

**PROGRAMMATIC AGREEMENT  
AMONG  
THE UNITED STATES ARMY CORPS OF ENGINEERS,  
THE NEW YORK STATE HISTORIC PRESERVATION OFFICE,  
THE NATIONAL PARK SERVICE,  
AND  
THE NEW YORK CITY LANDMARKS PRESERVATION COMMISSION  
REGARDING  
ATLANTIC COAST OF NEW YORK  
EAST ROCKAWAY INLET TO ROCKAWAY INLET  
AND JAMAICA BAY, NEW YORK  
GENERAL RE-EVALUATION STUDY**

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 (Undertaking); 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 Undertaking consists of levee, buried seawall, new groin construction, extension and rehabilitation 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 (Attachments 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 (Attachments 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 (Attachments 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 (Attachments 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 potentially 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 is consulting with and will continue to consult with the NPS, Gateway National Recreation Area, New York State Historic Preservation Office (NYSHPO), the Shinnecock Indian Nation, the Stockbridge-Munsee Community, the Delaware Tribe of Indians, the Delaware Nation (all federally-recognized Tribes), the New York state-recognized Unkecheug Indian Nation, and the New York City Landmarks Preservation Commission (NYCLPC), to define efficient and cost effective processes for taking into consideration the effects of the P r o j e c t on historic properties; and

WHEREAS, the District will invite the NPS, NYSHPO, and the NYCLPC, to be signatories to this agreement; and

WHEREAS, the District has notified 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 has involved 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, NPS, NYCLPC and the NYSHPO 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, if available, 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 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 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, and the NYCLPC, 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 the NYCLPC.
- C. If a property is determined to be eligible for the National Register, the District will consult with the NYSHPO, federally-recognized Tribes and the NYCLPC 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, and the NYCLPC 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 the NYCLPC.
- 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 the NYCLPC 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, and the NYCLPC, and other consulting parties if identified, 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 the NYCLPC, property owners and other consulting parties, if identified 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 INVOLVEMENT AND OUTREACH

- A. The District shall inform the public of the existence of this PA and the District's plan for meeting the stipulations of the PA. Copies of this agreement and relevant documentation prepared pursuant to the terms of this PA shall be made available for public inspection. 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 the NYCLPC 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 prior to the turnover of collections to the appropriate entity.
- 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 the NYCLPC 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, and the NYCLPC 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 NYCLPC 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 NYCLPC 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 NYCLPC, 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, and the NYCLPC 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; Attachment 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, NPS, the federally-recognized Tribes, the NYCLPC, the Unkechaug Indian Nation, and to other interested parties, if identified.
2. The NYSHPO, ACHP, NPS, the federally-recognized Tribes, the NYCLPC, 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 ACHP an opportunity to comment on the undertaking and its effects on historic properties.

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AMONG  
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REGARDING  
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EAST ROCKAWAY INLET TO ROCKAWAY INLET  
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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 ACHP an opportunity to comment on the undertaking and its effects on historic properties.

By: \_\_\_\_\_ Date: \_\_\_\_\_  
Thomas D. Asbery  
Colonel, U.S. Army  
District Engineer

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By: \_\_\_\_\_ Date: \_\_\_\_\_  
National Park Service

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By: \_\_\_\_\_ Date: \_\_\_\_\_  
Gina Santucci  
Director of Environmental Review  
New York City Landmarks Preservation Commission

## APPENDIX A: CULTURAL RESOURCES

**Historic Properties Case Report**  
**Atlantic Coast of New York, East Rockaway Inlet to Rockaway Inlet and Jamaica Bay, Queens and Nassau Counties, New York**

**U.S. Army Corps of Engineers, New York District**

**Introduction**

The Rockaway peninsula and southern Queens was one of the areas most devastated by Hurricane Sandy in 2012. There were 10 fatalities and more than 1,000 structures either substantially damaged or destroyed. In addition to the structural impacts caused by waves and inundation, fires ignited by the storm surge inundation of electrical systems destroyed 175 homes along the Peninsula. Prior to Hurricane Sandy, the U.S. Army Corps of Engineers, New York District (District), was undertaking an effort to identify a long-term solution for the study area, which focused on the Atlantic Ocean shoreline. Prior to this reformulation, an existing, authorized project for the area was constructed in 1977 and renourished periodically through 2004, based upon a 1965 construction authorization. The current study was authorized by Public Law 113-2, The Disaster Relief Appropriations Act of 2013.

As a federal agency, the District has certain responsibilities to take into account the effects of their undertakings on historic properties that may be located within the Area of Potential Effect (APE) associated with the proposed undertaking. Present statutes and regulations governing these responsibilities include the National Historic Preservation Act of 1966 as amended (NHPA; 54 U.S.C 3001), the Advisory Council on Historic Preservation (ACHP) regulations implementing Section 106 of the NHPA (36 C.F.R. Part 800 *Protection of Historic Properties* August 2004) the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.) and Executive Order 11593. Significant cultural resources include any material remains of human activity potentially eligible for inclusion on the National Register of Historic Places (National Register) and historic properties are those resources that are listed or been determined eligible for the National Register.

**Description of the Undertaking**

The East Rockaway Inlet to Rockaway Inlet and Jamaica Bay coastal storm risk management project is proposing to reduce the study area's vulnerability to coastal storms and improve community and coastal resiliency to the Rockaway Peninsula and southern Queens. The measures proposed by this study include the construction of a composite seawall buried along the beach, the construction of new and/or the extension of existing groins and sand fill along the Atlantic shoreline as well as four high-frequency flood risk reduction measures on Jamaica Bay in Cedarhurst-Lawrence, Hammels, Edgemere and Arverne, Queens and Nassau Counties, New York (Figure 1).



Figure 1: Recommended plan overview with Atlantic shoreline features and high-frequency flood risk reduction measures.

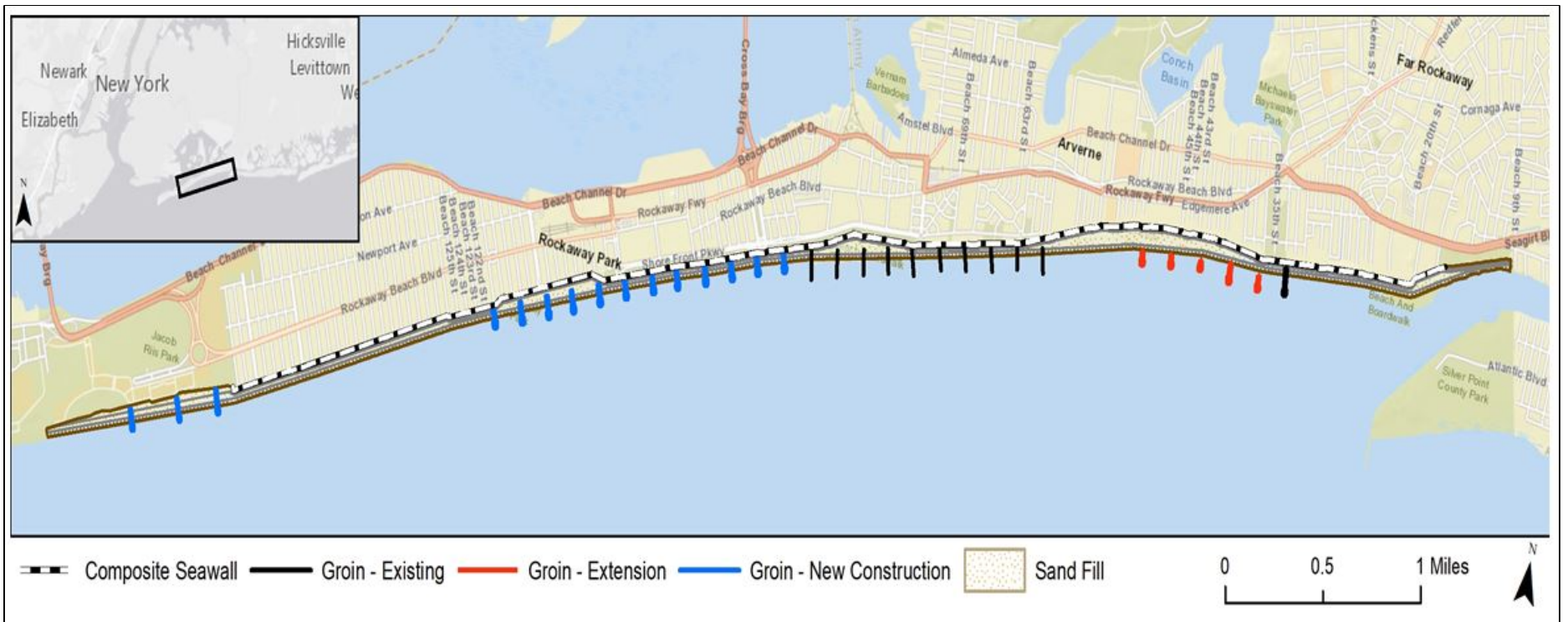


Figure 2: Atlantic Shorefront Component of the Recommended Plan





Figure 3: Groin rehabilitation and beach fill in Jacob Riis Park with the composite seawall just outside the park extending east along the Atlantic shoreline.



Figure 4: Groin Rehabilitation, beach fill and composite seawall along the Atlantic shoreline.



Figure 5: Composite seawall, beach fill and new groin construction (east) along the Atlantic shoreline.





Figure 6: New groin construction, beach fill and composite seawall along the Atlantic shoreline.

- Atlantic Shoreline Measures

These measures consist of a reinforced dune, also referred to as a composite seawall, approximately 60 feet wide and extending approximately 35,000 linear feet from Beach 9<sup>th</sup> to Beach 149<sup>th</sup> Street (Figures 2-6). The structure crest elevation of the seawall structure will be approximately +17 feet above NAVD 88. The dune height will be approximately +18 feet NAVD 88. The bottom of the reinforced dune will be approximately 15 feet below the dune crest. Beach fill will be placed along the reinforced dune and will be obtained from an offshore borrow area (see Figures 2-6). In addition, five existing groins will be extended and 13 new groins will be constructed (see Figures 4-6). Currently, three additional groin rehabilitations are proposed for Jacob Riis Park as well as the placement of sand fill (see Figure 3). Engineering analysis is being completed to determine if the rehabilitation of the Jacob Riis Park groins is necessary. The reinforced dune will not extend into Jacob Riis Park (see Figure 3).

- High-Frequency Flood Risk Reduction Measures

- Cedarhurst-Lawrence: Located in the channel adjacent to the Lawrence High School, this measure consists of 1,000 feet of bulkhead along the east, south and west sides where it will connect to high ground. A small extent of floodwall will be used to connect the bulkhead to the higher ground upland. The proposed elevation will be approximately 10 feet NAVD 88. The existing outfalls will be raised and a pump station will be constructed to receive stormwater when the outlets are blocked by storm surge or tide (Figure 7).
- Mid-Rockaway-Edgemere: This measure extends from Beach 35<sup>th</sup> to just beyond Beach 49<sup>th</sup> Street and will include a combination of a berm, hybrid berm, floodwall and bulkhead. Portions of the berm and hybrid berm will be fronted by scrub-shrub, salt meadow hay and smooth cordgrass natural features stabilized by a rock sill. It is anticipated that three pump stations and one road ramp will be needed. Proposed project elevations range from +8 to +9.5 feet NAVD 88 (Figure 8).
- Mid-Rockaway-Arverne: This measure extends from Almeda Avenue and Beach 58<sup>th</sup> Street all the way around Arverne's Jamaica Bay shoreline to Amstel Avenue just past Beach 74<sup>th</sup> Street. This alignment includes a berm, floodwall, revetment a bulkhead and hybrid berm. Natural features, including canopy tree, salt meadow hay, scrub-shrub, and smooth cordgrass, will be constructed in front of the floodwall, hybrid berm, and bulkhead, and protected by rock sill. Three pump stations, one flood gate and three road ramps will also be constructed (Figure 9).
- Mid-Rockaway – Hammels: This measure consists of two individual segments: an east segment of 1,400 linear feet of floodwall along Beach Channel Drive and a west segment of 1,400 linear feet from the Beach 84<sup>th</sup> Street to Beach Channel Drive. It

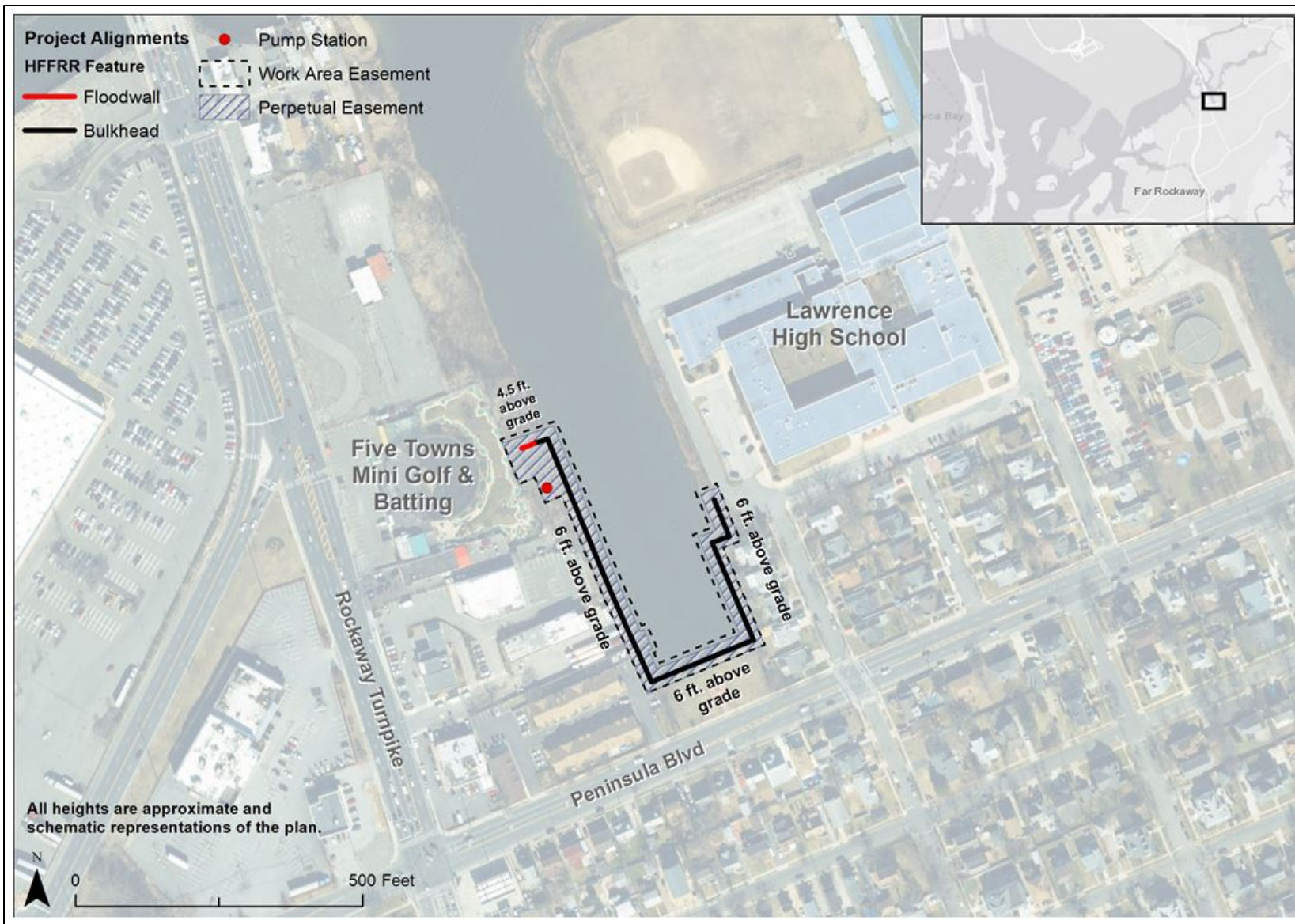


Figure 7: Cedarhurst-Lawrence High-Frequency Flood Risk Reduction Measures



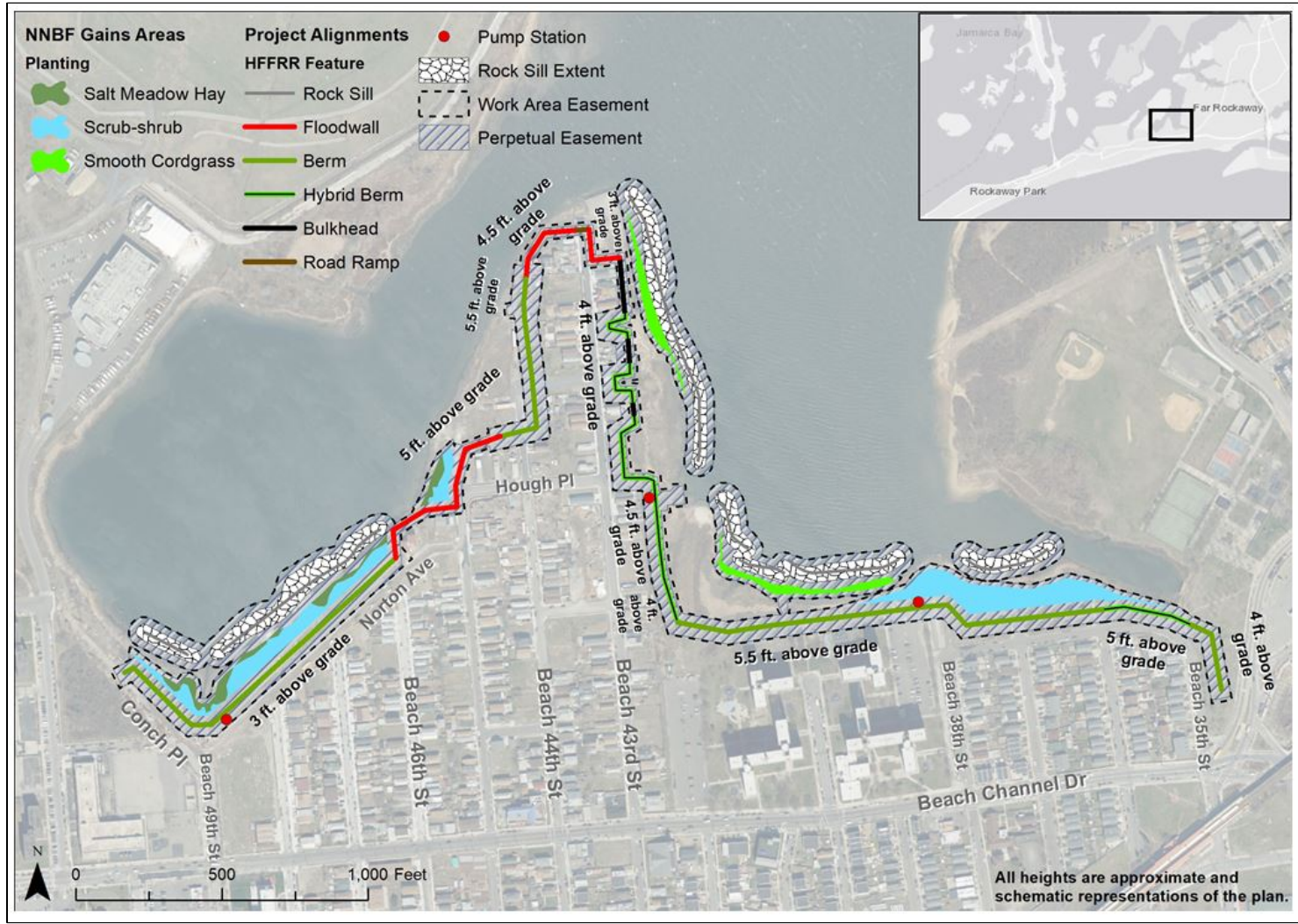


Figure 8: Edgemere High-Frequency Flood Risk Reductions Measures.

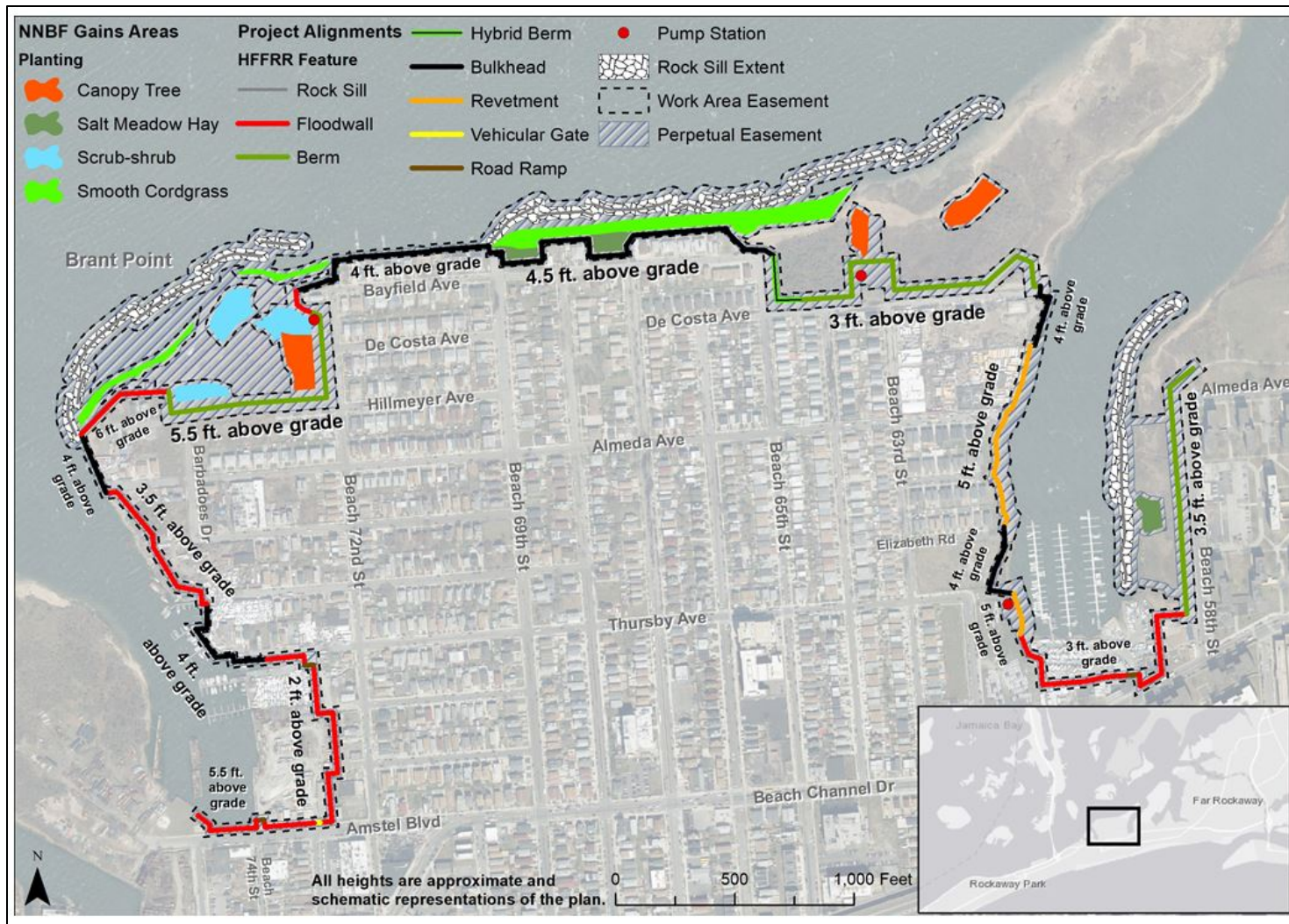


Figure 9: Arverne High-Frequency Flood Risk Reduction Measures



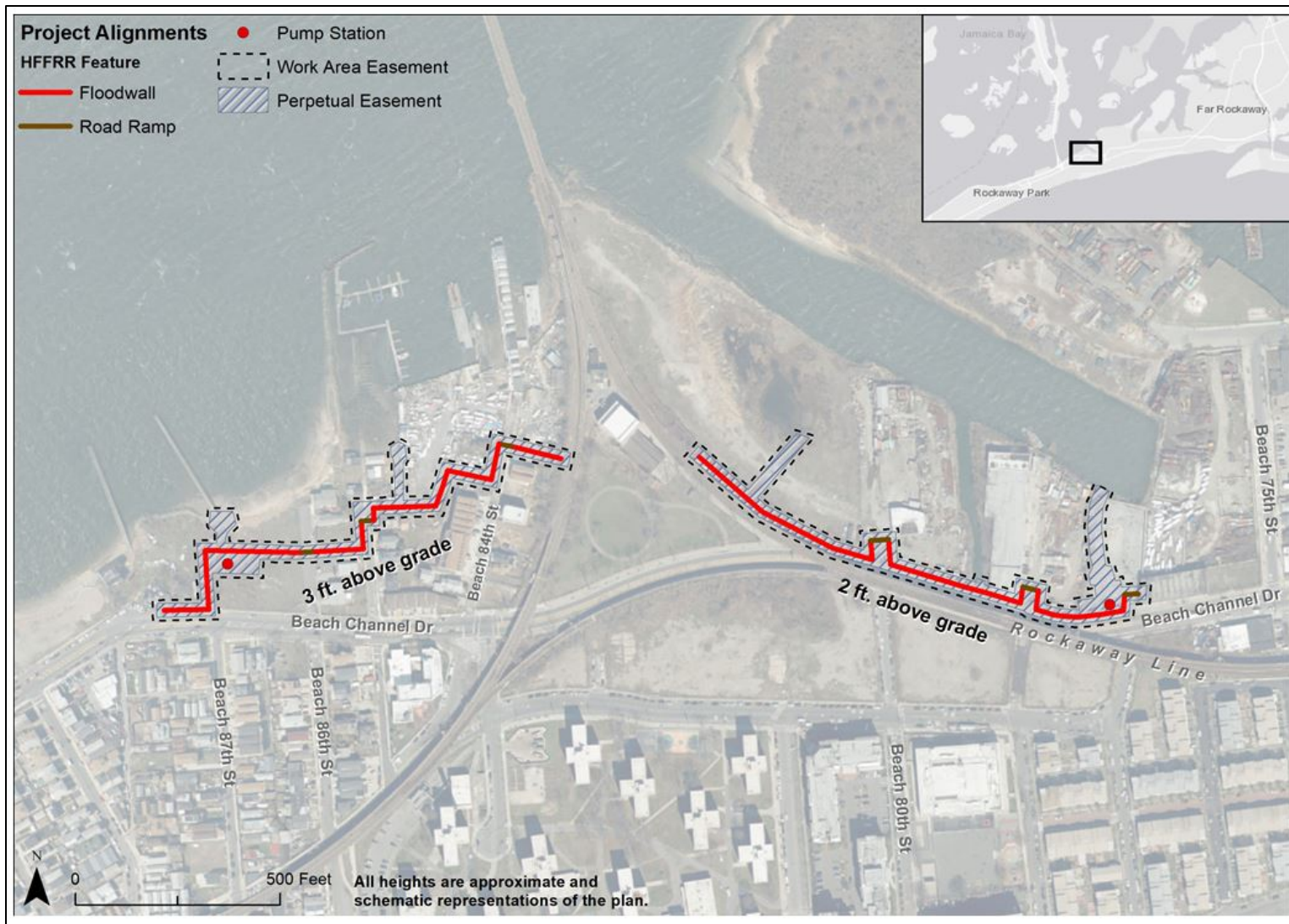


Figure 10: Hammels High-Frequency Flood Risk Reduction Measures

is anticipated that each segment will require one pump station. The segments will also require four road ramps; three on the east and one on the west (Figure 10).

### **Study Method and APE**

The cultural resources investigation for this study has been limited to documentary research and a pedestrian survey. Documentary research consisted of gathering data from previous cultural resource studies and an examination of the New York State Historic Preservation Office (NYSHPO) Cultural Resources Information System (CRIS).

The APE is considered be located along the alignment of each of the measures described above as the undertaking to include the offshore borrow areas. At this time no staging areas or access roads have been identified, however, given the nature of the surrounding area it is anticipated that staging areas will be within existing parking lots or the footprint of the alignment itself. If additional staging areas, access roads or other features are required they will be considered in this analysis once they are defined. The APE for archaeology, historic structures and historic landscapes has been defined as those areas along the proposed line of protection that would likely be directly impacted by project construction. The APE for historic structures and landscapes also includes those locations that would be anticipated to have visual impacts from the completed project.

### **Previous Work**

Reports utilized for this research included the cultural resources surveys conducted within and around the study's APEs. These include Gateway National Recreation Area (Gateway) Final General Management Plan Environmental Impact Statement (National Park Service [NPS] 2014) and the Jamaica Bay Cultural Resources Baseline Study and (Panamerican Consultants 2000, 2003, 2006), and remote sensing and inspection of targets (Panamerican Consultants 2003, 2005 and 2006 and Reiss 1994). This research included a review of the APEs on the NYSHPO CRIS database.

A western section of the Atlantic shoreline component is within the NPS' Gateway – Jamaica Bay Unit and both the eastern shoreline and high-frequency flood risk reduction components are located in the vicinity of the other elements of Gateway. In its cultural resources management plans for the area, the NPS has reported that there have been no Paleo-Indian or Archaic Period sites identified within its property. Woodland sites, characterized by the recovery of ceramic sherds, lithic artifacts and shell middens, have been identified within Gateway as have Contact period settlement sites, which included a mix of European and indigenous cultural items.

- **Known Prehistoric Archaeological Sites**

The New York State Museum files have a number of sites listed that were identified by Arthur C. Parker in the 1920s in and around Jamaica Bay and the Rockaway Peninsula and possibly within the vicinity of the study's APEs, although the exact locations and other information are unknown. These sites include:

**Table 1: Arthur C. Parker sites recorded at the New York State Museum<sup>1</sup>**

<b>NYSM No.</b>	<b>Site Name</b>	<b>Period</b>	<b>Comments</b>
4033	ACP NSAU 12A	Prehistoric or historic	Native American cemetery noted on the White Property near Cedarhurst
4034	ACP NSAU 13A	Prehistoric or historic	Possible Native American Village on Hicks Neck near Bannister Creek and Sage Pond
4050	ACP NSAU	Prehistoric	Camp site in general vicinity of Inwood, just southwest of the project area
4538	ACP QUNS	Prehistoric	Possible Native American village near Head of Bay
4547	ACP QUNS	Prehistoric	Traces of occupation near Head of Bay and Hook Creek
7772	ACP NSAU	Prehistoric or historic	Possible Native American village and shell midden site east of Woodmere Creek
7775	ACP NSAU	Prehistoric	Campsite near Sage Pond and Crooked Creek

<sup>1</sup>As reported in Panamerican Consultants 2003 and Merwin 2009.

In addition to Parker, other known prehistoric sites around Jamaica Bay were identified by Bolton (1920, 1922, and 1934) and Harrington (1909) (Panamerican 2003). Few sites have been identified on the Rockaway Peninsula and include NYSM-4050 above. A cemetery with associated artifacts was reported in Bayswater in 1901 as well as large shell deposits. As late as 1988, it was noted that located along the eastern shore of Jamaica Bay, in the vicinity of Bayswater, was a Woodland period site consisting of ceramics, projectile points, and a possible burial (Panamerican 2003).

These identified sites would be located outside the APEs for both the Atlantic shoreline and high-frequency flood risk reduction components but could be located nearby the Cedarhurst and Edgemere segments of the latter. It may be that on the Rockaway Peninsula, similar sites that have not been destroyed by development or storms may be more deeply buried.

- Known Historic Properties

Fort Tilden, the U.S. Coast Guard Far Rockaway, the Breezy Point Surf Club, the Silver Gull Beach Club, Jacob Riis and the Far Rockaway Beach Bungalow Historic District (Beach 24<sup>th</sup>, 25<sup>th</sup> and 26<sup>th</sup> Streets) are historic districts on the Rockaway Peninsula that

are listed on the New York State and the National Registers of Historic Places. The Fort Tilden, the U.S. Coast Guard Far Rockaway, the Breezy Point Surf Club, the Silver Gull Beach Club and Jacob Riis Historic Districts are all located within Gateway and are managed by the NPS. Other National Register listed or eligible properties include 2 Beach 85<sup>th</sup> Street, Hammels Pier, the New York City Transit System Building, the Rockaway Courthouse, the Temple of Israel Synagogue, the US Post Office at Far Rockaway, Trinity Chapel, the Russell Sage Memorial Church, the Trans World Airlines Flight Center at JFK International Airport, and The Marine Parkway - Gil Hodges Memorial Bridge.

One New York City designated landmark, the Richard Cornell Burial Ground, is located in Far Rockaway. Locally significant landmarks that have not been formally listed include the Waterfront Tribute Park, 9/11 Memorial and the American Airline Flight 587 Memorial.

The beach portion of the Jacob Riis Historic District is located within the western end of the Atlantic Shoreline APE (Figures 11 and 12). The Far Rockaway Beach Bungalow Historic District is located adjacent to the eastern end of the Atlantic shoreline APE (Figure 13). None of these historic districts are located within or near the APEs for the high-frequency flood risk reduction segments. Two Beach 85<sup>th</sup> Street, Hammels Pier and the New York City Transit System Building are located adjacent and potentially within the APE for two segments the Hammels high-frequency flood risk reduction measure (Figures 14 and 15).

No other historic properties or New York City landmarks are located in either component's APEs. The American Airline Flight 587 Memorial is located at the end of Beach 116<sup>th</sup> Street and is adjacent to the Atlantic shoreline APE (Figure 16).

### **Assessment of Effects and Recommendations**

Based on the review of the existing data along the ocean and bayside of the Rockaway peninsula and along Jamaica Bay, there are National Register listed or eligible properties within or just adjacent to the APE that may be directly or indirectly effected by the project elements. Potential impacts to specific properties or category of properties is outline below and summarized in Table 2. The activities required to continue further study or to mitigate for adverse effects is included in the project Programmatic Agreement (Appendix A).

Although no prehistoric or Native American archaeological sites have been identified along the Rockaway peninsula, the early discoveries at the eastern end of the peninsula do indicate a potential for utilization of the area. Sites on the peninsula, if present, may be more likely to be deeply buried as a result of the active forces of the ocean and storm surge. As part of the investigations for and construction of the reinforced dune/composite seawall, conduct geomorphological investigations to identify locations of prehistoric land surfaces that may require monitoring during excavation.

As determined for previous sand placement efforts, the placement of beach fill will not have an adverse effect on the known historic districts and properties located along the shoreline. The source of the sand will be from borrow areas for which a remote sensing survey and, in some cases, an underwater inspection of targets, has been completed. If a borrow area is selected for which an investigation has not been completed or additional work is warranted, those investigations will be conducted prior to the use of the borrow area.

The proposed plan also intends to build new groins as well as rehabilitate and/or extend existing groins. Neither the original nomination for the Jacob Riis Park Historic District, nor the 2014 Final General Management Plan and Environmental Impact Statement mention the groins, although there are three within the current bounds of the historic district. A survey of the groins within the shoreline APE will be conducted to determine when they were built and if they are eligible for the National Register on their own or as part of the existing historic district.

Only a portion of the Arverne high-frequency flood risk reduction measures have been subject to a prior survey (Dubos Point (8) and Brant Point (9) in Panamerican 2003). Additional investigations would include expanding this survey to the other portions of this high-frequency flood risk reduction measure as well as to the other three similar measures. In addition, the completed survey recommends additional investigations prior to or as part of construction activities in these areas. These include additional research on the bulkhead, limited subsurface testing, monitoring of deeper excavation, if conducted, for prehistoric land surfaces and potential remote sensing investigations on the water side of the area.

Two eligible properties, the NYC Transit System building and 2 Beach 85th are immediately adjacent to elements associated with the Hammels high-frequency flood risk reduction measure. They will not be adversely affected by the construction of the measures, however, information related to these structures may be identified during the proposed Phase I survey or that determination could change should the alignment of each floodwall or pump station changes.

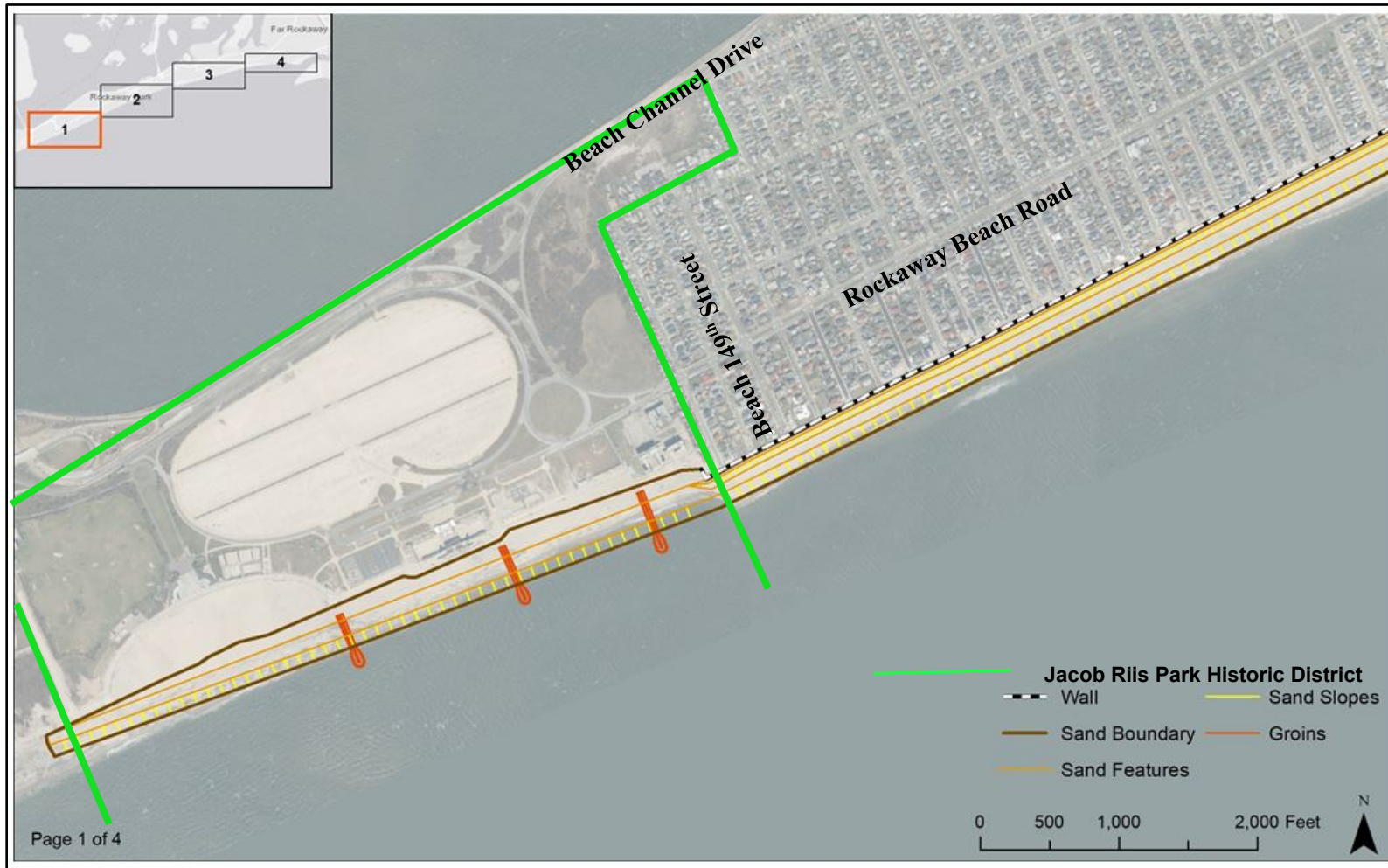


Figure 11: Location of Jacob Riis Park Historic District in relation to the project alignment APE.



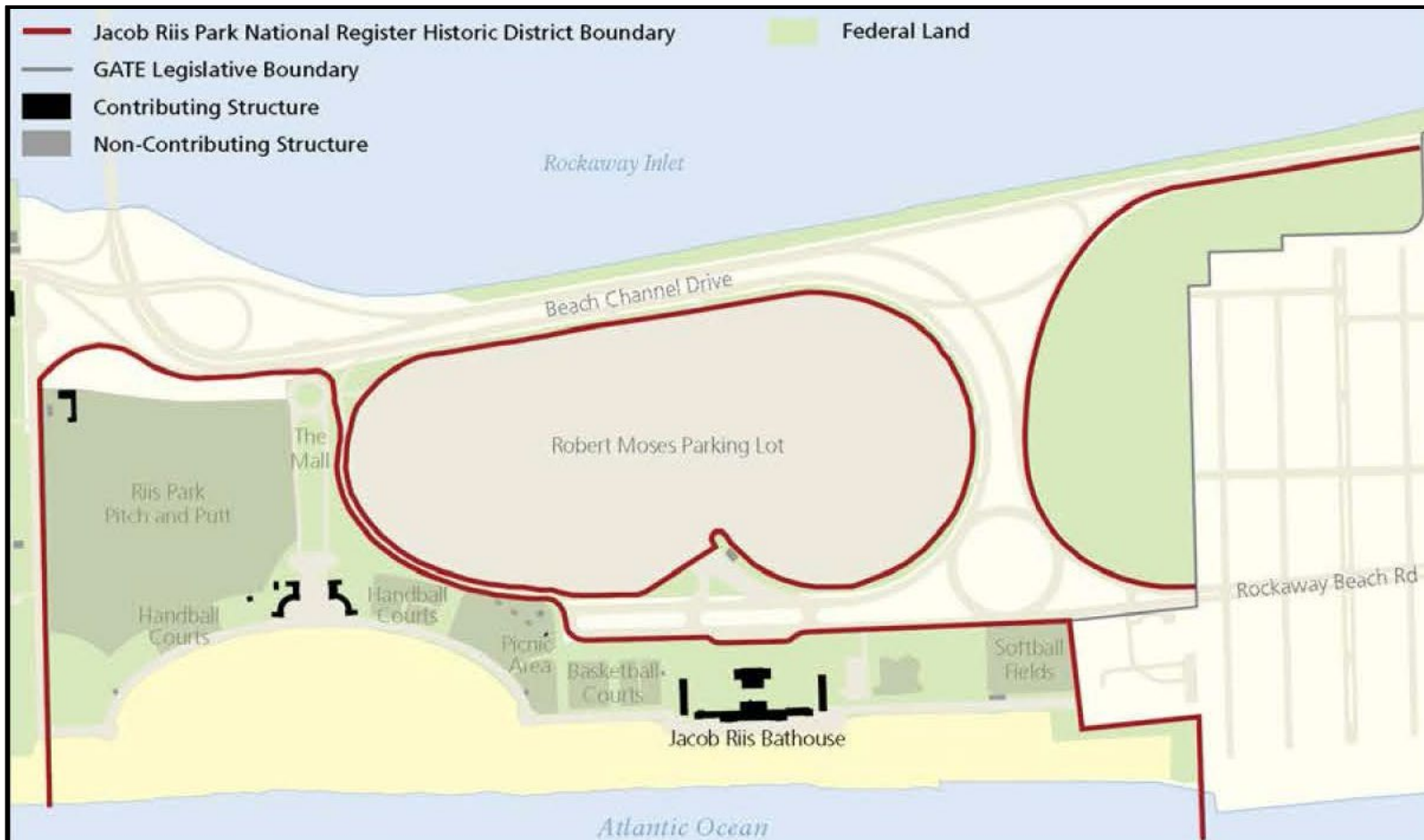


Figure 12: Jacob Riis Park Historic District elements.

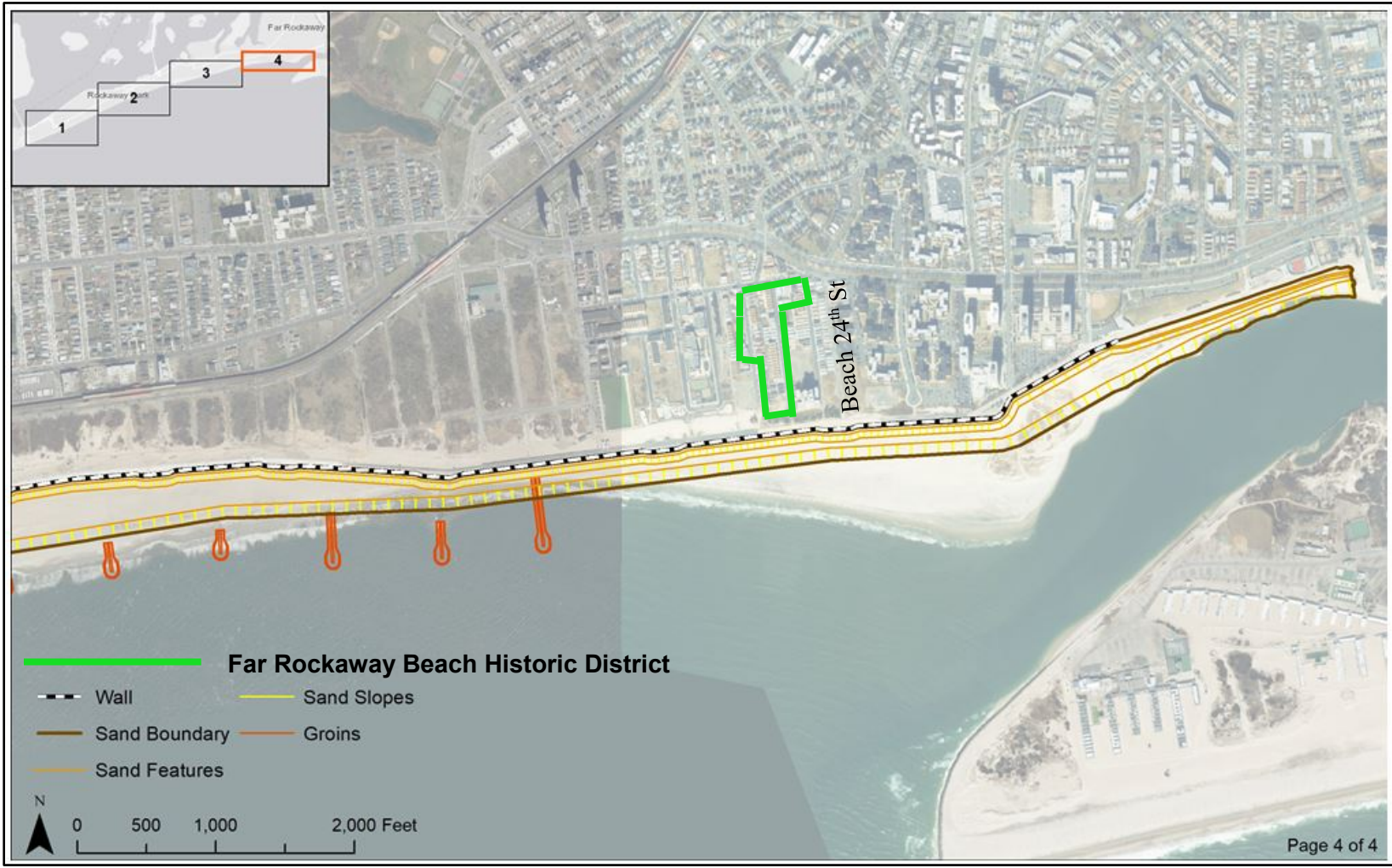


Figure 13: Location of the Far Rockaway Historic District and the project alignment APE.



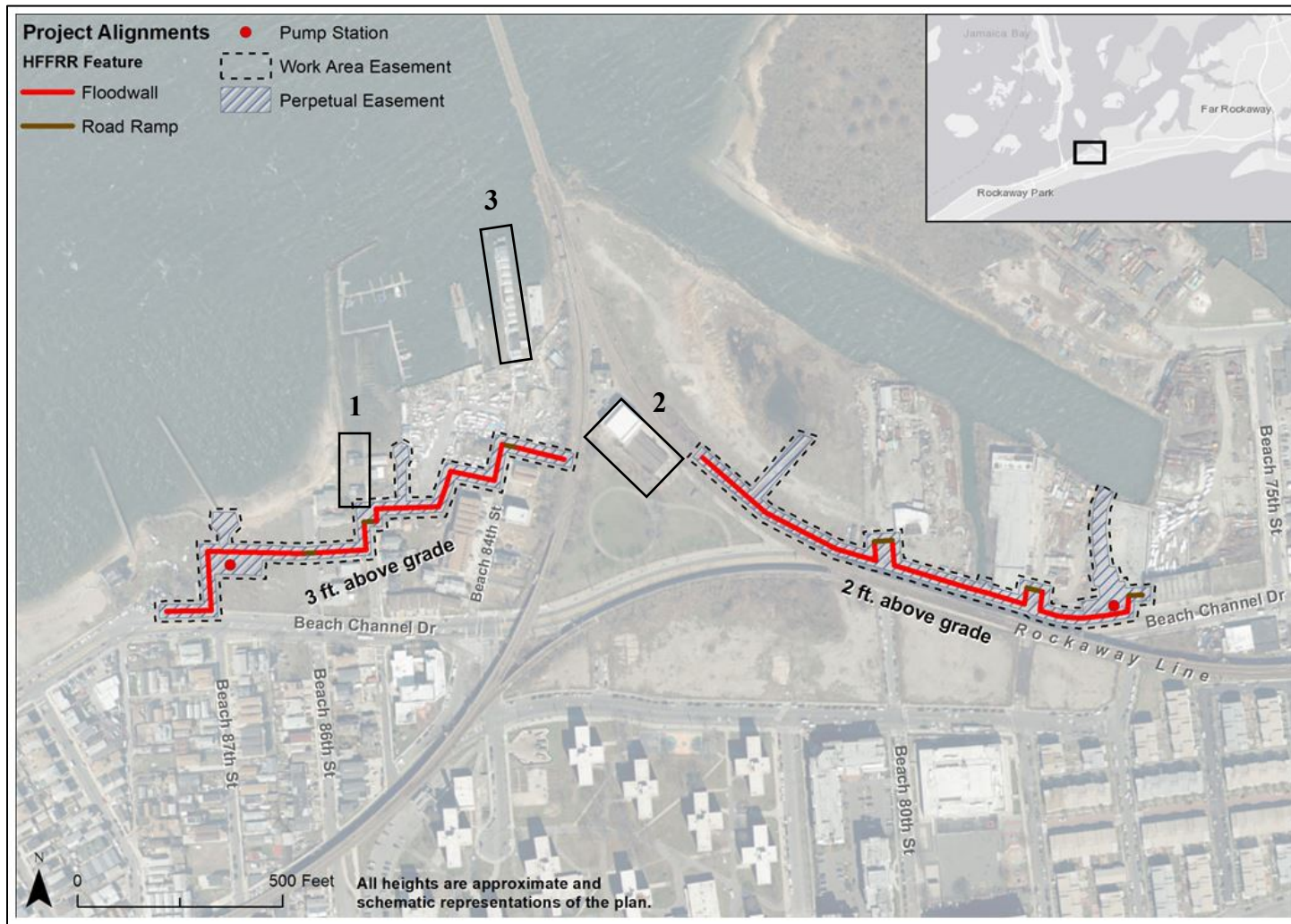


Figure 14: Location of 1) 2 Beach 85<sup>th</sup> Street; 2) New York City Transit System Building; and 3) Hammel Beach Pier and the Hammels high-frequency flood risk reduction measure alignments APE.



Figure 15: Photographs of the eligible properties near the Hammels high-frequency flood risk reduction: New York City Transit System building (top), 2 Beach 85<sup>th</sup> Street (middle) and the Hammels Pier (bottom) (NYSHPO CRIS 2019).





Figure 16: Location of Flight 587 Memorial Park.

**Table 2: Assessment of Effects and Recommendations for Additional Work**

<b>Project Element</b>	<b>Resource</b>	<b>Recommendation</b>
Reinforced dune/composite seawall	Potential prehistoric sites	Geomorphology with potential for monitoring during construction
Beach Fill	No historic properties affected	No additional work
Existing Borrow Areas	No historic properties affected	No additional work
New Borrow Areas	Potential prehistoric/historic resources	Remote sensing survey with potential underwater investigations
Groin Rehabilitation	Groins	Determine eligibility of groins as individual or historic district
Cedarhurst	Potential prehistoric/historic sites	Phase I survey; potential for subsurface investigations and remote sensing
Edgemere	Potential historic sites	Phase I survey
Arverne	Potential prehistoric/historic sites	Phase I survey; potential for subsurface investigations and remote sensing
Hammels	Potential prehistoric/historic sites	Phase I survey; potential for subsurface investigations and remote sensing; monitor alignment and proximity to eligible historic structures.

A Programmatic Agreement has been prepared to complete additional surveys on 1) the National Register eligibility of the groins along the Atlantic shoreline; 2) the potential for land surfaces and archaeological sites buried within the Rockaway peninsula; and 3) the potential for archaeological sites that might be affected by the high-frequency flood risk reduction measures. The public review of the draft General Reevaluation Report and Environmental Impact Statement included the discussion of affected historic properties as well as a preliminary draft of the programmatic agreement. The New York State Historic Preservation Office, the National Park Service, the New York City Landmarks Preservation Commission, the Delaware Nation, the Delaware Tribe, the Stockbridge-Munsee Community, the Shinnecock Nation and the Unkechaug Nation

were also provided a final draft to review and comment prior to execution of the agreement.

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ATTACHMENT B: AREA OF POTENTIAL EFFECTS  
FIGURES



Figure 1: Recommended plan overview with Atlantic shoreline features and high-frequency flood risk reduction measures.

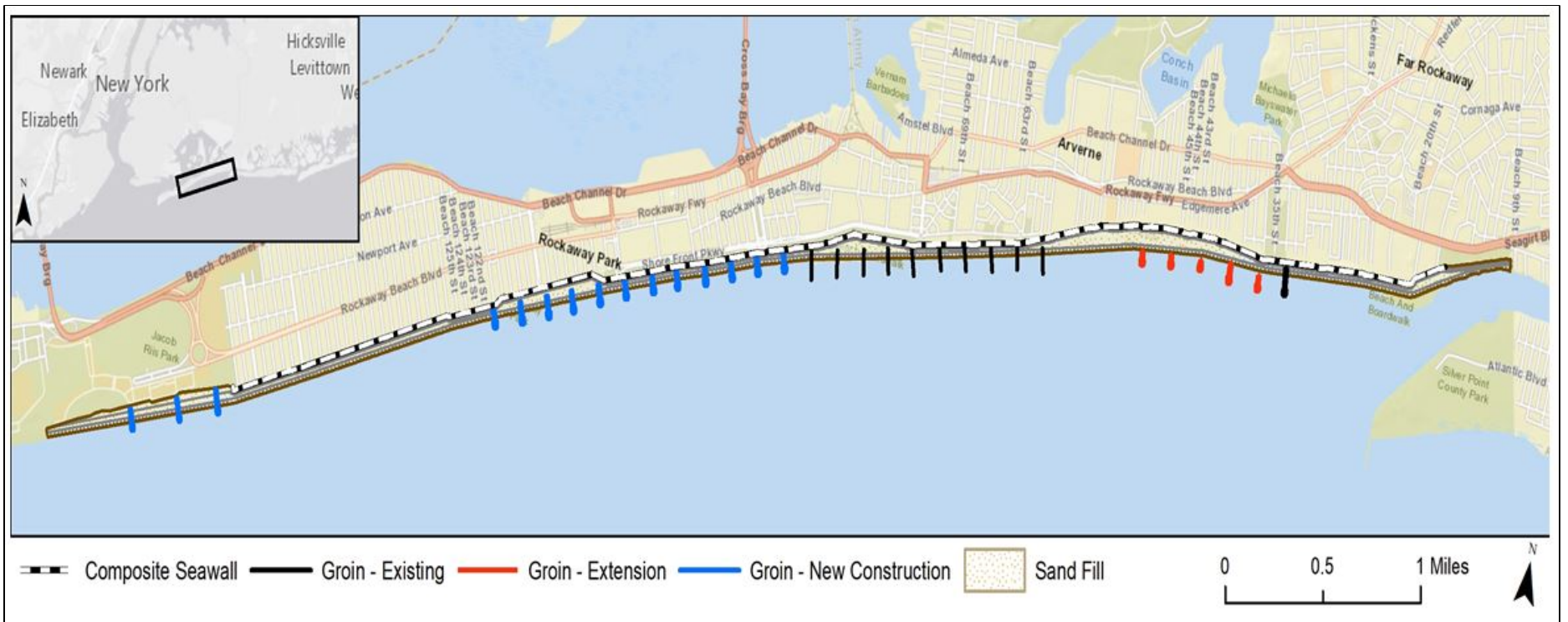


Figure 2: Atlantic Shorefront Component of the Recommended Plan





Figure 3: Groin rehabilitation and beach fill in Jacob Riis Park with the composite seawall just outside the park extending east along the Atlantic shoreline.



Figure 4: Groin Rehabilitation, beach fill and composite seawall along the Atlantic shoreline.



Figure 5: Composite seawall, beach fill and new groin construction (east) along the Atlantic shoreline.





Figure 6: New groin construction, beach fill and composite seawall along the Atlantic shoreline.

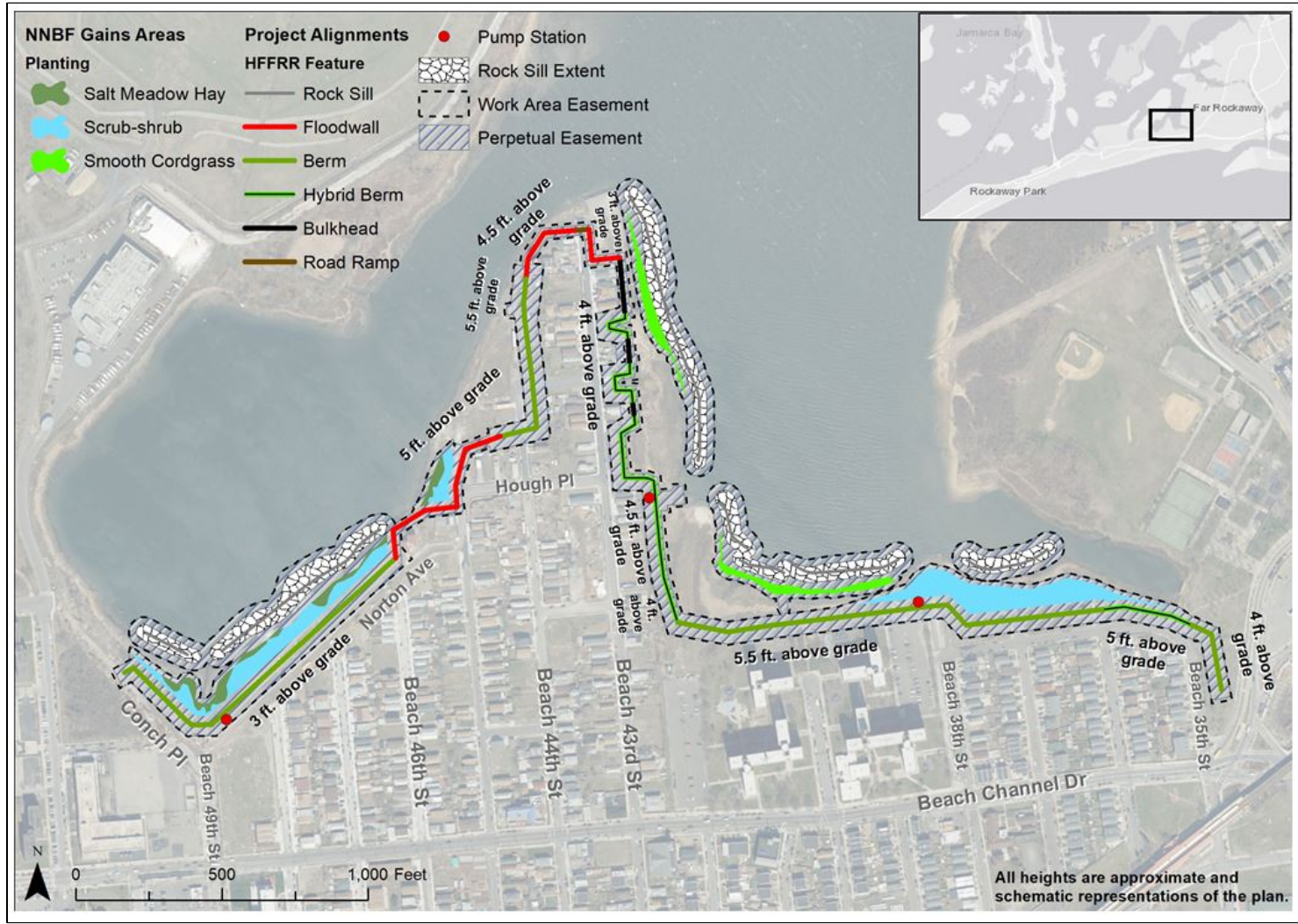


Figure 8: Edgemere High-Frequency Flood Risk Reductions Measures.



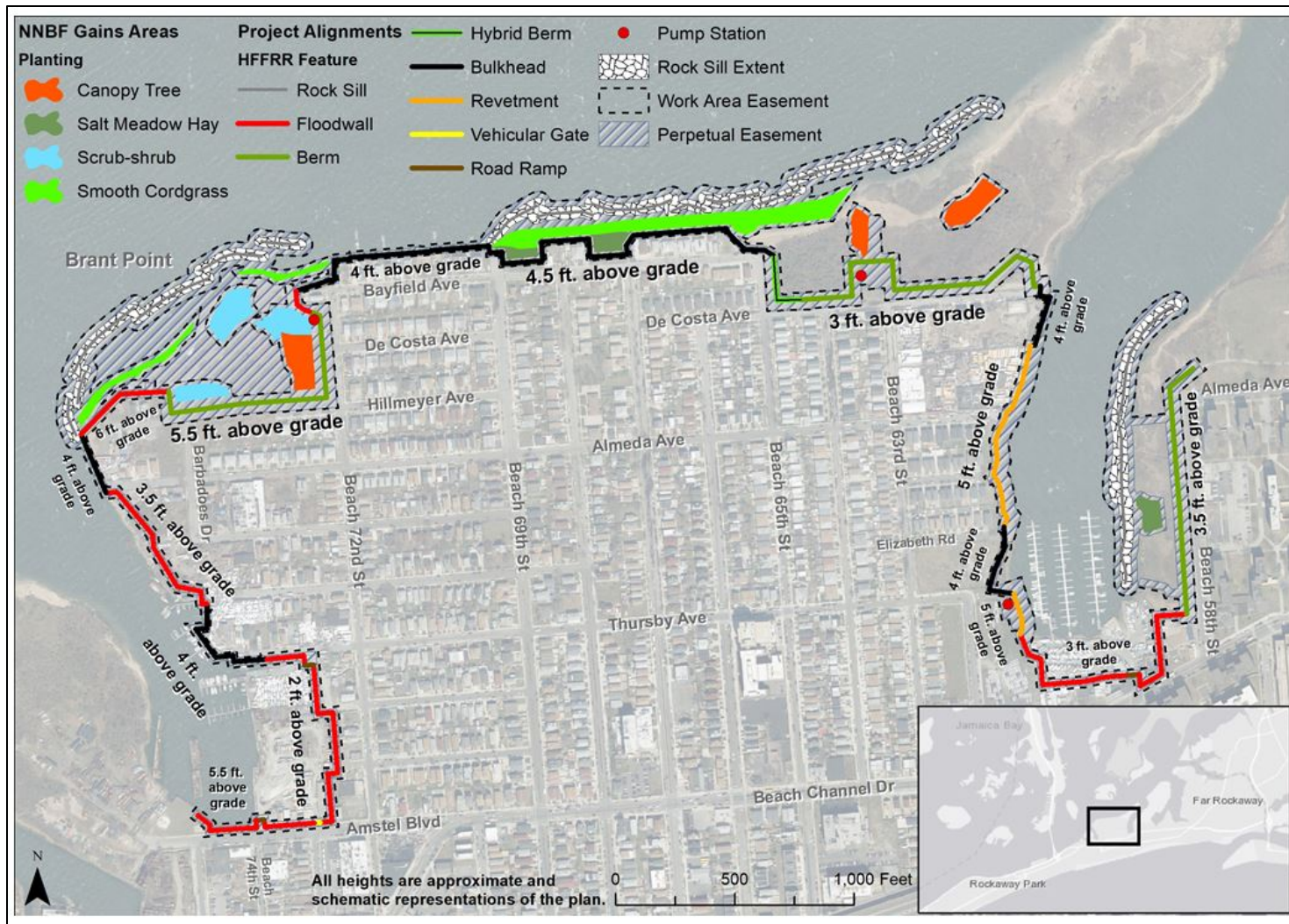


Figure 9: Arverne High-Frequency Flood Risk Reduction Measures

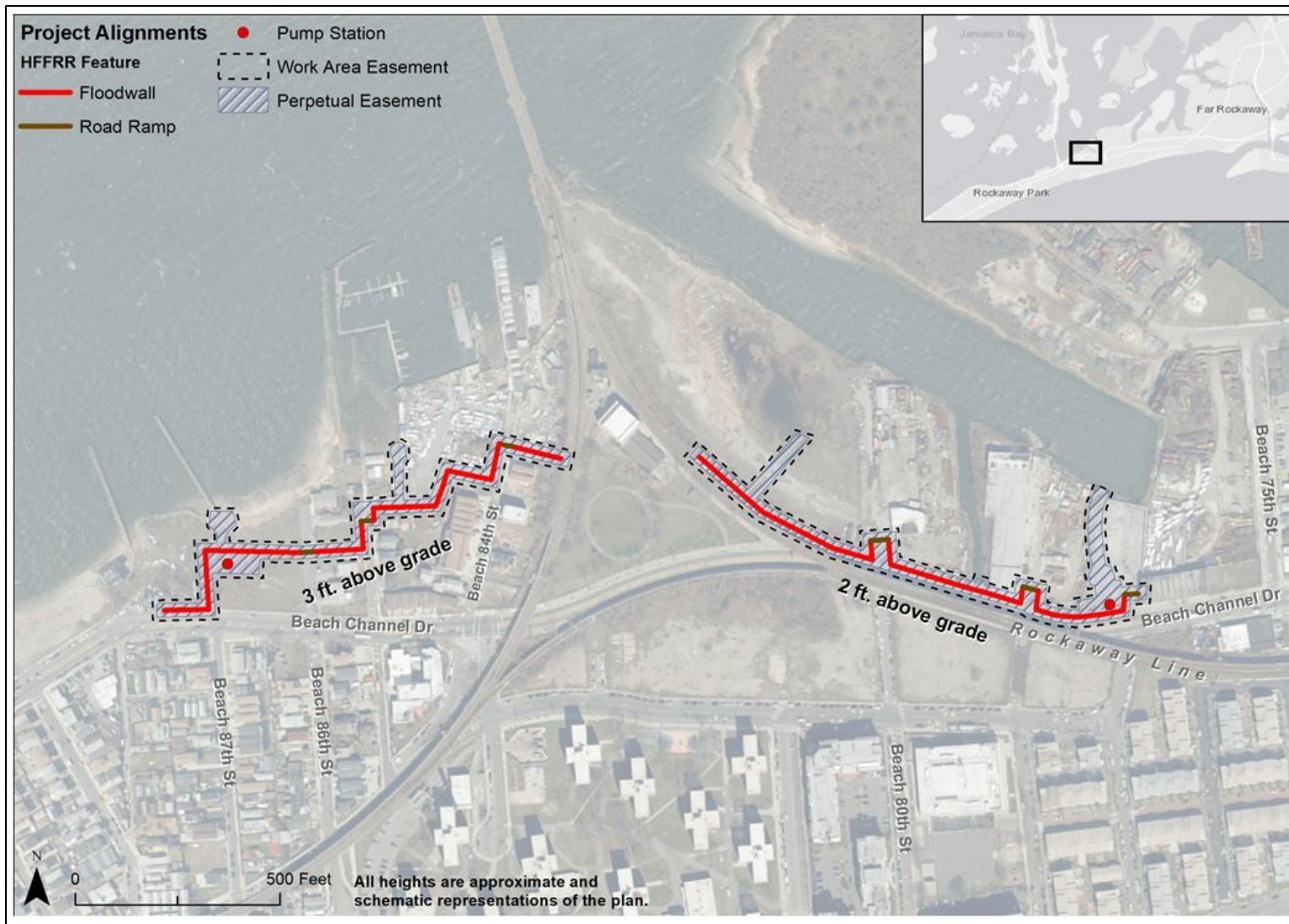


Figure 10: Hammels High-Frequency Flood Risk Reduction Measures



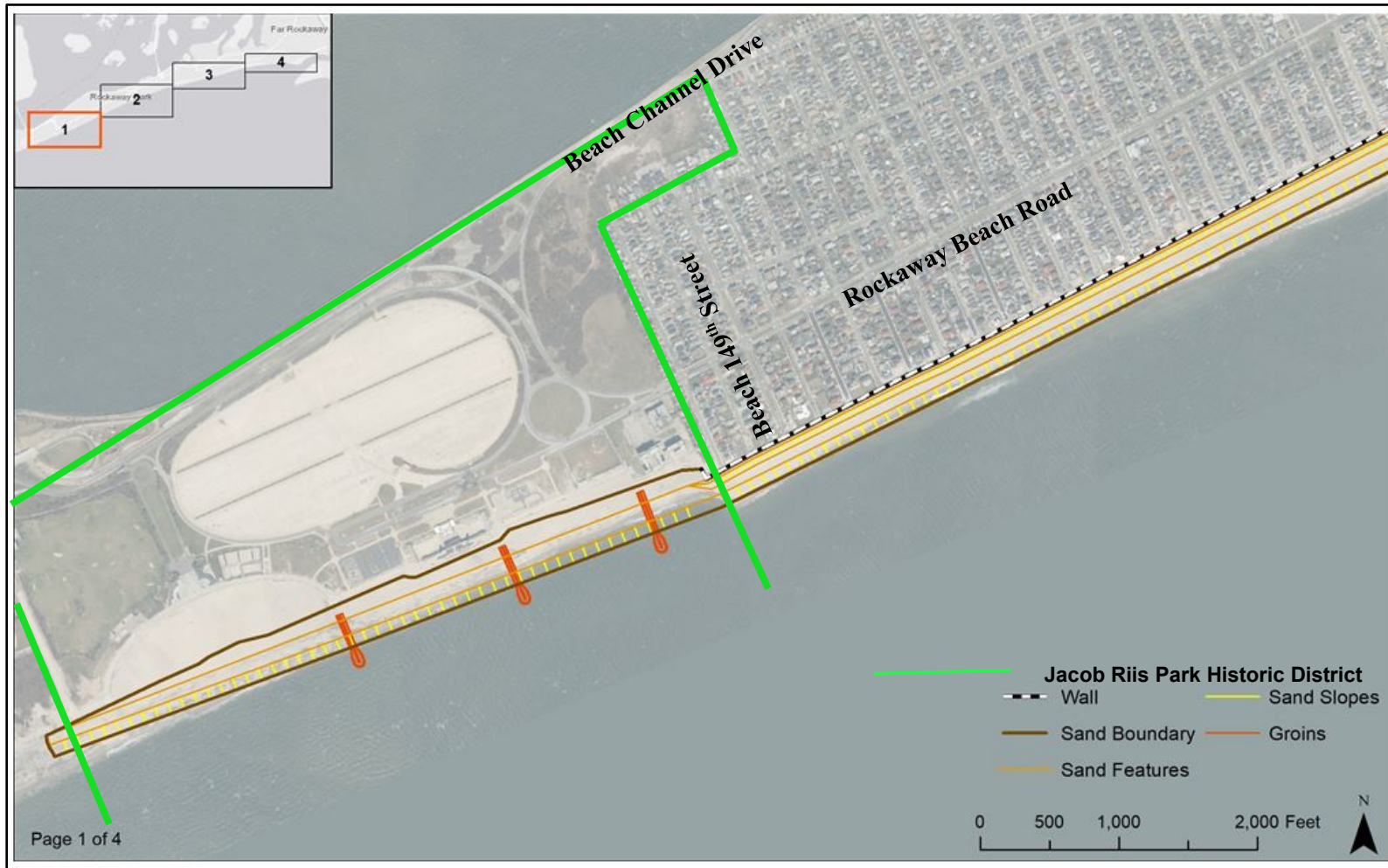


Figure 11: Location of Jacob Riis Park Historic District in relation to the project alignment APE.



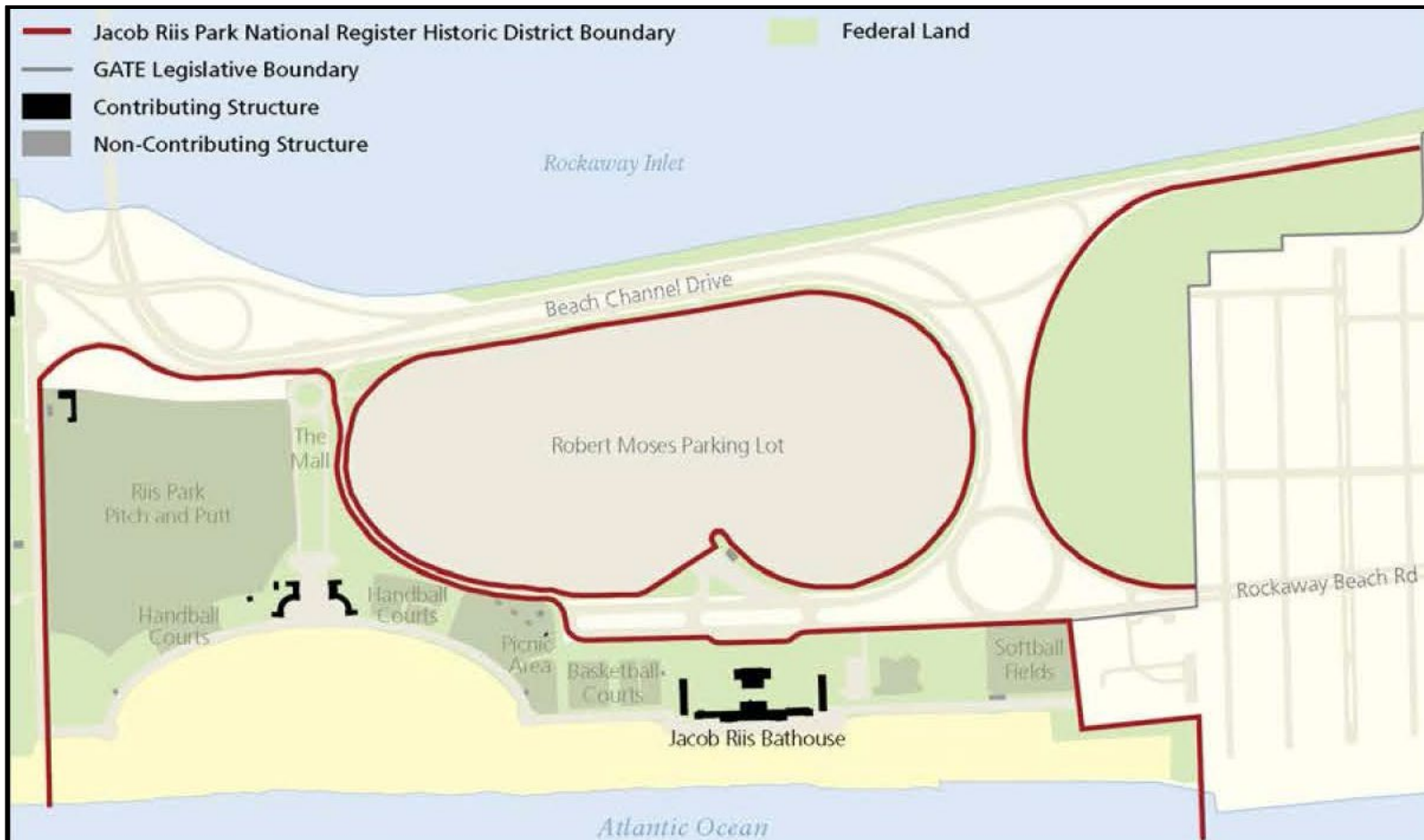


Figure 12: Jacob Riis Park Historic District elements.

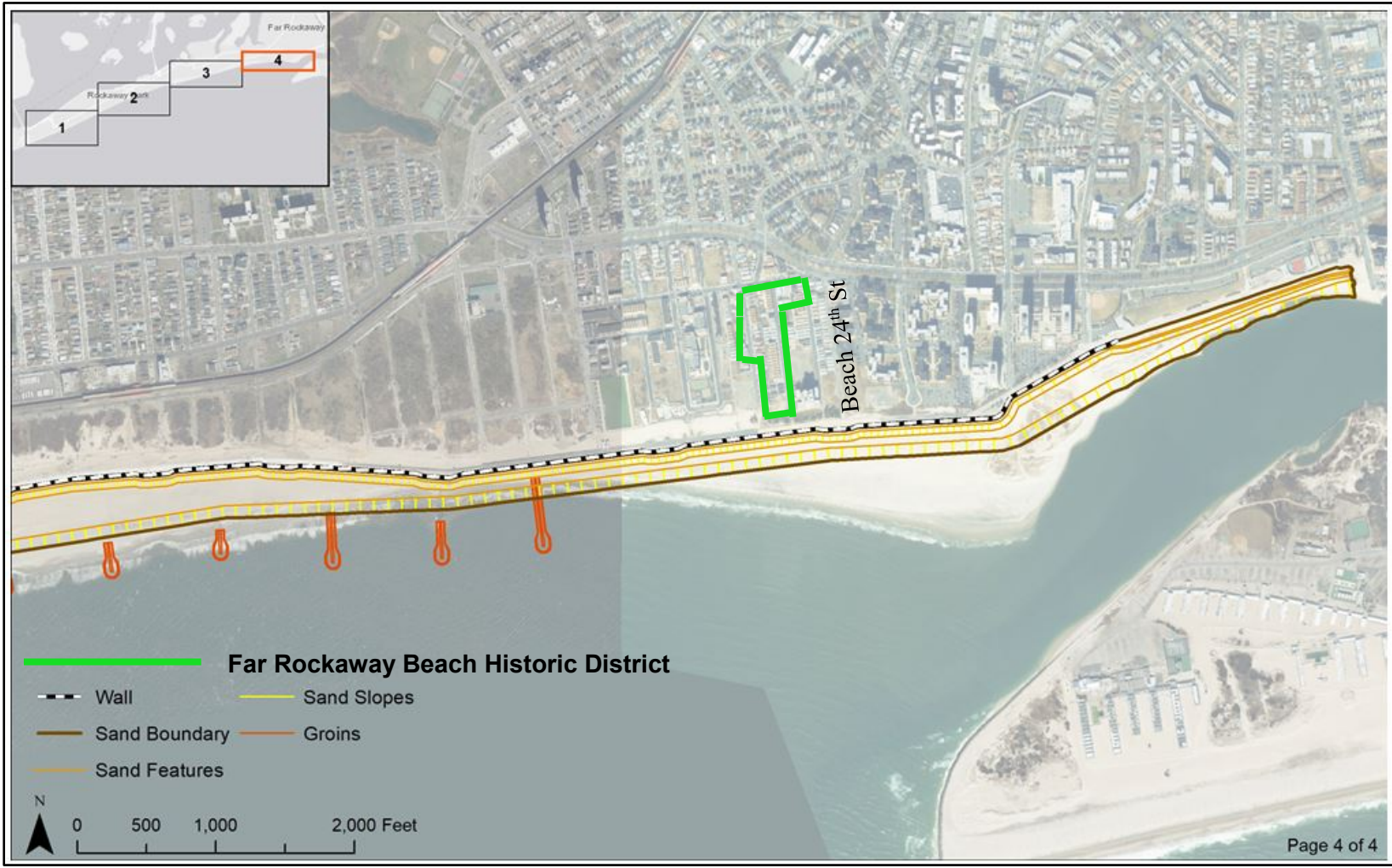


Figure 13: Location of the Far Rockaway Historic District and the project alignment APE.

APPENDIX C: HUMAN REMAINS DISCOVERY PROTOCOL

DRAFT

**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.