Jamaica Bay, Marine Park and Plumb Beach, NY
Feasibility Study

Providing an expedited limited reevaluation to address post-Sandy changes and to satisfy the requirements of the Disaster Relief Appropriations Act of 2013 (P.L. 113-2)

U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT

DRAFT August 2013

Jamaica Bay, Marine Park and Plumb Beach, New York
Ecosystem Restoration Feasibility Study

INTRODUCTION

The Jamaica Bay, Marine Park and Plumb Beach, New York Ecosystem Restoration Feasibility Study ("Jamaica Bay Feasibility Study" [FS]; formerly referred to as the Jamaica Bay Ecosystem Restoration Project [JBERP]) was conducted by the US Army Corps of Engineers (USACE) in partnership with the New York City Department of Environmental Protection (NYCDEP), as authorized by a resolution adopted by the Committee on Public Works and Transportation of the United States House of Representatives on August 1, 1990. This resolution authorized a study "to determine the feasibility of improvements for beach erosion control, hurricane protection and environmental improvements in Jamaica Bay…" A pre-draft interim report was prepared, focusing on sites and measures primarily associated with environmental improvements and ecosystem restoration on the perimeter of Jamaica Bay.

As a result of the devastation associated with Hurricane Sandy, the USACE has been tasked to address "coastal resiliency" and "long-term sustainability" in addition to the legacy USACE planning report categories of "economics, risk, and environmental compliance." Public Law 113-2, the "Disaster Relief Appropriations Act, 2013" provided supplemental appropriations to federal agencies for expenses related to the consequences of Hurricane Sandy. Chapter 4 of PL 113-2 (Appendix 1) identifies those actions directed by Congress specific to USACE, including preparation of two "interim" reports, a project performance evaluation report, and a comprehensive study (North Atlantic Coast Comprehensive Study) to address the flood risks of vulnerable coastal populations in areas that were affected by Hurricane Sandy within the boundaries of the North Atlantic Division of the Corps.

The First Interim Report to Congress states (See Appendix 2, page 3):

> *"When determining how to move forward in implementing project specific measures in accordance with the funding and direction in the Act, the Corps will perform an expedited limited re-evaluation that addresses resiliency, economics, risks, environmental compliance, and long-term sustainability …"*

The Second Interim Report to Congress named this Study (see Table 2) to be included in the list of Projects Under Study which were directed to conduct an:

> *". . . expedited limited re-evaluations . . . which address resiliency, economics, risks, environmental compliance, and long-term sustainability."*

The purpose of this document is to provide a brief summary of the Pre-Draft Interim Report prepared for the Jamaica Bay, Marine Park and Plumb Beach, New York Ecosystem Restoration Feasibility Study. This summary includes a description of the recommended ecosystem restoration alternatives, and will serve as a foundation for discussions on a path forward as the Jamaica Bay ecosystem restoration plan is re-analyzed for coastal storm damage reduction (CSDR) and in support of coastal resiliency and long-term sustainability.

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Background

Jamaica Bay is a tidal waterway which lies in an urban area and is connected to the lower bay of New York Harbor. The bay is located approximately 22 miles from midtown Manhattan in New York City and within the city's two most populated boroughs, Brooklyn and Queens. The bay is surrounded by salt marshes, disturbed upland ecosystems, parks, landfills, residential communities, commercial and retail facilities, parkways and major roadways, and public transportation, including the John F. Kennedy International Airport.

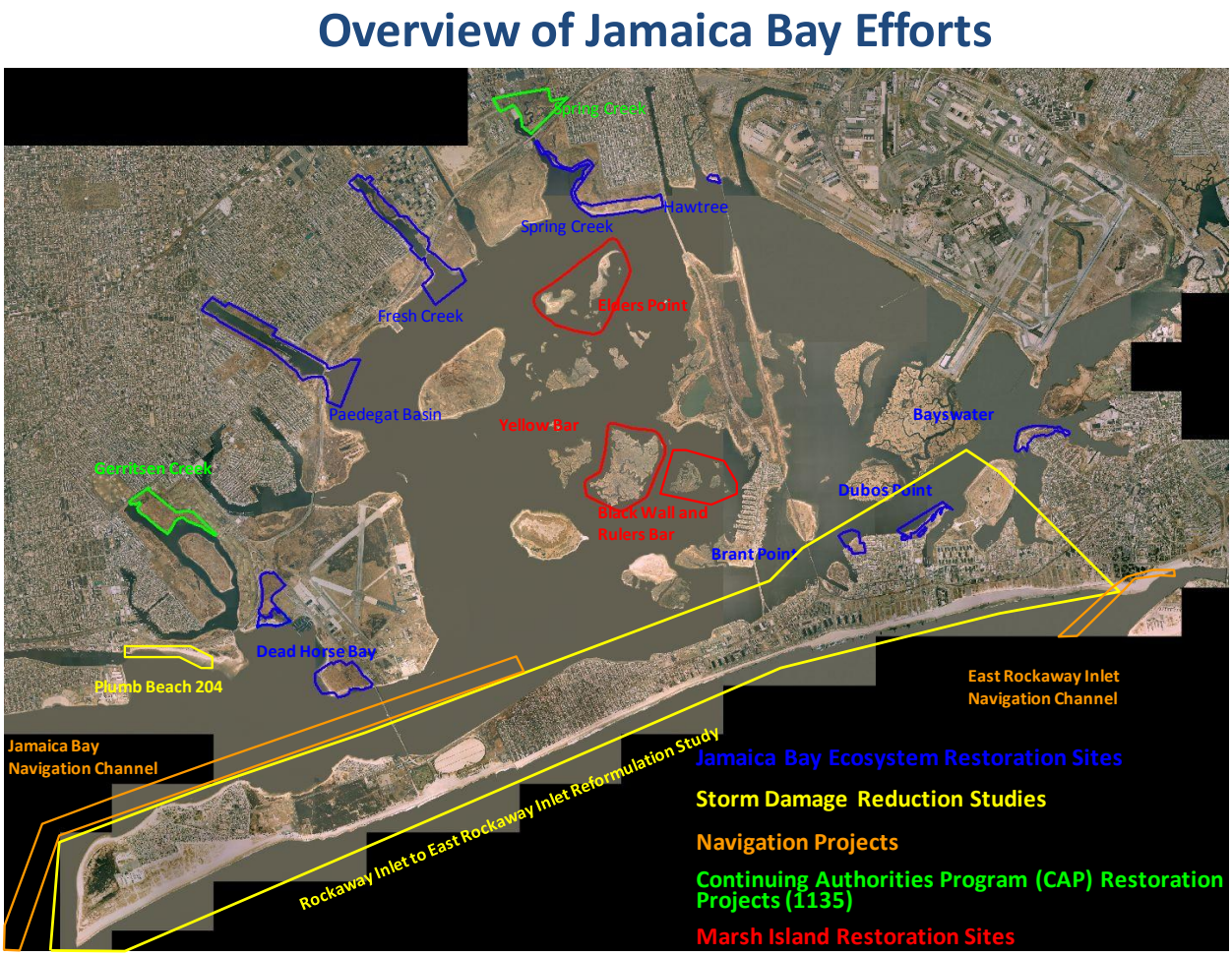
In the 19th and 20th centuries, through a series of human actions, extensive habitat losses resulted in the severe degradation of much of the remaining habitats and the bay's chemical, physical, and biological environment. These actions included the filling of marshes and open water areas, hardening of shorelines, altering of the bathymetry of the bay bottom, inputs from raw and treated sewage, combined sewage overflow, and landfill leachates, which impaired the ability of Jamaica Bay to function as an ecological system. The overall purpose of the project is to improve the environmental quality of Jamaica Bay and restore its historical productivity and diversity.

Of the original body of 39 sites initially identified as restoration candidates (USACE 1997), eight were ultimately chosen for more detailed study, design, and implementation at this time. In the first phase of screening, nine sites were screened out for reasons including:

- Sites were held exclusively by private property owners;
- Site constraints such as buildings, public roadways, and utilities did not allow adequate space for the development of viable wetland restoration projects;
- Former industrial uses at a site expected to have contaminated soils and
- Sites had complex, unresolved stormwater management issues.

The initial stage of screening left 30 sites as possibilities. These 30 sites went through an extensive collaborative planning process that involved many agency workshops and meetings that included both one-on-one and interagency sessions with U.S. Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), U.S. Environmental Protection Agency (USEPA), National Park Service (NPS), New York City Department of Environmental Protection (NYCDEP), New York City Department of Parks & Recreation (NYCDP&R), New York State Department of Environmental Conservation (NYSDEC), New York State Department of State (NYSDOS), and Port Authority of New York & New Jersey (PANY/NJ). The process also involved community meetings with Jamaica Bay Taskforce, Community Boards, Borough Presidents offices (Queens and Brooklyn) and several Public Meetings over more than a year. This extensive input resulted in screening down the number of sites to be examined in detail to ten. Eventually two of these sites were spun off as USACE Continuing Authorities Program (CAP) studies to take advantage of bond funds received by NYCDP&R (Gerritsen and Upper Spring Creek). The eight sites evaluated as part of the Jamaica Bay Feasibility Study were: Dead Horse Bay, Paerdegat Basin, Fresh Creek, Spring Creek, Hawtree Point, Bayswater State Park, Dubos Point, and Brant Point. Specific information regarding the proposed designs and restoration actions for each site can be found in Attachment 1).

Figure 1 presents the eight sites as well as other Jamaica Bay efforts including other recently constructed restoration projects (e.g., Gerritsen Creek, Plumb Beach, Jamaica Bay Marsh Islands) and adjacent storm damage reduction studies (Rockaway Inlet to East Rockaway Inlet Reformulation Study).



During the initial study screening and plan formulation, the bay's vegetated marsh islands disappearing had not been a focus. When NYSDEC completed its GIS-based surveys and actually quantified the extensive losses suffered since only the mid 1970s, the Feasibility Study was already into its detailed investigations of the eight sites. The resource agencies convened on several occasions to discuss this new and very serious issue and eventually a consensus evolved that the islands would be investigated under the USACE's Continuing Authorities Program (CAP) Beneficial Uses of Dredged Material authority (Section 204 of the WRDA 1992, as amended, and Section 207 of WRDA 1996). This made economic sense given the remaining limited Feasibility Study funds would not be further strained to include the marsh islands. Consequently, as all the islands seemed to be suffering from varying degrees of sediment loss, evaluating their restoration under this beneficial use of dredged material authority was very pertinent. The study team, with the concurrence of the stakeholders, then decided on two parallel tracks of action: a pilot effort on the central marsh islands via CAP, while the Feasibility Study focused on sites along the perimeter of the bay. The pilot efforts on the central marsh islands have been providing valuable data on the cause of the problems and are helping identify the most effective

restoration options. The data already collected from the five (Elders East and West, Yellow Bar, Black Wall and Rulers Bar) marsh island restoration projects are providing a great deal of information that can be imported into the detailed plans/specs for the eight study sites (providing decision makers with information on how to most effectively and efficiently restore the marsh habitats throughout the bay). In addition to eight perimeter sites overall ecological value to the bay system as a whole, they will also act as a buffer for the center of bay from the densely urban setting, and will protect future restoration attempts in the center of the bay.

To ensure the comprehensive restoration of some of the tentatively selected sites, specifically Dead Horse Bay, Bayswater, Dubos Point, and Spring Creek, the creation of tidal creeks was included to permit proper tidal inundation of newly created marshes, and to prevent the recolonization of invasive species. Most of the excavated materials will be beneficially reused onsite, providing for protective maritime grasslands and forests that will stabilize the marsh sediment, offer transitional zones to the surrounding uplands, and lower the cost of the each project. Acting as a buffer, the maritime forest/grassland will protect the restored marshes from runoff (removing chemicals, slowing velocity to prevent erosion, etc.), provide protection from roadway noise, reduce human disturbances (from dumping, ATVs, and physical disturbances), and increase the habitat diversity of the entire site. This latter benefit is integral and integrated to the full functioning of an integrated estuarine system such as Jamaica Bay, adding to the benefits of the adjacent habitats and increasing overall connectivity between and among similar habitats and multiple habitats used by the same species, while minimizing impacts from the urban areas surrounding the Bay.

This study also included two sites, Paerdegat Basin and Fresh Creek, where water quality improvements are a major goal. These sites are currently severely degraded due to past dredging activities and the combined sewage overflows that empty into the basins. By partially filling these water bodies to re-contour the bottom to more closely reflect the historic tidal prism, water quality is expected to improve. Improved water quality will lead to improved sediment quality as well as a more robust fringe wetland community and its adjacent maritime buffers. It is anticipated that these improvements will facilitate increases in habitat functions and prominent benthic and shellfish populations and subsequently the residential and migratory fish species that rely on the bay as a National Marine Fisheries Services (NMFS) designated Essential Fish Habitat.

NYCDEP has made significant progress at Paerdegat Basin on the Combined Sewer Overflow (CSO) retention facility (August 2011) and has advanced 38 acres of wetlands and natural grasslands adjacent the CSO facility using 2009 American Recovery and Reinvestment Act (ARRA) funding. Therefore, the restoration recommended at Paerdegat Basin will not be evaluated further in the Feasibility Study, leaving the remaining seven sites to be investigated.

Designs at some of the sites require the installation of stabilizing structures. These structures will be built at the mouths of tidal creeks created at Dead Horse Bay, Dubos Point, and Bayswater State Park. These structures will prevent the erosion of the surrounding beach and wetland habitats. Toe stabilization is being tentatively selected at Dubos Point to protect the existing wetland habitat where existing piles are failing and erosion is evident. At Brant Point, offshore rubble mounds are integral to the tentatively selected plan. Studies have shown that this shoreline has retreated at a rate of 3 feet/year since 1959 (USACE 2003). A beached barge at this site shows the success of near shore structures in protecting the shoreline.

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Next Steps

The alternatives in the Draft Interim Feasibility Study Report, as summarized within the project descriptions in Attachment 1, emphasize ecosystem restoration activities that involve modification of hydrology or aquatic substrates and are most likely to be appropriate for USACE ecosystem restoration initiatives. Habitats targeted include wetlands, riparian and other aquatic systems, but also include adjacent maritime forest and grasslands as appropriate. These latter habitats have been perhaps the most severely impacted over time, with few remaining. Yet they functioned as an integral part of the total ecosystem, adding substantially to the value and functions of the adjacent wetland and aquatic communities but are generally not formulated objectives of any of the alternatives considered. These actions are essential to the project as a whole as they offer on-site dredge material disposal option and provide a buffer that helps protect and sustain the marsh communities long-term.

Moving forward, the seven sites (excluding Paerdegat Basin) will be re-assessed for modifications to provide coastal storm damage reduction (CSDR) benefits as well as ecosystem restoration benefits. It is acknowledged that at this point the results of the earlier referenced North Atlantic Coast Comprehensive Study (NACCS) are not defined, but that there are overriding principles which have been established for the NACCS that can be addressed in the reevaluation. These principles recognize that preferred alternatives are those that can provide protection with the use of natural protective features which are readily adaptable, and could be modified or terminated based upon findings of the NACCS. Acknowledging that traditional CSDR features may be necessary, the NACCS recognizes that hard protective structures can be implemented, but that they need to be based upon current, state-of-the-art science and planning. The NACCS also emphasizes the need for integrated land-use planning based upon current understanding of risks.

The proposed features at the seven restoration plans are being reevaluated for the following:

- How the recommended alternative contributes to resiliency of affected coastal communities;
- How the recommended alternative reduces flood and coastal storm risks and contributes to improved capacity to manage such risks;
- How the recommended alternative affects the sustainability of environmental conditions in the affected area;
- And how the recommended alternative will be consistent with the findings and recommendations of the NACCS.

Possible modifications include:

- Re-using historic fill excavated to restore wetlands by placing it within an onsite swale or berm, between the restored habitat and the surrounding area.
- Extending proposed wetlands outward into Jamaica Bay to provide more wave attenuation ability
- Addition of hard structures (off shore rubble mounds, groins, etc) to proposed ecosystem features
- Expanding scope of study beyond the eight sites to include marsh island restoration in the center of the bay.

The USACE requests your input on the attached seven restoration sites and the sharing of any data collection or modeling efforts your organization has conducted over the recent years. The USACE intends to coordinate with your existing and future plans for protecting New York City's coastline and looks forward to public outreach meetings in the near future.

REFERENCES

Public Law 113-2 — Jan. 29, 2013, Disaster Relief Appropriations: Chapter 4, Department of the Army, Corps of Engineers—Civil. (Appendix 1)

First Interim Report to Congress, submitted by the Assistant Secretary of the Army for Civil Works, 11 March 2013. (Appendix 2)

Second Interim Report to Congress, submitted by the Assistant Secretary of the Army for Civil Works, 30 May 2013. (Appendix 3)

U.S. Army Corps of Engineers (USACE). 1997. Jamaica Bay Navigational Channels and Shoreline Environmental Surveys Final Report. Compiled by the New York District.

U.S. Army Corps of Engineers (USACE). 2003. Jamaica Bay Shoreline Stability Analysis Report.

U.S. Army Corps of Engineers (USACE) & NYC Department of Environmental Protection (NYCDEP). Undated. Jamaica Bay, Marine Park and Plumb Beach, New York – Environmental Restoration Study Pre-Draft Interim Feasibility Report Kings and Queens Counties, New York.

ATTACHMENT 1

Project Summary Sheets
Recommended Restoration Sites in Pre-Draft Interim Feasibility Study

- 102. Brant Point
- 104. Spring Creek
- 148. Bayswater Park
- 149. Dubos Point
- 161. Hawtree Point
- 730. Fresh Creek
- 731. Paerdegat Basin (removed from further evaluation)
- 732. Dead Horse Bay

Sheets prepared for the Hudson Raritan Estuary Ecosystem Restoration Feasibility Study presenting both project conceptual plans presented in the Interim Pre-Draft Feasibility Study Report and plans consistent with HRE Target Ecosystem Characteristics

Information italicized reflects modified updated text from that provided in the NY/NJ Harbor Estuary Program (HEP) Open Accessible Space Information System (OASIS) Database

CRP SITE 102. BRANT POINT

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: *0.1 miles west from the corner of Beach 72nd Avenue and Bayfield Avenue Queens NY. The site is on a west facing point along the Broad and Grass Hassock channels.*

Watershed: Jamaica Bay

Size: 7 acres

Ownership: Private, NYC GSA, Trust for Public Land, *NYCDPR.*

Site Description: *The area was assigned to the NYC Department of Parks & Recreation (NYCDP&R in 1992. An additional parcel of land was acquired by condemnation for the City of New York in 1997 and then transferred to NYCDP&R. The area remains undeveloped in order to preserve the natural wildlife habitat and protect Jamaica Bay. A grounded barge offshore (no longer present {*Robert Will, Personal Communication, July 26, 2013*}) had acted as an erosion control device and created high quality benthic habitat behind the structure.*

The shoreline consists of a steep-banked, high marsh zone. The straight cut bank at the edge of the marsh and the absence of an extensive low marsh demonstrates that the shoreline is actively eroding.

The upland portions of the site near Barbadoes Drive consist of fill material containing construction debris. Some of the fill forms an earth berm between the high marsh and an adjoining vacant parcel to the south. Additional fill material and debris are scattered throughout the upland portion of the park.

The high marsh area contains saltmeadow cordgrass (Spartina patens) as the dominant plant species within an area along the shoreline. Toward the interior of the site, marsh-elder, seaside goldenrod, and common reed become more prominent. The fill areas contain old field and scrub shrub cover types with a high proportion of invasive species, such as mugwort, common reed, and common ragweed. Other species present include poison ivy (Toxicodendron radicans), Virginia creeper (Parthenocissus quinquefolia), goldenrods, Queen Anne's lace, Asiatic bittersweet (Cephalanthus), Japanese knotweed (Polygonum cuspitatum), black locust and black cherry. The vacant parcel adjoining the southeast portion of the site contains a disturbed area with short common reed, saltmeadow cordgrass, and sedges (Cyperus).

Current Land Use: *Wildlife Sanctuary. Land is zoned as degraded vacant and open space/recreational site with parks/public lands. The surrounding land is zoned as a vacant, 1 & 2 family residential, and open/recreational space.*

Available Habitat: Wetland. *This site has intertidal marshes and estuary/marine habitat.*

Proposed Project: Marsh, meadow and maritime forest restoration. See Section B, Restoration Recommendations below.

Projected/Estimated Costs: approximately *$6.7 million (USACE, undated).*

Project Status: Draft Jamaica Bay, Marine Park and Plumb Beach, NY Ecosystem Restoration Interim Feasibility Study to be reformulated per Second Interim Disaster Relief Appropriations Act, 2013

Partners: NYCDEP, NYSDEC, NYCDP&R, National Park Service, USACE

Project Summary Sheet for Brant Point, Jamaica Bay

Project Contact: Lisa A. Baron, Project Manager, USACE
Phone: (917)790-8306
Website: http://www.nan.usace.army.mil/project/newyork/factsh/pdf/jamaica.pdf

Project Funding Source: Feasibility Study funded by USACE and NYCDEP

HEP Ratification Date: 12/11/1997

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION

Restoration Recommendations (Applicable Target Ecosystem Characteristics):
Coastal Wetlands - Protects the existing 1.2 acres of marsh but also restores approximately 2 acres of low marsh, 0.7 acres of high marsh. Soil excavated to re-grade for the marsh creation will be used for onsite landscaping. Marsh protection is achieved through addition of hard structure on both off-shore and along the shoreline in vulnerable areas.
Coastal and Maritime Forests – Restores approximately 2.5 acres of meadow, and 2.5 acres of maritime forest. Coastal meadows will be planted with native forbs and shrubs. The maritime forest area will include the planting of canopy trees, understory trees, ferns, forbs, and shrubs.
Habitat for Fish, Crab and Lobsters - Creates macroinvertebrate habitat by creating three offshore rubble mounds with a footprint of approximately 0.36 acres total. These structures will be placed randomly within a trapezoidal shape which incorporate interstitial spaces of various sizes that can be used as refugia by various species and also provide wave attenuation to the area. Additionally, approximately 6 acres of existing benthic habitat should be assessed for composition, level of degradation and potential enhancements to increase habitat connectivity.
Sediment Contamination – Additional data may be required during Preliminary Engineering and Design (PED) phase to determine final grading/excavation plan. Restoration alternative will improve exposure to potential chemicals of concern in soil/sediment by placing clean growing media within the maritime forest and grasslands reducing exposure to upland receptors.

Benefits, Cost and Comparative Restoration Ratio: TBD

C. EXISTING SITE SPECIFIC DATA INVENTORY (USACE Pre-Draft FS Report, Undated + Supplemental citations if available listed below**)**

A. Survey, Maps and GIS: NYC DPR, USACE 1997.
B. Site History and Land Use: USACE 1997.
C. Biological Studies/ Fauna: TPL & NYC Audubon 1992.
D. Biological Studies/ General Environment: TPL & NYC Audubon 1992.
E. Geotechnical:
G. Water and Sediment:
H. Historical and Cultural Resources: No NR listed sites. Baseline survey performed (Pan-American Consultants, Inc. 1999).
I. Restoration Remediation and Design Plans: USACE 1997

REFERENCES:

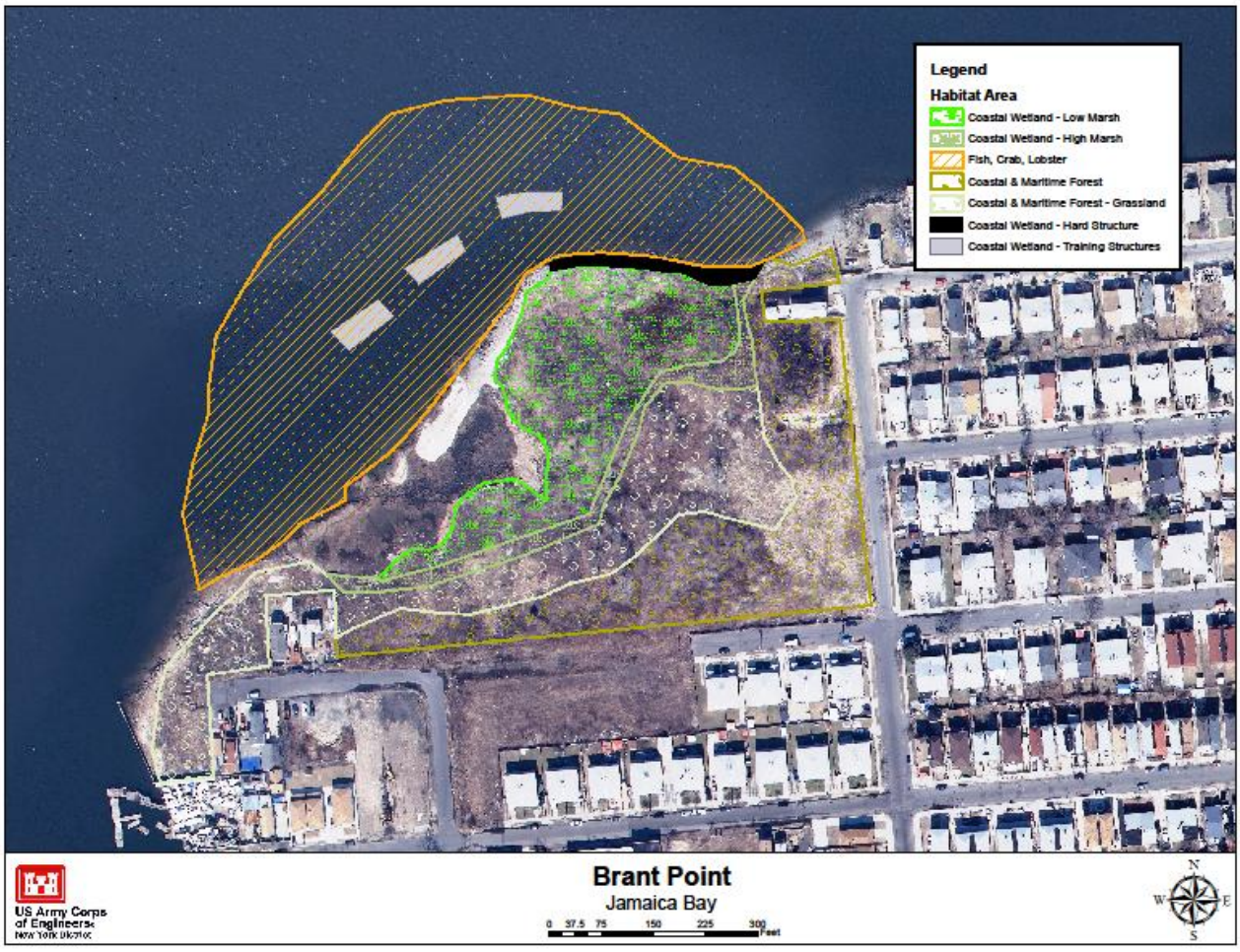
- NYC DPR: http://www.nycgovparks.org/parks/Q464/

- Robert Will, Personal Communication, July 26, 2013

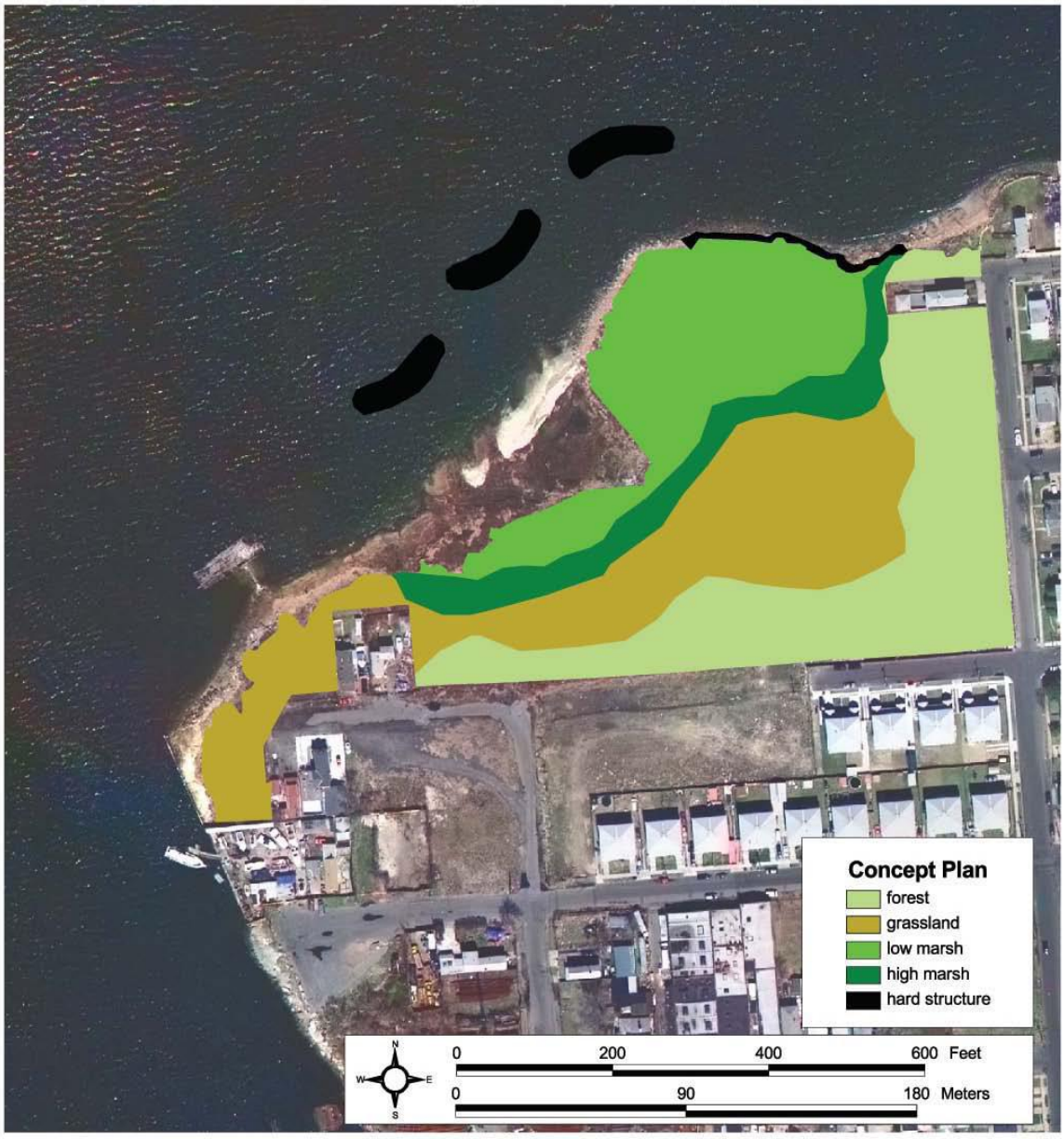
- The Trust for Public Land & New York City Audubon Society. 1992. Buffer the Bay Revisited an Updated Report on Jamaica Bay's Open Shorelines and Uplands.

- U.S. Army Corps of Engineers. 1997. Jamaica Bay Navigational Channels and Shoreline Environmental Survey.

- U.S. Army Corps of Engineers & NYC Department of Environmental Protection. Undated. Jamaica Bay, Marine Park and Plumb Beach, New York - Environmental Restoration Study Pre-Draft Feasibility Report Kings and Queens Counties, New York.



BRANT POINT RECOMMENDED ALTERNATIVE (from Pre-Draft Interim Feasibility Study Report)



CRP SITE 104. SPRING CREEK

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: Spring Creek North is bounded by Stanley Ave., Belt Parkway., Crescent St., and 77th St. in Northern Jamaica Bay along the Queens-Brooklyn border. Spring Creek South runs from south of the Belt Parkway, southeast to the intersection with Cross Bay Blvd.

Watershed: Jamaica Bay

Size: North: 29 acres (Continuing Authorities Program [CAP]). South: (301 acres) *151.6 acres (Feasibility Study)*

Ownership: North of Belt Parkway: NYCDPR. South of Belt Parkway: *NPS, GNRA.*

Site Description: Headwaters of Spring Creek flow between the recently remediated and restored Pennsylvania Avenue and Fountain Avenue landfills. Spring Creek is a mostly city-owned property with a few scattered privately-held holdings. *Spring Creek is adjacent to commercial and industrial land uses to the west and residential land uses to the east and north. It is a saline waterbody with a 10 million gallon CSO retention facility and storm sewer flows representing a large percentage of its freshwater inputs. Adjoining lands include low and high marsh as well as filled upland areas up to the creek channel. Spring Creek North is a tidal creek that has retained its meandering pattern and has several smaller side channels; mud flats are present at low tide. A petroleum pipeline crosses the central portion of the site parallel to Flatlands Avenue in Spring Creek North. The shoreline of Spring Creek South is characterized by steep banks. The creek channel has a depth of four to five feet below the adjoining marshes.*

Current Land Use: Active and passive recreation. *Site is zoned vacant with federal lands. The surrounding land is zoned vacant, 1 & 2 and multi-family residential, commercial, and open/recreational site.*

Available Habitat: *The predominant cover types in the southern portion of Spring Creek North consist of low and high marsh dominated by Spartina. The uplands consist of disturbed fields dominated by mugwort. Dense stands of common reed are also present. Spring Creek South contains marsh, dune, grassland, and secondary woodlands that are dominated by invasives (e.g., common reed).*

Proposed Project:
Spring Creek North (CAP): The proposed ecosystem restoration project in Spring Creek North includes excavating and re-contouring uplands to intertidal elevations, removing invasive plant species, and replanting with native plant species to create 10.66 acres of low marsh, 2.33 acres of high marsh, 3.04 acres of high marsh transition, and 7.34 acres of maritime upland.

Spring Creek South (Feasibility Study) seeks to improve the habitat in Spring Creek Park, located in northern Jamaica Bay, and bounding the counties of Kings and Queens. The construction, maintenance, and improvement of the network of channels in Jamaica Bay required the dredging of millions of cubic yards of material. Most of this material was deposited in nearby wetland areas, profoundly degrading the salt marsh community at Spring Creek. The proposed project would restore a total of 151.6 acres of habitat including 49 acres of low marsh, 10 acres of high marsh and 6 acres of tidal creek.

Projected/Estimated Costs: South: approximately *$65 million* (USACE, undated). *North TBD (note to be implemented under CAP, cannot exceed approximately $7 million.)*
Project Status: Spring Creek North: Continuing Authorities Program- Project currently being redesigned to align projects costs below the funding maximum of the CAP authority.
Spring Creek South: Pre-Draft Jamaica Bay, Marine Park and Plumb Beach, NY Ecosystem Restoration Interim Feasibility Study to be reformulated per Second Interim Disaster Relief Appropriations Act, 2013

Project Summary Sheet for Spring Creek, Jamaica Bay

Partners: NYCDPR, NYSDEC, NYCDEP, USACE, NPS

Project Contact: Lisa Baron, Project Manager, USACE;
Phone: (917) 790-8306
Website: http://www.nan.usace.army.mil/project/newyork/factsh/pdf/springcr.pdf
Project Funding Source: USACE

HEP Ratification Date: 8/13/2002

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION

Restoration Recommendations (Applicable Target Ecosystem Characteristics):
Spring Creek South (concept plan below)

Coastal Wetlands – Maximize salt marsh habitat restoration in the northern portion of the southern site by re-grading the adjacent common reed stand to elevations required for a self-sustaining salt marsh. The re-grading will include the creation of approximately 9,333 feet of lower order small tidal creeks to allow inundation of tides farther into the marsh; approximately 49 acres of low marsh and 10 acres of high marsh and 6 acres of tidal creeks.
Shorelines and Shallows – Garbage and other debris will be excavated from approximately 5,500 feet of shoreline.
Habitat for Fish, Crab and Lobsters – Clean up of heavily debris laden shoreline and assess flats for composition, level of degradation and potential enhancements to increase habitat connectivity- such as addition of complex structure should take place along approximately 27 acres.
Coastal and Maritime Forests – Where applicable excavated material from the shorelines will be placed onsite, recapped with sand and planted with native canopy trees, understory trees, shrubs, forbs, and ferns and other native maritime costal community species to aid in sediment stabilization along approximately 106 acres. Additionally, the southern portion will have approximately 32 acres of coastal dune habitat restored and planted with native grass species.
Sediment Contamination – Re-grading and restoration actions within Spring Creek would result in a decrease of exposure to potential chemical of concern as refined during the Preliminary Engineering and Design phase.
Public Access – Support improvements to pedestrian access and recreation.

Spring Creek North

Planning is in progress pursuant Continuing Authorities Program (CAP).

Benefits, Cost and Comparative Restoration Ratio: TBD

C. EXISTING SITE SPECIFIC DATA INVENTORY (USACE Pre-Draft FS Report, Undated + Supplemental citations if available listed below)

A. Survey, Maps and GIS: NYC DPR 1988, USACE 1997
B. Site History and Land Use: Hydroqual
C. Biological Studies/ Fauna: NYC DPR 1988, TPR & NYC Audubon 1992
D. Biological Studies/ General Environment: NYC DRP 1988, TPR & NYC Audubon 1992
E. Geotechnical:
F. Hydraulics and Hydrology:
G. Water and Sediment:
H. Historical and Cultural Resources: No NR sites in the study area. Archaeological sensitivity area overlaps northwest end. Cultural Resources Baseline Study performed (Pan-American Consultants, Inc. 1999).
I. Restoration Remediation and Design Plans: USACE 1997, NYC DCP 2010.

REFERENCES:

- NYC DPR. 1988. Ecological Assessment Spring Creek. Natural Resources Group.

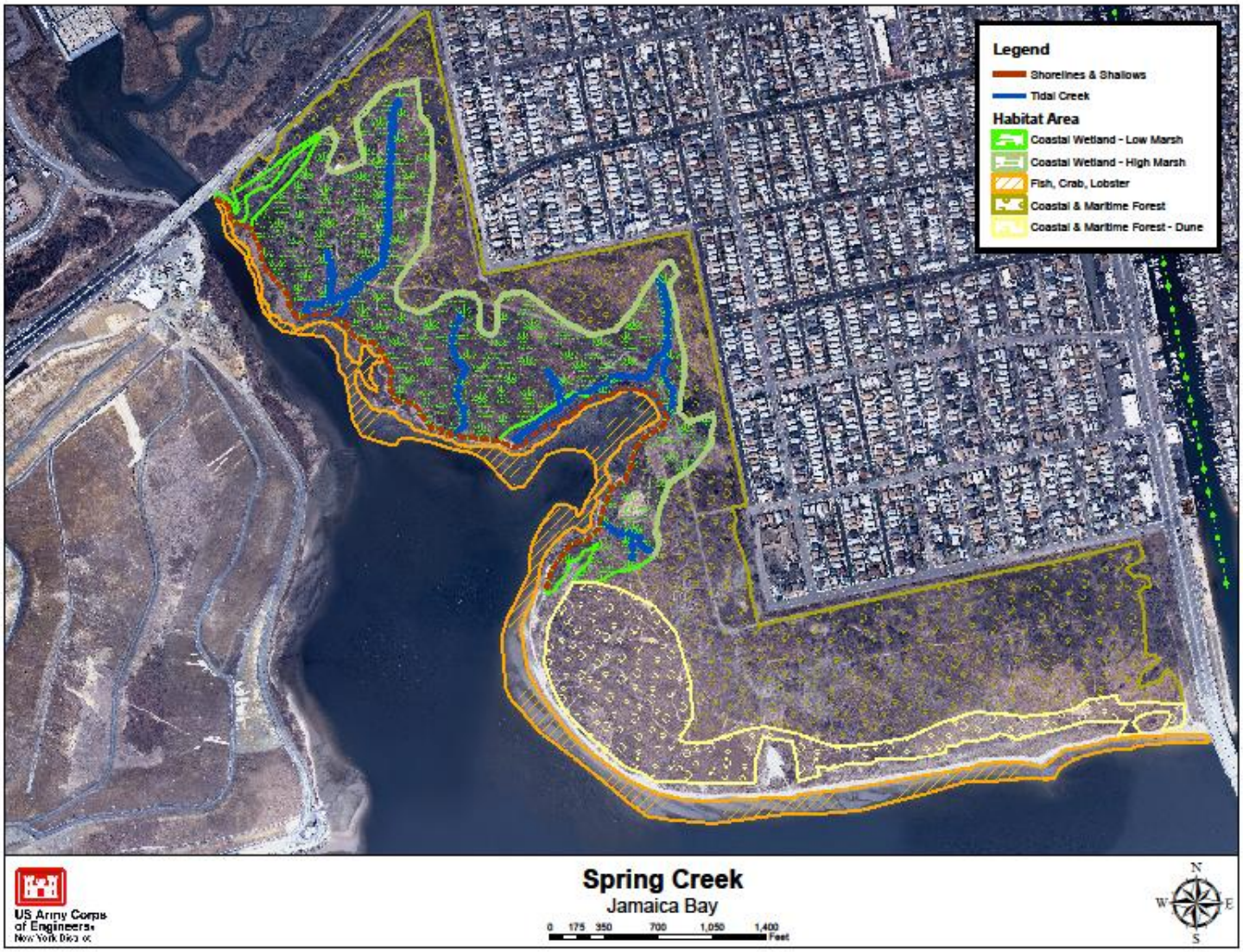
- U.S. Army Corps of Engineers. 1997. Jamaica Bay Navigational Channels and Shoreline Environmental Survey.

- U.S. Army Corps of Engineers. Undated. Jamaica Bay, Marine Park and Plumb Beach, New York Environmental Restoration Study PRE-Draft Interim Feasibility Report Kings and Queens Counties, New York.

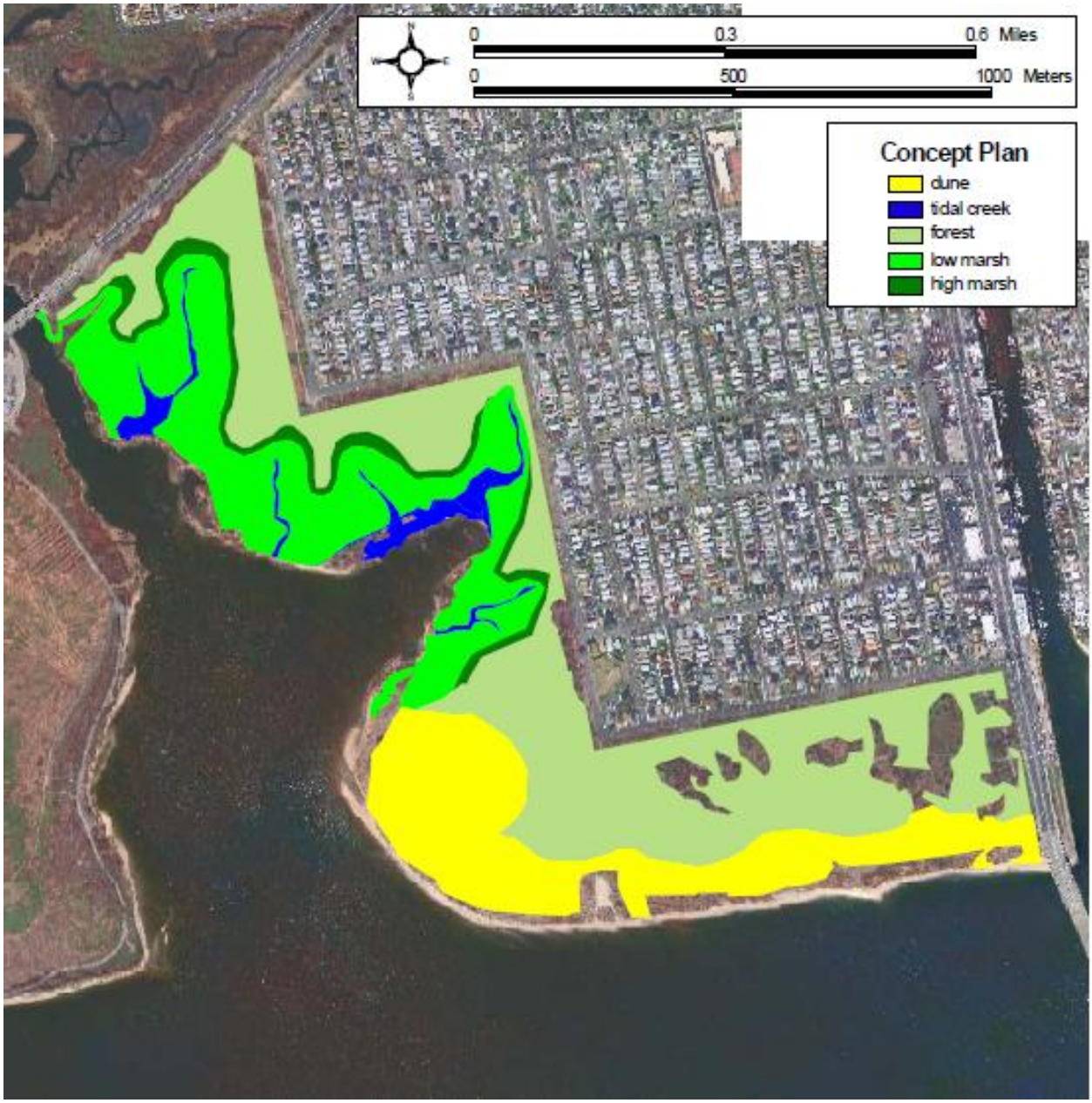
- Hydroqual- http://www.hydroqual.com/Projects/usa/projectAreaFrameset.html

- The Trust for Public Land & New York City Audubon Society. 1992. Buffer the Bay Revisited An Updated Report on Jamaica Bay's Open Shorelines and Uplands.

- New York City Department of City Planning. 2010. New York City Comprehensive Waterfront Plan Draft Recommendations.



SPRING CREEK RECOMMENDED ALTERNATIVE (from Pre-Draft Interim Feasibility Study Report)



CRP SITE 148. BAYSWATER STATE PARK

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: Penninsula in the Rockaways that juts out into the Mott Basin on the eastern shore of Jamaica Bay.

Watershed: Jamaica Bay

Size: 17 acres (*4.8 acres of total habitat*)

Ownership: New York State Office of Parks, Recreation, and Historic Preservation.

Site Description: *The proposed project area at Bayswater State Park was primarily salt marsh as of 1879, with four structures on site. Bayswater Park has a number of special natural features including the last patch of mature native oak forests on Jamaica Bay. Historical documents indicate that the predominant upland areas within the site are natural rather than fill areas. The ecological problems at Bayswater State Park are; presence of extensive areas of nonnative, invasive plant species and potential loss of habitat due to deteriorating seawall.*

Current Land Use: Active and passive recreation. *Site is zoned vacant and completely degraded open/recreational site with parks/public lands. The surrounding land zoned vacant, 1 & 2 family residential, institutional, and open/recreational site.*

Available Habitat: *State Park. The site contains beaches, wetlands, and woodlands.*

Proposed Project: Salt marsh and tidal wetland restoration. The goal of the park is to preserve the existing natural systems and restore, if feasible, what has been lost.

HEP Projected (1997)/Estimated Costs: $300,000/ approximately *$3.7 million* (USACE, undated)

Project Status: Draft Jamaica Bay, Marine Park and Plumb Beach, NY Ecosystem Restoration Interim Feasibility Study to be reformulated per Second Interim Disaster Relief Appropriations Act, 2013

Partners: NYCDPR, NYSDEC, NYCDEP, USACE, NPS

Project Contact: Lisa Baron, Project Manager, USACE
Phone: (917)790-8306
Website: http://www.nan.usace.army.mil/project/newyork/factsh/pdf/jamaica.pdf

Project Funding Source: USACE and NYCDEP Jamaica Bay Feasibility Study

HEP Ratification Date: 12/11/1997

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION

Restoration Recommendations (Applicable Target Ecosystem Characteristics):
Coastal Wetlands - Remove invasive dominated areas by re-grading and creating a tidal channel and associated salt marsh. Restoration may total 4.8 acres and include approximately 3 acres of low marsh, 0.4 acres of high marsh, and 0.8 acres (872 feet) of creek/pool. To stabilize the tidal creek and protect the existing beach and salt marsh habitat, training structures will be created on the banks at the mouth of the creek.
Coastal and Maritime Forests – Restoration to approximately 0.7 acres of dune habitat.
Habitat for Fish, Crab and Lobsters - The training structures will be made of rock placed in a trapezoidal cross section. The rocks will be placed randomly within the shape to create various size interstitial spaces that can be used as refuges by various species.
Sediment Contamination – The restoration action decreases current exposure to receptors following re-grading. Capping of upland soils with sand from the northern portion of the site with an additional 12 inches of growing medium will further reduce any remaining exposure to receptors.

Benefits, Cost and Comparative Restoration Ratio: TBD

C. EXISTING SITE SPECIFIC DATA INVENTORY (USACE Pre-Draft FS Report, Undated + Supplemental citations if available listed below)

A. Survey, Maps and GIS:
B. Site History and Land Use:
C. Biological Studies/ Fauna:
D. Biological Studies/ General Environment:
E. Geotechnical:
F. Hydraulics and Hydrology:
G. Water and Sediment:
H. Historical and Cultural Resources: Presence of known cultural resources in park area. Baseline cultural resources survey and Phase IB were performed (Pan-American 1999, 2006)
I. Restoration Remediation and Design Plans:

***Work in progress**

REFERENCES:

- U.S. Army Corps of Engineers & NYC Department of Environmental Protection. undated. Jamaica Bay, Marine Park and Plumb Beach, New York - Environmental Restoration Study PRE-Draft Interim Feasibility Report Kings and Queens Counties, New York.


Legend
Tidal Creek
Habitat Area
Coastal Wetland - Low Marsh
Coastal Wetland - High Marsh
Coastal & Maritime Forest - Dune
Coastal Wetland - Hard Structure
US Army Corps of Engineers
New York District
Bayswater State Park
Jamaica Bay
0 45 90 180 270 360
Feet
N
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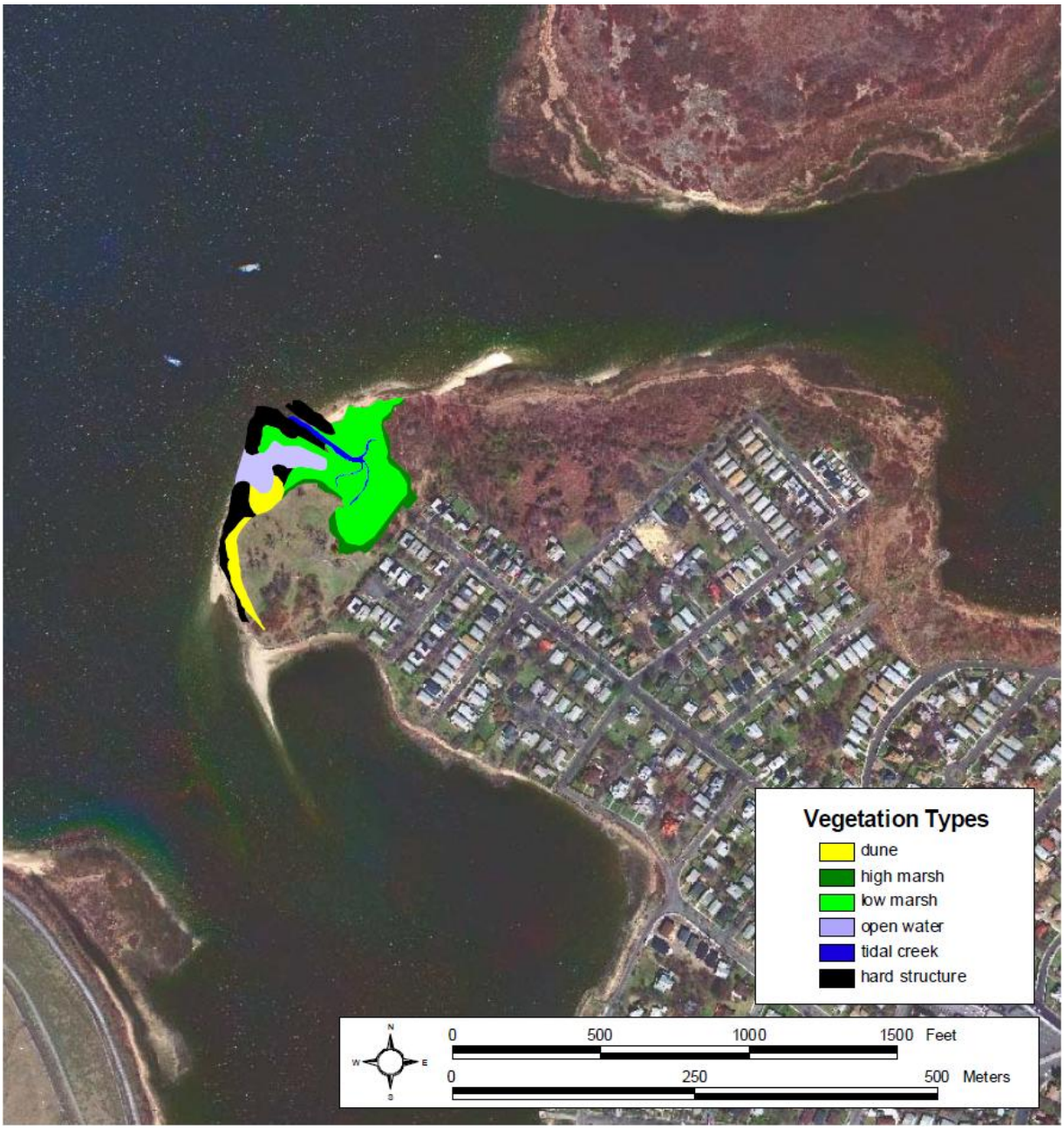
E
S

BAYSWATER STATE PARK RECOMMENDED ALTERNATIVE (from Pre-Draft Interim Feasibility Study Report)



CRP SITE 149. DUBOS POINT

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: 0.1 miles east northeast from the corner of Bayfield Avenue and Beach 65th Street.

Watershed: Jamaica Bay

Size: 35.9 acres (*total of 6.8 acres to be restored*)

Ownership: NYCDPR

Site Description: *This site contains a diverse native flora within each of the predominat cover types. The zonation of cover types from tidal marsh to upland scrub shrub and old fields provides valuable wildlife habitat within Jamaica Bay. The salt marsh at Dubos Point was mostly untouched until the 1920's. Dubos Point was filled between 1912 and 1919.*

The shoreline of the entire site is bordered by approximately 50-foot-wide bands of low marsh. Along the western and northern shorelines, old wood piles are sporadically present along the marsh edge. Fewer piles exist along the eastern shoreline of the site. Assorted debris is scattered along the mean high tide line and several bare sand patches are present where larger debris has scoured the surface. Dubos point experiences high erosion.

The soils within the uplands are derived from fill material. The soil consists of loamy sand and contains large pieces of concrete. The low marsh is on a substrate of sand with a thin layer of organics.

The interior upland contains a diverse cover of mixed scrub shrub and old field. The scrub shrub is formed primarily by winged sumac, bayberry, black cherry, blackberry and marsh-elder mixed with common reed and goldenrods. The old field community is a mix of forbs and grasses. Predominant species include seaside goldenrod, common reed, switchgrass, common ragweed, mugwort, flat-topped goldenrod (Euthamia graminifolia) and evening primrose (Oenothera biennis). A high marsh zone of variable width is present. The predominant species include saltmeadow cordgrass, seaside goldenrod, common reed, marsh orach, marsh elder and groundsel-tree. The low marsh is dominated by saltmarsh cordgrass and also includes sea lavender and glasswort.

The ecological problems at Dubos Point are; presence of areas of nonnative, invasive plant species, high energy littoral zone along western and northern shorelines, mosquito infestation of local properties due to pooling water, dumped trash and debris may impede use of site, fill that removed marsh.

Current Land Use: Wildlife sanctuary. *Site is zoned degraded vacant, open/recreational site with parks/public lands. The surrounding land is zoned industrial, 1 & 2 family residential, and transportation/utilities site.*

Available Habitat: Wetland, low marsh, old field, uplands. See site description for existing vegetation community.

Proposed Project: The area requires salt marsh and tidal wetland restoration and a great deal of debris removal.

HEP Projected (1997)/Estimated Costs: $423,900/ approximately *$7.7 million* (USACE undated)

Project Status: Pre-Draft Jamaica Bay, Marine Park and Plumb Beach, NY Ecosystem Restoration Interim Feasibility Study to be reformulated per Second Interim Disaster Relief Appropriations Act, 2013.

Partners: NYCDPR, NYSDEC, NYCDEP, USACE, NPS

Project Summary Sheet for Dubos Point, Jamaica Bay

Project Contact: Lisa Baron, Project Manager, USACE
Phone: (917)790-8306
Website: http://www.nan.usace.army.mil/project/newyork/factsh/pdf/jamaica.pdf
Project Funding Source: USACE and NYCDEP funding Feasibility Study

HEP Ratification Date: 12/11/1997

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION

Restoration Recommendations (Applicable Target Ecosystem Characteristics):
Coastal Wetlands - Restore marsh by creating tidal channels in an existing upland common reed stand and re-grading the area to salt marsh elevations. Tidal channels in the northern tip will also be reopened, with the addition of training structures. A total of 6.8 acres will be restored at this site including approximately, 3.5 of low marsh, 1 acre of high marsh, and 0.7 acres (2,164 feet) of creek or pool. Marsh habitat is protected by implementing toe protection surrounding the entire western and northern shore. The north and west shorelines are exposed to high wave forces from Jamaica Bay.
Coastal and Maritime Forests – Potential exists to restore approximately 2 acres of maritime forest.
Sediment Contamination – Chemicals concentrations measured in soil/sediment were minimal. Capping of upland soils with clean growing medium (if needed) for the restoration action would reduce any exposure to receptors in the future 2 acres of maritime forest.
Oyster Reef- Incorporation of a significant hard-structure based fringing oyster bed is possible at this site, likely in concert with a "living shoreline" approach to address coastal resiliency.

Benefits, Cost and Comparative Restoration Ratio: TBD

C. EXISTING SITE SPECIFIC DATA INVENTORY (USACE Pre-Draft FS Report, Undated + Supplemental citations if available listed below)

A. Survey, Maps and GIS:
B. Site History and Land Use:
C. Biological Studies/ Fauna:
D. Biological Studies/ General Environment:
E. Geotechnical:
F. Hydraulics and Hydrology:
G. Water and Sediment:
H. Historical and Cultural Resources:
I. Restoration Remediation and Design Plans:

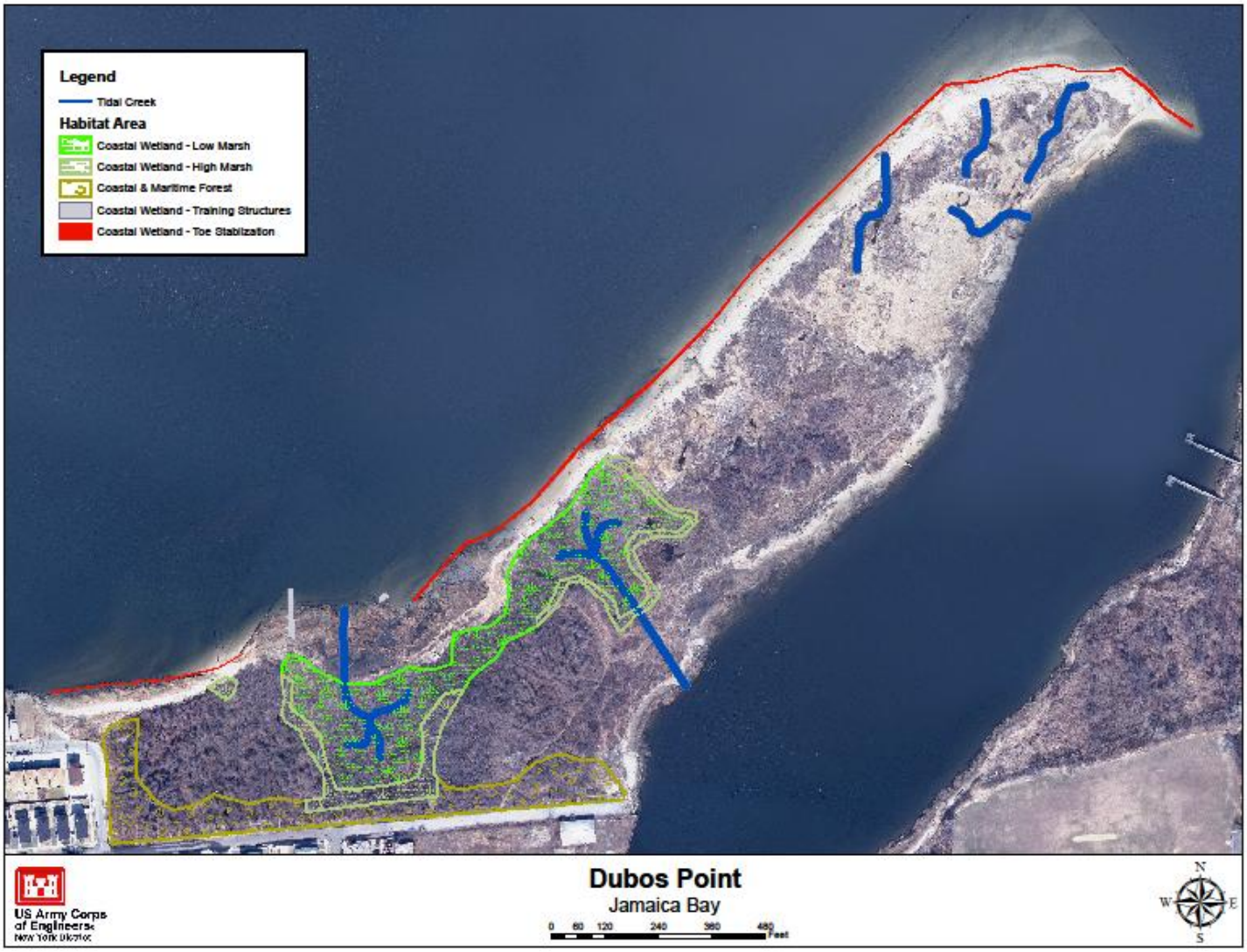
***Work in progress**

REFERENCES:

- NYC Parks: http://www.nycgovparks.org/parks/Q459/

- U.S. Army Corps of Engineers & NYC Department of Environmental Protection. undated. Jamaica Bay, Marine Park and Plumb Beach, New York - Environmental Restoration Study PRE-Draft Interim Feasibility Report Kings and Queens Counties, New York.

- The Trust for Public Land & New York City Audubon Society. 1992. Buffer the Bay Revisited An Updated Report on Jamaica Bay's Open Shorelines and Uplands.


Legend
Tidal Creek
Habitat Area
Coastal Wetland - Low Marsh
Coastal Wetland - High Marsh
Coastal & Maritime Forest
Coastal Wetland - Training Structures
Coastal Wetland - Toe Stabilization
US Army Corps of Engineers
New York District
Dubos Point
Jamaica Bay
0 60 120 240 360 480
Feet
N
W
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DUBOS POINT RECOMMENDED ALTERNATIVE (from Pre-Draft Interim Feasibility Study Report)

CRP SITE 161. HAWTREE POINT

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: 0.1 miles west of 104th Street, Queens NY. *This site consists of two locations located along Hawtree Basin. The first location is on the east bank of the creek between Davenport Street and 164th Avenue. The second and larger portion of this site is a mostly vacant parcel located between 103rd Street and Russell Street on the east, 1st Street on the south and 160th Avenue on the north.*

Watershed: Jamaica Bay

Size: 20 acres

Ownership: NYCDPR, *National Park Service, GNRA.*

Site Description: In the early 1900s, a canal was dug at the southern end of the Hawtree creek to create Hawtree Basin. *Hawtree Point was filled during the development of the communities of Howard Beach and Hamilton Beach.*

The shoreline is characterized by pile and bulkhead supported houses that extend over the water along developed shoreline edges. Along undisturbed portions of the existing tidal marsh, the banks of the channels have a steep gradient that rises into the marsh. Narrow mud flats fringe the undeveloped tidal marshes at low tide. The soils consist of organic peat within the tidal marsh, and silts within the channel.

Within undeveloped portions of the larger site, the cover type consists of a high marsh community dominated by saltmeadow cordgrass with patches of marsh elder and common reed. A narrow, ten-foot wide fringe of saltmarsh cordgrass is present along the channel edge. The smaller site to the south consists of unvegetated sediments and sparse stands of saltmarsh cordgrass. Patches of low marsh are present between buildings.

The ecological problems at Hawtree Point include: presence of monotypic stands of nonnative, invasive plant species, historic structures and canal systems of Hamilton Beach under the fill, all terrain vehicle use along the shoreline of the project area and filled wetlands.

Current Land Use: *Some residential homes are present along the main channel that extends to the east. Several homes in this area appear to be abandoned. The site is zoned open/recreational site with federal land. The surrounding land is zoned vacant, 1 & 2 family residential, transportation/utilities, and open/recreational site.*

Available Habitat: Wetland intertidal shallows, low marsh, scrub-shrub/forested upland.

Proposed Project: [HEP nomination: recommended Salt marsh restoration.]. Protection of remaining marshes by replacing invasive dominated area with 1.7 acres of coastal scrub and grassland habitat and creation of barrier to motorized vehicles by placing boulders along the boundary of the restoration area.

HEP Projected (1997)/Estimated Costs: $360,000/ approximately *$0.8 million* (USACE, undated)

Project Status: Pre-Draft Jamaica Bay, Marine Park and Plumb Beach, NY Ecosystem Restoration Interim Feasibility Study to be reformulated per Second Interim Disaster Relief Appropriations Act, 2013.

Partners: NYCDPR, NYSDEC, NYCDEP, USACE, NPS

Project Contact: Lisa Baron, Project Manager, USACE

Project Summary Sheet for Hawtree Point, Jamaica Bay

Phone: (917)790-8306
Website: http://www.nan.usace.army.mil/project/newyork/factsh/pdf/jamaica.pdf

Project Funding Source: USACE and NYCDEP funded the Jamaica Bay Feasibility Study

HEP Ratification Date: 12/11/1997

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION

Restoration Recommendations (Applicable Target Ecosystem Characteristics):
Coastal Wetlands - An existing patch of salt marsh hay (0.07 acres) will be excavated and re-planted. This area is currently being invaded by the surrounding invasives. Salt marsh hay will be planted in the location after the excavation and regrading of the surrounding land. The net amount of wetland habitat will be the same before and after project implementation.
Coastal and Maritime Forests – Recovery of approximately 1.7 acres of coastal scrub shrub and grassland habitat from the existing invasive dominated areas. Some regrading and grubbing would remove the invasive species and native grasses and shrubs will be planted at the site. This alternative also includes the creation of a natural boulder barrier to motorized vehicles.

Benefits, Cost and Comparative Restoration Ratio: TBD

C. EXISTING SITE SPECIFIC DATA INVENTORY (USACE Pre-Draft FS Report, Undated + Supplemental citations if available listed below)

A. Survey, Maps and GIS:
B. Site History and Land Use:
C. Biological Studies/ Fauna:
D. Biological Studies/ General Environment:
E. Geotechnical:
F. Hydraulics and Hydrology:
G. Water and Sediment:
H. Historical and Cultural Resources:
I. Restoration Remediation and Design Plans:

***Work in progress**

REFERENCES:

- U.S. Army Corps of Engineers. 1997. Jamaica Bay Navigational Channels and Shoreline Environmental Survey.

- U.S. Army Corps of Engineers & NYC Department of Environmental Protection. Undated. Jamaica Bay, Marine Park and Plumb Beach, New York - Environmental Restoration Study PRE-Draft Interim Feasibility Report Kings and Queens Counties, New York.

- The NYC Waterfront Revitalization Program: Proposed Revisions for Public Review.


Legend
Habitat Area
Coastal Wetland - High Marsh
Coastal & Maritime Forest - Shrub
Coastal & Maritime Forest - Barrier
US Army Corps of Engineers
New York District
Hawtree Point
Jamaica Bay
0 20 40 80 120 160 Feet
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S

HAWTREE POINT RECOMMENDED ALTERNATIVE (from Pre-Draft Interim Feasibility Study Report)

CRP SITE 732. DEAD HORSE BAY

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: *Site is located in the southwest corner of Barren Island (Floyd Bennett Field), on the west side of Flatbush Avenue and south of Dead Horse Bay.*

Watershed: Jamaica Bay

Size: *161 acres (total 130 acres of habitat)*

Ownership: *National Park Service, GNRA.*

Site Description: *This site consists of undeveloped parkland within the GNRA maintained by the NPS. The shoreline consists mostly of a narrow sandy beach with a few small patches of low marsh located along the central portion of the western shoreline. A bluff, approximately five feet high, forms near the center of the site and extends southward along the western shoreline.*

The small patches of low marsh are dominated by saltmarsh cordgrass. Behind the narrow beach, the foreshore and bluff areas contain mostly grassland habitat dominated by common reed. Narrow bands dominated by beach grass and seaside goldenrod are also present, especially along the bluff. The interior of the site contains large stands of common reed and patches of scrub shrub habitat dominated by bayberry and sumac. Along the northern edge of the site, several patches of trees are present that include cottonwood, black cherry and tree-of-heaven.

Prior to 1941, this site was essentially undisturbed. Most of the marsh area and the southern portion of the open water were covered by landfill by the NYC Parks Department in the 1950s. In the northern portion of the site, the 1941 coastal chart shows that the area remained tidal marsh even after construction of the Belt Parkway. Fill of this area apparently occurred during the 1950's in connection with construction of Marine Park. The ecological problems at Dead Horse Bay include: covering of the historic marsh with fill, including the solid waste landfill in the southern project area placed after 1948, erosion and exposure of the solid waste landfill, steep bathymetry of the southwest and southern shorelines, presence of extensive areas of nonnative and invasive plant species.

Current Land Use: *The land is zoned an open/recreational site with federal land.*

Available Habitat: *Grassland and saltmarsh. The area supports both black-crowned (Nycticorax nycticorax) and yellow-crowned night herons (Nyctanassa violacea). Clapper rails (Rallus longirostris) are heard here in warmer months while winter is a good time for spotting ducks. The Park's upland contains groves of native trees like smooth sumac (Rhus glabra) and non-native trees like the tree of heaven (Ailanthus altissima). Although the basin consists of over 160 acres, more than 75 of those are underwater.*

Project Status: Pre-Draft Jamaica Bay, Marine Park and Plumb Beach, NY Ecosystem Restoration Interim Feasibility Study to be reformulated per Second Interim Disaster Relief Appropriations Act, 2013.

Partners: NYCDPR, NYSDEC, NYCDEP, USACE, NPS

Project Contact: Lisa Baron, Project Manager, USACE
Phone: (917)790-8306
Website: http://www.nan.usace.army.mil/project/newyork/factsh/pdf/jamaica.pdf

Project Funding Source: USACE and NYCDEP funded the Jamaica Bay Feasibility Study

Project Summary Sheet for Dead Horse Bay, Jamaica Bay

Proposed Project: Recommended plan maximizes marsh habitat by creating a tidal channel in the northern portion of the site and regarding the existing upland Phragmites stand to salt marsh elevations to create a 31 acre tidal marsh system. Sand would be beneficially reused no site to create additional restoration opportunities and buffer areas. In total, plan restores 130.7 acres which includes 31 acres of low marsh, 7 acres of high marsh, 4 acres of creek and 27.7 acres of dunes.

Projected/Estimated Costs: approximately *$66.7 million (USACE, undated)*

HEP Ratification Date:

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION

Restoration Recommendations (Applicable Target Ecosystem Characteristics):
Coastal Wetlands – Design maximizes marsh habitat by creating a tidal channel in the northern portion of the site and re-grading the existing upland *Phragmites* stand to salt marsh elevations to create approximately 31 acres of low marsh, 4 acres of creeks (4,122 feet), and 7 acres of high marsh. By the removal action, the fringe marsh will be able to support native wetland plant species with high habitat value. This measure will serve as the least cost placement for the approximately 669,000 cubic yards that must be excavated to create the northern marsh. To stabilize the tidal creek and protect the existing beach habitat, training structures will be created on the banks at the mouth of the creek.
Coastal and Maritime Forests – Excavated sand will be used to create 27.7 acres of dunes along the edge of the water and to restore the 62 acres of existing maritime forest in the southern portion of the site.
Habitat for Fish, Crab and Lobsters – Training structure will be made of rock with an overall trapezoidal shape. The rocks will be placed randomly within the shape to create various size interstitial spaces that can be used as refuges by various species. Additionally, Assessment of flats for composition, level of degradation and potential enhancements to increase habitat connectivity- such as addition of complex structure to mudflats and shallow water to facilitate movement between habitats along approximately 19 acres of existing habitat.
Sediment Contamination – Risks can be reduced and overall improvement can occur as a result of restoration action through use of cleaner areas for capping and grading at the surface.

Benefits, Cost and Comparative Restoration Ratio: TBD

C. EXISTING SITE SPECIFIC DATA INVENTORY (USACE Pre-Draft FS Report, Undated + Supplemental citations if available listed below)

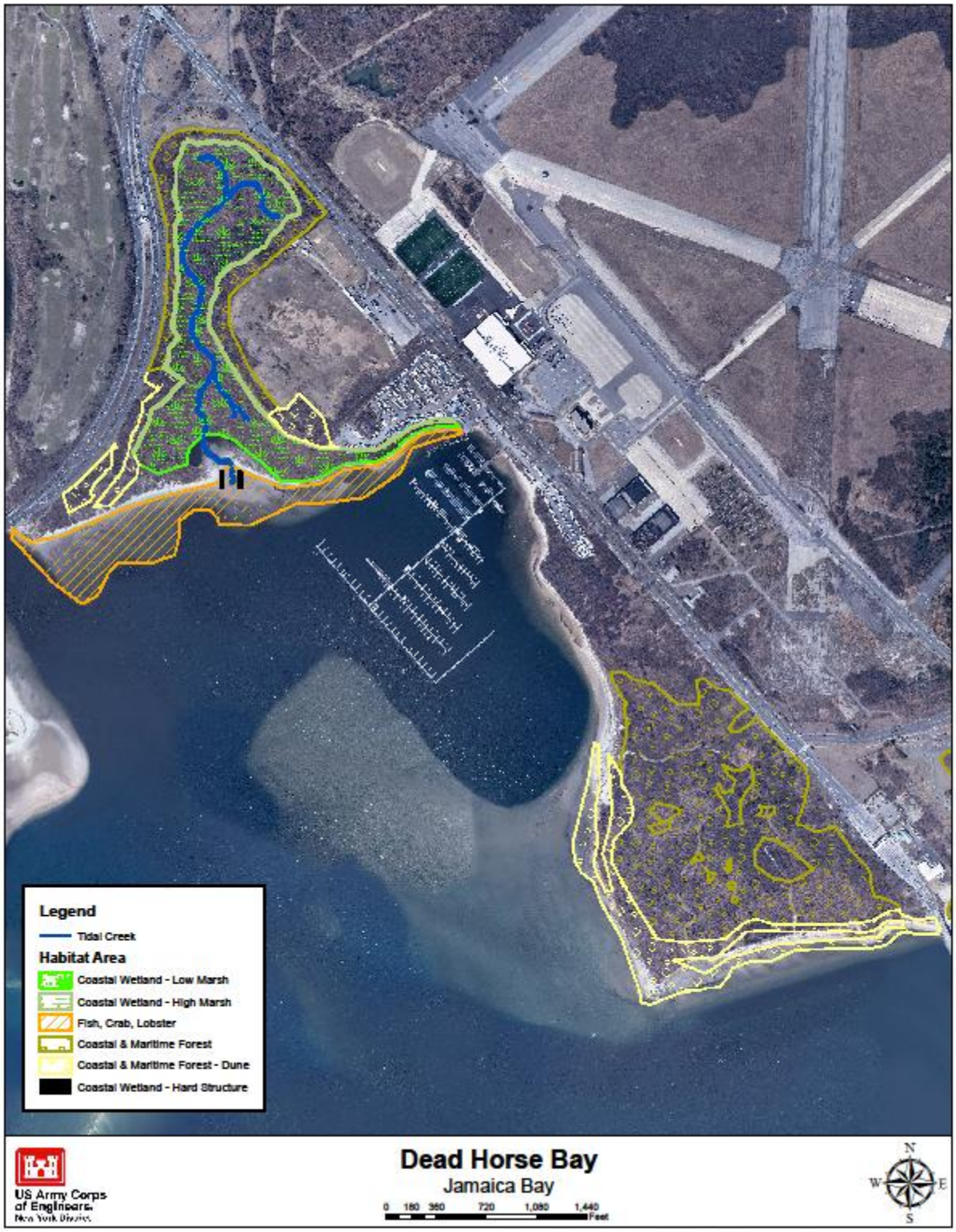
A. Survey, Maps and GIS:
B. Site History and Land Use:
C. Biological Studies/ Fauna:
D. Biological Studies/ General Environment:
E. Geotechnical:
F. Hydraulics and Hydrology:
G. Water and Sediment:
H. Historical and Cultural Resources:
I. Restoration Remediation and Design Plans:

***Work in progress**

REFERENCES:

- U.S. Army Corps of Engineers & NYC Department of Environmental Protection. undated. Jamaica Bay, Marine Park and Plumb Beach, New York - Environmental Restoration Study PRE-Draft Interim Feasibility Report Kings and Queens Counties, New York.

- NYC Parks- http://www.nycgovparks.org/sub_about/parks_divisions/nrg/forever_wild/site.php?FWID=24


Legend
Tidal Creek
Habitat Area
Coastal Wetland - Low Marsh
Coastal Wetland - High Marsh
Fish, Crab, Lobster
Coastal & Maritime Forest
Coastal & Maritime Forest - Dune
Coastal Wetland - Hard Structure
US Army Corps of Engineers
New York District
Dead Horse Bay
Jamaica Bay
0 180 360 720 1,080 1,440
Feet
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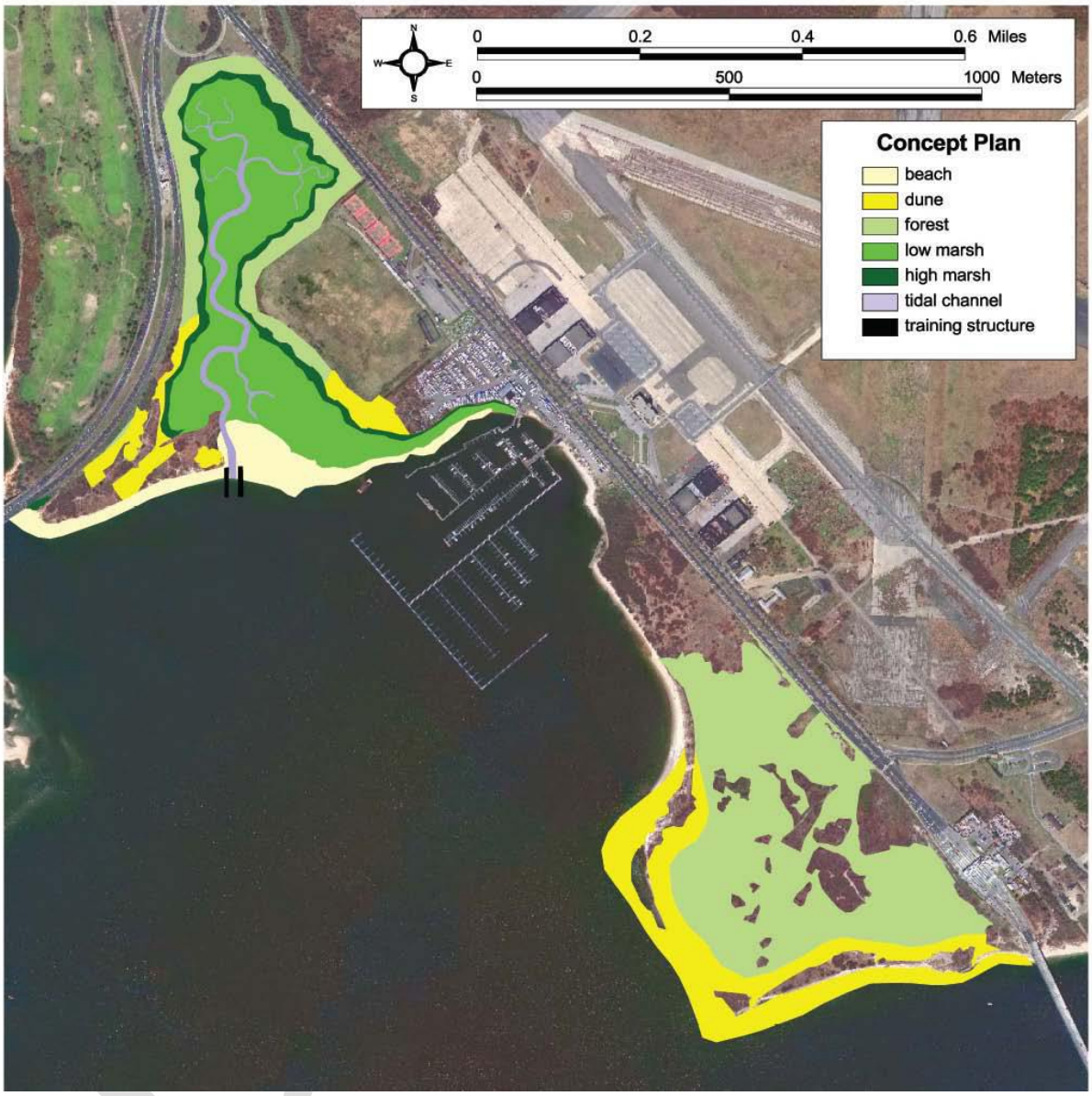
DEAD HORSE BAY RECOMMENDED ALTERNATIVE (from Pre-Draft Interim Feasibility Study Report)



Project Summary Sheet for Fresh Creek, Jamaica Bay

CRP SITE 730. FRESH CREEK

A. HARBOR ESTUARY PROGRAM SITE INFORMATION

Category: Existing restoration, preservation, and/or mitigation site.

Location: *An inlet on the south shore of Brooklyn from Jamaica Bay. Bounded by Flatlands Avenue, Louisiana Avenue, and East 108th Street.*

Watershed: Jamaica Bay

Size: *97 acres*

Ownership: *NYCDPR, NYCDEP.*

Site Description: *Fresh Creek flows into and is a tributary to Jamaica Bay which is located to the south at the mouth of the creek. It ranges in width from approximately 650 feet at its widest point to approximately 125 feet at its narrowest point. The creek is approximately 6,300 feet long and has depths at mean low water which range from three to 19 feet. The creek is shallower at its northern end and deepens as it approaches Jamaica Bay. Areas of marshland continue to be shown bordering the creek south of Flatlands Avenue. A large percentage of the freshwater flow is from a CSO located at the head of the creek and from storm water discharges. The ecological problems at Fresh Creek include: poor benthic habitat, fill deposited on historic wetlands, presence of extensive areas of nonnative invasive plant species, poor water quality at the head of Fresh Creek and straightened/deepened creek with no finger tributaries. The invasive plants common reed (Phragmites australis), mugwort (Artemisia vulgaris), and (Ailanthus altissima) are common in the uplands in Fresh Creek Park, though noteworthy plants such as rock sandwort (Arenaura stricta), Faber's foxtail (Setaria faberi), and velvetleaf (Abutilon theophrasti) are interspersed throughout.*

Current Land Use: *Wildlife preserve. Site is zoned vacant, open/recreational site with parks/public lands. The surrounding land is zoned as a vacant, 1 & 2 and multi-family residential, commercial, institutional, transportation/ utilities, and open/recreational site.*

Available Habitat: *This site has high and intertidal marshes and estuary/marine habitat and some valuable upland habitat.*

Proposed Project: Recommended plan includes basin re-contouring to proper elevation and restoration of 33 acre tidal marsh system with protective buffers, which includes 13 acres of low marsh, 2.4 acres of high marsh, 2.1 acres of creek/pool, 4.5 acres of maritime forest and 11 acres of coastal shrub, as well as 60 acres of shallow water habitat.

Project Status: Pre-Draft Jamaica Bay, Marine Park and Plumb Beach, NY Ecosystem Restoration Interim Feasibility Study to be reformulated per Second Interim Disaster Relief Appropriations Act, 2013.

Partners: NYCDPR, NYSDEC, NYCDEP, USACE, NPS

Project Contact: Lisa Baron, Project Manager, USACE
Phone: (917)790-8306
Website: http://www.nan.usace.army.mil/project/newyork/factsh/pdf/jamaica.pdf

Project Funding Source: USACE and NYCDEP funded the Jamaica Bay Feasibility Study

Projected/Estimated Costs: approximately *$31 million (USACE, undated)*

HEP Ratification Date:

B. HUDSON RARITAN ESTUARY ECOSYSTEM RESTORATION STUDY INFORMATION

Restoration Recommendations (Applicable Target Ecosystem Characteristics):
Coastal Wetlands - The head of the basin could be filled to create tidal marshes and creeks. This could include approximately 13 acres of low marsh with 2 acres (2,339 feet) of creeks and pools and 2.4 acres of high marsh.
Coastal and Maritime Forests – Creation of 4.5 acres of maritime forest and 11 acres of coastal shrub.
Shorelines and Shallows – Shallow water habitat will be restored along approximately 10,817 feet of shoreline.
Tributary Connections - Potential stream daylighting of Fresh Creek.
Enclosed and Confined Waters - Re-contouring up to 4,805 feet of the basin to the mouth of Fresh Creek, ending at approximately 10' below MLW, will decrease residence time of water and improve the dissolved oxygen levels and water quality throughout the basin. This includes the recontouring of an approximately 17" deep hypoxic borrow pit in the southern portion of the creek.
Sediment Contamination- Restoration action will likely improve the conditions for aquatic receptors following restoration. Capping of upland soils with 12 inches of growing medium will further reduce exposure to receptors.
Public Access – Support improvements to pedestrian access and recreation.

Benefits, Cost and Comparative Restoration Ratio: TBD

C. EXISTING SITE SPECIFIC DATA INVENTORY (USACE Pre-Draft FS Report, Undated + Supplemental citations if available listed below)

A. Survey, Maps and GIS:
B. Site History and Land Use:
C. Biological Studies/ Fauna:
D. Biological Studies/ General Environment:
E. Geotechnical:
F. Hydraulics and Hydrology:
G. Water and Sediment:
H. Historical and Cultural Resources:
I. Restoration Remediation and Design Plans:

***Work in progress (See Hydroqual for data)**

REFERENCES:

- U.S. Army Corps of Engineers & NYC Department of Environmental Protection. undated. Jamaica Bay, Marine Park and Plumb Beach, New York - Environmental Restoration Study PRE-Draft Interim Feasibility Report Kings and Queens Counties, New York.
- NYC Parks- http://www.nycgovparks.org/sub_about/parks_divisions/nrg/forever_wild/site.php?FWID=22
- Hydroqual- http://www.hydroqual.com/Projects/usa/projectAreaFrameset.html
- The Trust for Public Land & New York City Audubon Society. 1992. Buffer the Bay Revisited An Updated Report on Jamaica Bay's Open Shorelines and Uplands.
- New York City Department of City Planning. 2010. New York City Comprehensive Waterfront Plan Draft Recommendations


Legend
Shorelines & Shallows
Tidal Creek
Enclosed & Confined Water
Habitat Area
Coastal Wetland - Low Marsh
Coastal Wetland - High Marsh
Coastal & Maritime Forest
Coastal & Maritime Forest - Shrub
US Army Corps of Engineers
New York District
Fresh Creek
Jamaica Bay
0 125 250 500 750 1,000 Feet
N
W
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S

FRESH CREEK RECOMMENDED ALTERNATIVE (from Pre-Draft Interim Feasibility Study Report)