGINEERS
26 FEDERAL PLAZA
NEW YORK, NY 10278

Under Contract Number
DACW51-92-D-0003

Principal Investigator:

Warren C. Riess
Warren C. Riess, Ph.D.

February 11, 1993

Prepared By:

WCH Industries, Inc., 14 Felton Street, Waltham, Massachusetts 02154

In Association With

Boston Affiliates, Inc., 156 Milk Street, Boston, Massachusetts 02109



New York State Office of Parks, Recreation and Historic Preservation
The Governor Nelson A. Rockefeller Empire State Plaza
Agency Building 1, Albany, New York 12238-0001

July 7, 1992

Mr. Bruce A. Bergmann
Chief, Planning Division
Department of the Army
Environmental Analysis Branch
Jacob K. Javits Federal Building
New York, New York 10278-0090

Dear Mr. Bergmann:

Re: CORPS
East Rockaway Inlet Channel
Dredging
Queens County
92PR1171

Thank you for requesting the comments of the State Historic Preservation Office (SHPO) concerning the property referenced above. The information which you submitted has been reviewed in accordance with Section 106 of the National Historic Preservation Act of 1966 and the relevant implementing regulations.

Based upon this review, the SHPO has no concerns regarding this project's impact on archeological resources.

If you have any questions, please call Vic DiSanto of our Project Review Unit at (518) 474-0479.

Sincerely,

David S. Gillespie
Director
Field Services Bureau

DSG/VJD:gc



New York State Office of Parks, Recreation and Historic Preservation
The Governor Nelson A. Rockefeller Empire State Plaza
Agency Building 1, Albany, New York 12238-0001

June 19, 1992

Mr. Bruce A. Bergmann
Chief, Planning Division
Department of the Army
New York District, Corps of Engineers
Jacob K. Javits Federal Building
New York, New York 10278-0090

Dear Mr. Bergmann:

Re: CORPS
East Rockaway Inlet Channel Dredging
Queens County
92PR1171

Thank you for requesting the comments of the State Historic Preservation Office (SHPO) concerning the property referenced above. The information which you submitted has been reviewed in accordance with Section 106 of the National Historic Preservation Act of 1966 and the relevant implementing regulations.

Please submit the cultural resource management report cited in your letter to the SHPO for review. If you have any questions, please call Vic DiSanto at (518) 474-0479.

Sincerely yours,

David S. Gillespie
Director
Field Services Bureau

DSG/VJD:tr

received 6/25/92
EDY



DEPARTMENT OF THE ARMY
NEW YORK DISTRICT CORPS OF ENGINEERS
JACOB K. JAVITS FEDERAL BUILDING
NEW YORK, N.Y. 10278-0090

REPLY TO
ATTENTION OF

June 3, 1992

Environmental Assessment Section
Environmental Analysis Branch

Ms. Julia S. Stokes
Deputy Commissioner for Historic Preservation
New York State Office of Parks, Recreation, and Historic
Preservation,
Agency Building 1
Empire State Plaza
Albany, New York 12238

Dear Ms. Stokes:

The New York District, Army Corps of Engineers (Corps) is conducting a study to determine Federal interest in participating in the cost of placing material (sand) dredged from the East Rockaway Inlet navigation channel, located in Queens County, New York, onto nearby Rockaway Beach (Attachment 1). This work is part of a scheduled maintenance dredging operation of the channel as well as an attempt to prevent long term beach erosion on a portion of Long Beach Island. The study has been authorized under Section 933 of the Water Resources Development Act of 1986.


The Federal portion of the navigation channel begins to the southwest of Atlantic Beach, Long Beach Island, and proceeds in a north to northeasterly direction towards Rockaway where it terminates offshore, southwest of Beach 20th Street (Attachment 2). Maintenance dredging is necessary to prevent the build-up of shoals in the channel which create shallow depths and hazardous navigation conditions for local mariners. The area of the proposed placement of dredged material will be at one of two sections of Rockaway Beach in the Town of Far Rockaway. These sections are Beach 32nd Street to Beach 36th Street and Beach 56th to Beach 60th Street. Both are areas of intense erosion. Sand will be used to build up the existing beach to withstand wave and storm action (Attachment 3).

The National Register of Historic Places lists no properties within the project areas that are currently on the Register or that are eligible for inclusion. A cultural resource study, prepared as part of a similar maintenance

dredging project, entitled "Cultural Resources Reconnaissance Dredging Project, East Rockaway Inlet, New York" was written by J. Stephen Kopper (Attachment 4). This report found that there were no prehistoric or historic archaeological sites within the beachfront area bounded by Beach 19th Street and Beach 149th Street, which includes both proposed nourishment areas.

On the basis of current project plans and pending review by your office, the Corps is of the opinion that the Section 933, East Rockaway Inlet, New York Project will have no effect on historic properties. Please provide us with Section 106 comments as pursuant to 36 CFR 800.5.

If you or your staff have any questions or require further information on this project, please contact Nancy Brighton (212)246-4663. Thank you for your assistance.


h Bruce A. Bergmann
Chief, Planning Division

Attachments