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**New York and New Jersey Harbor Deepening Project  
DRAFT LIMITED REEVALUATION REPORT  
and  
DRAFT ENVIRONMENTAL ASSESSMENT  
for  
Implementation of Mitigation in the State of New York**

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US Army Corps  
of Engineers  
New York District

August 2005



REPLY TO  
ATTENTION OF

Planning Division

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

August 29, 2005

**NOTICE OF AVAILABILITY**

New York and New Jersey Harbor Deepening Project  
Draft Limited Reevaluation Report and  
Draft Environmental Assessment  
for  
Implementation of Mitigation in the State of New York

Dear Interested Party:

This is to inform you of the completion of the Draft Limited Reevaluation Report and Draft Environmental Assessment (LRR/DEA) and Draft Finding of No Significant Impact (FONSI) for the above referenced proposed Federal action, pursuant to the National Environmental Policy Act (NEPA) of 1969 and the President's Council on Environmental Quality (CFR Parts 1500 – 1508). A copy of the LRR/DEA and its attachments are available for review at the Corps' website. To access the report, go to the Harbor Deepening Webpage <http://www.nan.usace.army.mil/harbor/index.htm> and click on the "reports/publication" link. Hard copies of the report are available at the attached list of public libraries

Written comments are due (postmarked) by September 30, 2005 and should be sent to Ms. Weichenberg, Project Botanist at U.S. Army Corps of Engineers, 21<sup>st</sup> Floor, Room 2142, 26 Federal Plaza, New York, NY 10278-0090.

Printed copies may be obtained by contacting Ms. Weichenberg at 917-790-8633. Please note, the review period will still end on September 30, 2005.

Sincerely,

A handwritten signature in black ink that reads "L. Houston".

Leonard Houston  
Chief, Environmental Analysis Branch

Attachment

## Executive Summary

### Description:

This Limited Reevaluation Report was undertaken to identify an alternative site and plan for mitigation of impacts in New York State for the New York and New Jersey Harbor Deepening Project (HDP). The mitigation site recommended in prior reports, Old Place Creek on Staten Island, is no longer viable due to the strong likelihood of development on and adjacent to the site. This development would likely limit the effectiveness of any mitigation on the site.

The Report identifies the issues associated with the current mitigation site at Old Place Creek, analyzes potential sites for mitigation, and uses the screening criteria established for the original selection of mitigation for the HDP – including cost-effectiveness analysis – to identify the magnitude and characteristics of mitigation necessary at the selected site. The report then describes the selected mitigation plan.

The preferred replacement for the Old Place Creek mitigation site is Elder's Point Marsh Island in Jamaica Bay. The new mitigation plan includes the restoration of 29 acres of low marsh and enhancement of 11 acres of existing low marsh at Elder's Point East. This plan uses approximately 205,000 CY of sand in combination with geotextile tubes to contain the material, and provide a buffer for wave energy. This mitigation provides the necessary mitigation at the cost of \$7,391,600, which includes the costs for monitoring and adaptive management of the site. The change in mitigation sites from Old Place Creek to Elder's Point East represents no significant increase in project cost.

### Project Summary:

<u>Habitat Mitigation Acreages</u>	<u>Acres</u>
Elder's Point East Tidal Marsh:	40.0
Elder's Point East Mitigation Marsh Area – Restoration:	29.0
Elder's Point East Existing Marsh Area – Enhancement:	11.0

Total Volume Requirements: 205,000 CY

Elder's Point Mitigation Costs: \$ 7,391,600

Project Cost Change: No Significant Change (within established mitigation cost limits)

The results of this mitigation plan are expected to meet the New York State portion of the mitigation requirements for the HDP and are consistent with Federal, State, and local laws, and resource management plans. This plan has been supported by NYSDEC by letter dated July 25, 2005. The project sponsor, the Port Authority of New York and New Jersey, has also supported this plan by letter dated August 26, 2005. These letters are provided with the Pertinent Correspondence section of this Report.

**New York and New Jersey Harbor Deepening Project  
LIMITED REEVALUATION REPORT  
for  
Implementation of Mitigation in the State of New York**

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## **ATTACHMENTS**

DRAFT Environmental Assessment and Unsigned Finding of No Significant Impact

## **APPENDICES**

Appendix A Pertinent Correspondence

Appendix B Real Estate Plan

**New York and New Jersey Harbor Deepening Project**  
**LIMITED REEVALUATION REPORT**  
**for**  
**Implementation of Mitigation in the State of New York**

**PART 1 - INTRODUCTION**

**1.1 Purpose of the Limited Re-evaluation Report**

The purpose of this Limited Re-evaluation Report (LRR) is to detail changes that have occurred since the signing of the Project Cooperation Agreement<sup>1</sup> (PCA) between the Corps and the Port Authority of New York and New Jersey (PANYNJ, or, “the Port Authority”), the non-Federal sponsor for the New York and New Jersey Harbor Deepening Project (HDP). This report focuses on the mitigation component of the project to be implemented, as required, by the State of New York acting through the New York State Department of Environmental Conservation (NYSDEC, or “DEC”). This LRR and Environmental Assessment (EA) is written in response to concern that forthcoming development occurring at and near Old Place Creek on Staten Island may make the Old Place Creek site unsuitable for this mitigation effort. It recommends changing sites from Old Place Creek to Elders Point in the Jamaica Bay Marsh Islands. This LRR/EA will serve as a decision document for the Corps of Engineers to determine whether this change is appropriate, and what scale of mitigation is required at Elder’s Point.

**1.2 Background**

The study for the HDP was originally authorized by the Water Resources Development Act (WRDA) of 1996. The U.S. Army Corps of Engineers (USACE or the Corps), New York District (the District) was assigned to carry out this project, which became known informally as the Harbor Navigation Study,<sup>2</sup> or simply HNS.

The water resources problem studied in the HNS was how best to provide safe and efficient access to the various marine terminals within the Port of New York and New Jersey for deeper-draft vessels already entering the world’s commercial fleet or whose introduction to the fleet was reasonably foreseeable. On December 30, 1999, the District submitted its findings and recommendations in the form of the New York and New Jersey Harbor Navigation Study Feasibility Report (the Feasibility Report).

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<sup>1</sup> This took place on May 28, 2004 and signaled the beginning of the implementation of the New York and New Jersey Harbor Deepening Project. The Project, informally known as the HDP, entails the deepening of all of the major channels within New York and New Jersey Harbor leading to container terminals to 50 ft., the mitigation of associated impacts of the deepening, and implementation-related tasks such as placement of dredged material.

<sup>2</sup> Formally, it was known as the “New York and New Jersey Harbor Navigation Study, New York and New Jersey.”



### 1.3 Description of Authorized Project

The Feasibility Report recommended navigation channel improvements to the nine major channels in the Harbor that provide access to the five main existing or proposed container terminals – Port Newark/Elizabeth Marine Terminal, Howland Hook Marine Terminal, Global Marine Terminal on the Port Jersey Peninsula, the former Military Ocean Terminal at Bayonne (MOTBY) and the South Brooklyn Marine Terminal. The feasibility Report identified the National Economic Development (NED) Plan, which consists of the following primary elements:

- Construction of a 53 foot deep at MLW navigation channel to deepen the entire length of the existing Ambrose Channel;
- Construction of a 50 foot deep at MLW (52 feet in rock or otherwise hard material) navigation channel to deepen portions of the existing Anchorage Channel, from the Narrows to 1000 feet past its juncture with the Port Jersey Channel;
- Construction of a 50 foot at MLW (52 feet in rock or otherwise hard material) navigation channel to deepen the existing Port Jersey Channel, from its juncture with Anchorage Channel to the Global Terminal and MOTBY facilities;
- Construction of a 50 foot at MLW (52 feet in rock or otherwise hard material) navigation channel to deepen the existing Kill Van Kull, from its juncture with Anchorage Channel to the Arthur Kill;
- Construction of a 50 foot at MLW (52 feet in rock or otherwise hard material) navigation channel to deepen the existing Newark Bay Channel, from its juncture with the Kill Van Kull to the juncture with the Elizabeth Channel, and including deepening the existing Elizabeth, South Elizabeth, and Elizabeth Pierhead Channels to 50 foot at MLW (52 feet in rock or otherwise hard material);
- Construction of a 50 foot at MLW (52 feet in rock or otherwise hard material) navigation channel to deepen the existing Arthur Kill, from its juncture with the Kill Van Kull and Newark Bay to the southernmost berth at the Howland Hook Marine Terminal;
- Construction of a 50 foot at MLW (52 feet in rock or otherwise hard material) navigation channel to deepen the existing Bay Ridge Channel, from its juncture with Anchorage Channel to the South Brooklyn Marine Terminal, subject to commitment to rehabilitate the South Brooklyn Marine Terminal and transportation infrastructure needed to realize project benefits; and
- Mitigation measures for unavoidable impacts to 6.26 acres of littoral zone habitat.

### 1.4 Project Authorization

This study was authorized by §435 of WRDA1996, which reads: “The Secretary shall conduct a comprehensive study of navigation needs at the Port of New York-New Jersey (including the South Brooklyn Marine and Red Hook Container Terminals, Staten Island, and adjacent areas) to address improvements, including deepening of existing channels to depths of 50 feet or greater, that are required to provide economically efficient and environmentally sound navigation to meet current and future requirements.”



The Recommended Plan from the Feasibility Report formed the basis of the Report of the Chief of Engineers,<sup>3</sup> and Congress authorized the “Port of New York and New Jersey, New York and New Jersey” Harbor Navigation Project (the HNP was the original project based on the Recommended Plan) in §101(a)(2) of the WRDA of 2000.<sup>4</sup> The text of the authorization is provided:

- (2) PORT OF NEW YORK AND NEW JERSEY, NEW YORK AND NEW JERSEY-
- (A) IN GENERAL- The project for navigation, Port of New York and New Jersey, New York and New Jersey: Report of the Chief of Engineers dated May 2, 2000, at a total cost of \$1,781,234,000, with an estimated Federal cost of \$743,954,000 and an estimated non-Federal cost of \$1,037,280,000.
- (B) NON-FEDERAL SHARE-
- (i) IN GENERAL- The non-Federal share of the costs of the project may be provided in cash or in the form of in-kind services or materials.
- (ii) CREDIT- The Secretary shall credit toward the non-Federal share of the cost of the project the cost of design and construction work carried out by the non-Federal interest before the date of execution of a cooperation agreement for the project if the Secretary determines that the work is integral to the project.

## 1.5 Project Changes

The Environmental Impact Statement (EIS) in the 1999 New York and New Jersey Harbor Navigation Study<sup>5</sup> (HNS) identified 53 units of littoral zone habitat would be impacted in New York State and recommended that mitigation for these impacts occur at Mariner’s Harbor Marsh. This recommendation was developed in consultation with State and Federal resource agencies through the New York and New Jersey Harbor Navigation Study Environmental Work Group (EWG). The Recommended Plan of the HNS, including the recommendation that project mitigation for impacts to littoral habitat in New York State occur at Mariner’s Harbor, became the basis of the Report of the Chief of Engineers dated 2 May 2000 on the New York and New Jersey Harbor Navigation Study<sup>6</sup> (Chief’s Report), and Congress authorized the “Port of New York and New Jersey, New York and New Jersey” Harbor Navigation Project in §101(a)(2) of the Water Resources Development Act (WRDA) of 2000.<sup>7</sup>

When implementation for the HDP resumed in 2003, Mariner’s Harbor was determined by NYSDEC to be no longer suitable for this effort. Old Place Creek on Staten Island was deemed an appropriate substitute by the Corps and the New York State regulatory agencies and replaced the Mariner’s Harbor element in the mitigation plan presented in the Limited Reevaluation

<sup>3</sup>Report of the Chief of Engineers on the New York and New Jersey Harbor Navigation Study, May 2000

<sup>4</sup> P.L. 106-541, 11 December 2000.

<sup>5</sup> New York and New Jersey Harbor Navigation Study Feasibility Report, December 1999. This study was the basis for the authorization of the 50 ft. channel deepening project.

<sup>6</sup> Report of the Chief of Engineers on the New York and New Jersey Harbor Navigation Study, May 2, 2000.

<sup>7</sup> P.L. 106-541, 11 December 2000.



Report and Environmental Assessment on Consolidated Implementation of the New York and New Jersey Harbor Deepening Project (the 2004 LRR/EA).<sup>8</sup> The 2004 LRR/EA recommended mitigation to occur on approximately 9 acres at Old Place Creek, Staten Island.

In 2005 the Corps became aware of several permit requests which could result in development on and around the Old Place Creek, Staten Island Site. The strong likelihood for encroachment on the site caused the Corps considerable concern over the viability of Old Place Creek as the New York mitigation site. The potential development slated for the Old Place Creek region presents a likely scenario that the mitigation required for the HDP would fail or be inadequately sized if it is to take place in this area. Nonetheless, mitigation for project impacts is required to occur prior to or concurrent with the project for which that mitigation is required.

The District has been involved in the longstanding issue of the degradation of islands in Jamaica Bay. The restoration of the Jamaica Bay Marsh Islands presents an opportunity for the District to undertake mitigation for New York State impacts at a site already approved by NYSDEC and provide a greater environmental improvement at that site than what might be possible if the Jamaica Bay Marsh Islands Project was performed under Continuing Authorities Program alone. The change in mitigation sites from Old Place Creek to Elders Island in Jamaica Bay will allow the mitigation requirements to be met. There is no change in project purpose.

## **PART 2 -EXISTING CONDITIONS**

The 1999 HNS Feasibility Report provided a complete, comprehensive description of the existing resources in the study area that may be affected by the proposed channel improvements. This description is based on an extensive database on the natural resources in New York and New Jersey Harbor developed over the past 20 years. Information contained in the Feasibility Report was obtained from various literature sources and supplemented with project specific sampling programs. This report refers to the socioeconomic, land use, cultural, and natural resource information provided in the 1999 Feasibility Report.

## **PART 3 – PLAN FORMULATION**

### **3.1 Problem Identification**

In order for the HDP to remain in regulatory compliance and construction of the project to remain on schedule, mitigation for impacts to littoral zone habitat must be provided for the HDP project. As described above, the mitigation sites in New York State that were identified previously and recommended in the 1999 Feasibility Report, and 2004 LRR now do not appear viable.

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<sup>8</sup> This Report was prepared in response to Congressional Direction presented in *The Conference Report for the Fiscal Year (FY) 2002 Appropriation Act* (107<sup>th</sup> Cong., 1st Ses., 2002. H.Rpt. 107-258) which combined appropriations of previously authorized deep-draft navigation projects in New York and New Jersey Harbor with the execution of the Recommended Plan. In addition to providing recommendations on consolidating implementation and finding that the Recommended Plan authorized in WRDA 2000 remained environmentally acceptable and economically justified, the 2004 LRR/EA provided greater detail of the mitigation required of the Project.



As littoral zone habitat mitigation is required for the HDP, this LRR/EA presents the site identification process and recommendation for site replacement, as well as the support for the mitigation size requirements. This process is summarized in the Plan Formulation Section of this document, with additional detail provided in the supporting Environmental Assessment. The analyses contained within this Limited Reevaluation Report and its associated EA, are based upon the same site selection criteria, and utilize the same habitat assessment tool, as used in the 1999 HNS FR/EIS and 2004 LRR/EA (previous reports for the selection and analysis of mitigation sites for the HDP)

### **3.2 Mitigation Site Selection**

Old Place Creek was identified in the 2004 LRR/EA as the preferred mitigation site for impacts to littoral zone habitat in New York State for the HDP. This site has been determined to be no longer suitable for this purpose due to development which is expected to take place nearby, conflicting with the proposed restoration. In light of this, the District was required to identify an alternative mitigation site in New York State and re-evaluate mitigation alternatives that could be used for this project. By letter dated March 18, 2005, the NYSDEC requested the District to stop pursuing mitigation at Old Place Creek, and instead to look at the possibility of a Jamaica Bay Marsh Islands Mitigation site. Within Jamaica Bay, Elder's Point was identified as the preferred candidate site for mitigation, in that within the Marsh Islands complex, this site was identified as a priority for restoration, and was in a position where mitigation on the site could occur in conjunction with the proposed restoration, and meet the schedule requirements for the HDP. As such, Elders Point was advanced for consideration.

The 1999 Feasibility Report and 2004 LRR/EA considered an array of candidate sites, and used a series of screening criteria used to evaluate and select the recommended mitigation plan. These mitigation sites included Old Place Creek, Sawmill Creek East, Sawmill Creek West, and Sawmill Creek North. For the purposes of the current site selection, the previously reviewed mitigation site candidates, and the additional site requested by NYSDEC - Elder's Point in Jamaica Bay - were evaluated according to the screening criteria similar to the screening method used in the predecessor documents. The costs of mitigation at each of the sites were evaluated to consider the cost-effectiveness at each site and to finally select the preferred alternative. This process is summarized within this report, with greater detail provided in the Environmental Assessment (EA).

The screening criteria used in the Feasibility Report, and in the 2004 LRR/EA, utilized the following criteria and constraints, which were based upon input from the State resource agencies:

1. Preference for contiguous tracks of land located within watersheds or areas of ongoing habitat restoration initiatives, and thus potentially contributing to the broader State agency goal of coastal marsh ecosystem restoration.
2. Preference for sites with potential to obtain a significant increase in habitat value through restoration or enhancement.



3. Preference for proximity to the project area given similar levels of potential habitat value increase. Mitigation that takes place in the same waterbody as the projected disturbances was assumed to more directly replace lost value than mitigation activities far from the projected disturbance.

In addition the following planning constraints were used to remove a site from further consideration:

1. Sites already selected for another project. If it was determined that a site would undergo similar enhancement activities due to another project, then the site was deemed to be inappropriate for this mitigation plan.
2. Contaminants consideration: If past land uses at the site strongly suggested that contaminants may be present at the site, then the site was deemed to be inappropriate for this mitigation plan.

Since that time, the District has come to recognize that the constraint for contaminants needs a more stringent consideration, in the screening of alternative sites. The disposal of material that is below the hazardous, toxic or radioactive waste (HTRW) criteria, but exceeds residential values has proven to be expensive. In addition, soils characterization as exceeding residential values results in the need to over-excavate and import clean cap material; which also increases project costs. These greatly increased disposal costs as well as liability concerns have resulted in a greater emphasis on the part of both USACE and the PANYNJ on selecting sites with limited need for off-site soils disposal.

Additional criteria were also added in order to capture the NYSDEC’s high prioritization of remediation, research and monitoring for intertidal marsh loss. As a result, the following site selection criteria were added:

1. Preference for sites with demonstrated significant loss in intertidal marsh acreage.
2. Preference for sites in which monitoring of the mitigation site would add to the body of knowledge on causes of and remediation for intertidal marsh loss.
3. Preference for sites with limited or no off-site disposal needs.

To undertake the screening, each of these candidate sites was ranked from best (1) to worst (5) in their ability to meet the selection criteria. Sites that rank identically for a specific criteria would get the same rank for that category. The results of this screening follows, in table 3.1:

**Table 3.1 Mitigation Site Screening**

Site Name/Plan	Contiguous	Habitat	Proximity	Scarcity	Knowledge	Disposal
Sawmill Creek West	5	4	1	2	2	N/A
Sawmill Creek East	2	5	1	2	2	2
Sawmill Creek North Plan A	3	3	1	2	2	3
Sawmill Creek North Plan B	4	2	1	2	2	4
Elders Point (JBMI)	1	1	2	1	1	1



Elder’s Point, part of the Jamaica Bay Marsh Island System, was selected as the preferred mitigation site as a best fit in meeting site selection criteria. Elder’s Point was ranked first in meeting five of the six selection criteria; all criteria other than site proximity. However, the regional perspective applied to site selection, as supported by DEC, confirms the appropriateness of Elders Point East as a desirable mitigation site.

In order to further assess the suitability of Elder’s Point as a mitigation site, relative to the other sites, a cost-effectiveness analysis was undertaken. For each of the sites, conceptual mitigation plans were developed, and from these plans costs for habitat improvements were also established. For this analysis, screening level costs (as developed for the Feasibility Report and LRR/EA) were updated to consider current costs for habitat improvements, including material disposal costs. These cost estimates represent screening level costs that would require further refinement to support a construction cost estimate for the selected site. These conceptual plans also were used to identify the expected increase in habitat units that could be achieved at each site. To evaluate the habitat improvements, the Functional Assessment, used for the Feasibility Report and LRR/EA was applied. The details of this analysis are contained within the EA. A summary of the cost-effectiveness analysis is shown in Table 3.2.

**Table 3.2 Mitigation Alternative Cost-Effectiveness Analysis**

<b>Site Name /Plan</b>	<b>Conceptual Construction Costs</b>	<b>Refined HUs Net Gain</b>	<b>Cost per HU</b>
Jamaica Bay Marsh Islands (Elders Pt East)	\$4,566,368	411	\$11,110
Old Place Creek	\$7,175,406	172.0	\$99,658
Sawmill Creek East	\$3,712,590	166.2	\$22,338
Sawmill Creek North Plan A	\$7,882,245	315.5	\$24,983
Sawmill Creek North Plan B	\$10,897,467	388.5	\$28,050
Note: These costs represent screening level costs, updated from those developed previously in the 2004 LRR. These costs, while suitable for comparison of the alternative sites and plans, would need to be further refined for any of the plans which are developed further for a construction cost estimate.			



The cost-effectiveness clearly shows that the cost per Habitat Unit is significantly lower for Elders Point than for each of the other mitigation site alternatives. The cost per habitat unit was also significantly lower than the cost per Habitat Unit of the previously selected mitigation site, Old Place Creek.

Elders Point, part of the Jamaica Bay Marsh Island System, was selected as the preferred mitigation site as a result of the combination of best fit in meeting site selection criteria and overall cost effectiveness.

### **3.3 Mitigation Site Size Criteria**

This section summarizes the method applied to identify the appropriate scale for the mitigation to be provided at Elders Point in order to meet the mitigation requirements.

The 1999 EIS for the HDP identified a mitigation need in the amount of 53 HU's in order to offset impacts within the littoral zone of New York State. That number has since increased to 71 HU's, based upon refined bathymetric information and more detailed designs generated during the detailed design phase. This increase is described further in the accompanying EA. To identify the mitigation requirements for Elders Point, the same habitat assessment tool has been applied to identify the size of the mitigation required. Identifying the mitigation requirement at Elders Point, however, is complicated, in that this mitigation site may degrade over time, and lose habitat value, since the site will continue to be subject to erosion, and loss of habitat.

Typically, a mitigation site is developed with the intent that the habitat improvements will provide these benefits in perpetuity. The HU's are expected to be provided for the life of the project, which in this case is 50 years. To evaluate the amount of initial mitigation required, one has to identify the expected loss rates at the site, the effective life of the mitigation, and the efforts which would be undertaken to ensure that the mitigation objectives are met. For purposes of comparing equivalent amounts of mitigation which may vary over time, it is necessary to consider the mitigation requirements in Habitat Unit -years (HU-y) rather than the instantaneous HU associated with initial construction of the mitigation site. For the HDP the requirement for HU-y's can be considered as 71 HU's over 50 years, which translates to 3550 HU-y's.

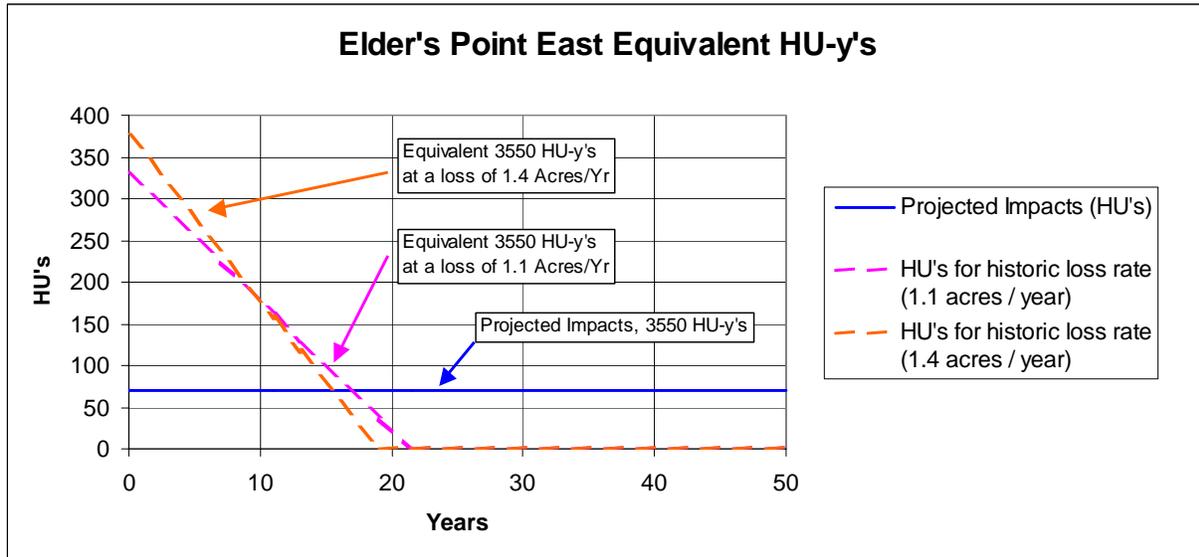
The National Park Service has used aerial photography interpretation to develop marsh loss rates for different time periods at Elder's Point. The trends analysis is included within the accompanying EA, and shows that in the recent history erosion rates ranged from 1.1 acres per year (1989 – 2003), to 1.4 acres per year (1974-1989).

For these two rates of loss, it is possible to identify the initial mitigation requirements, acreage, and effective life for the mitigation, by integrating the habitat value with respect to time – simply taking the area underneath the curve, as shown in Figure 3.1, below. Planning for erosional losses of 1.1 acres per year would require 23.5 acres of initial construction that would degrade over a period of approximately 21 years. Planning for erosional loss of 1.4 acres per year would require 26.5 acres of low marsh that degrades over a period of approximately 19 years.



These two loss rates represent a reasonable range of expected loss for developing mitigation requirements. This range has been taken into consideration in order to determine the amount of initial mitigation, the level of monitoring, and the extent of adaptive management that would need to be included in the project to ensure that the required habitat value replacement is being provided over the life of the project.

**Figure 3.1 Elder’s Point Mitigation Requirements, accounting for Erosion Losses**



One objective of this project is to minimize the amount of adaptive management that might need to be undertaken, as follow-on construction activities to return to the site are expensive as compared to initial construction costs, and continued construction activities can be disruptive to the remaining marsh areas on the site.

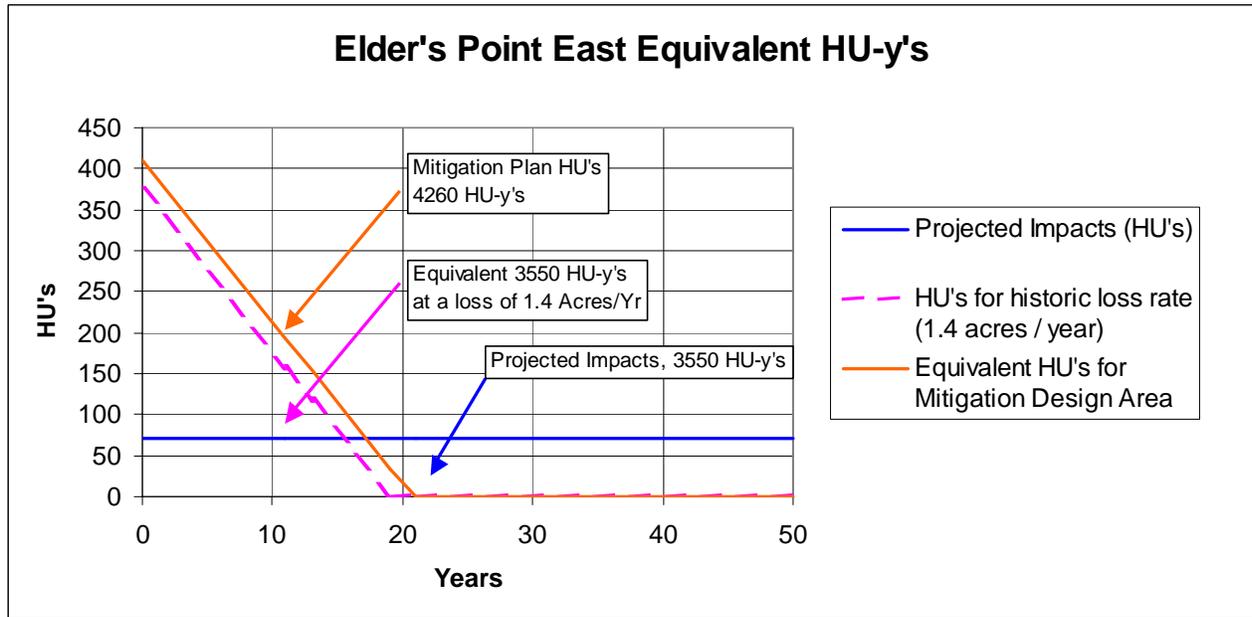
For this reason, the mitigation plan for the Elder’s Point site has been developed to account for the higher range of erosional losses, and has includes both a small additional buffer area and enhancement of the adjacent degraded low marsh areas. Planning for the higher range of expected loss, not only provides a reasonable threshold below which, no remedial action is required, but also provides an additional buffer to account for potential increases in the estimate of impacts.

It is recommended therefore that the mitigation project provide an initial 29 acres of marsh restoration (411 HU’s) as well as enhancement of the contiguous 11 acres of degraded low marsh areas. This would encompass the eastern portion of the Elder’s Point site, hereinafter “Elder’s Point East.” Given the risk and uncertainty associated with the sustainability of the site, it is further recommended that the site be monitored for a period of 10 years to ensure the total of 3550 HU-y’s are achieved over the life of the project. Should patterns of loss differ widely from those expected such that the additional buffer acreage and low marsh enhancement do not suffice to ensure the 3550 HU-y total, adaptive management would be undertaken.



The expected HU's for the mitigation plan, relative to loss rates are shown in Figure 3.2

**Figure 3.2 Elder's Point Mitigation outputs**



**3.4 Proposed Changed Mitigation Site**

The mitigation plan for Elders Point East has been designed to provide the most cost-effective mitigation at the site, which will also allow the proposed restoration to be undertaken independent of the mitigation. The proposed mitigation will result in the restoration of 29 acres of low marsh habitat, and the enhancement of 11 acres existing low marsh, utilizing approximately 205,000 CY of material. This plan also includes the use of geotextile tubes to stabilize the perimeter, provide a buffer to wave energy, and also to capture material which could be remobilized off of the marsh surface.

Based upon the site screening analysis, cost-effectiveness analysis, and habitat restoration requirements, the proposed mitigation plan for Elders Point East meets the requirements for the mitigation of the HDP. Monitoring should ensure that the project meets the objectives of providing 3550 HU-y's, and adaptive management measures should be undertaken if the long-term marsh loss is compromising the mitigation requirements.

The mitigation plan is shown in Figure 3.3.

In addition, mitigation at Elders Point East also complements the restoration efforts planned at Elders Point West and will result in restoration of the entire Elders Point island complex. The mitigation plan and restoration plan is shown in its entirety in Figure 3.4.



Figure 3.3 Elder's Point East Mitigation Plan

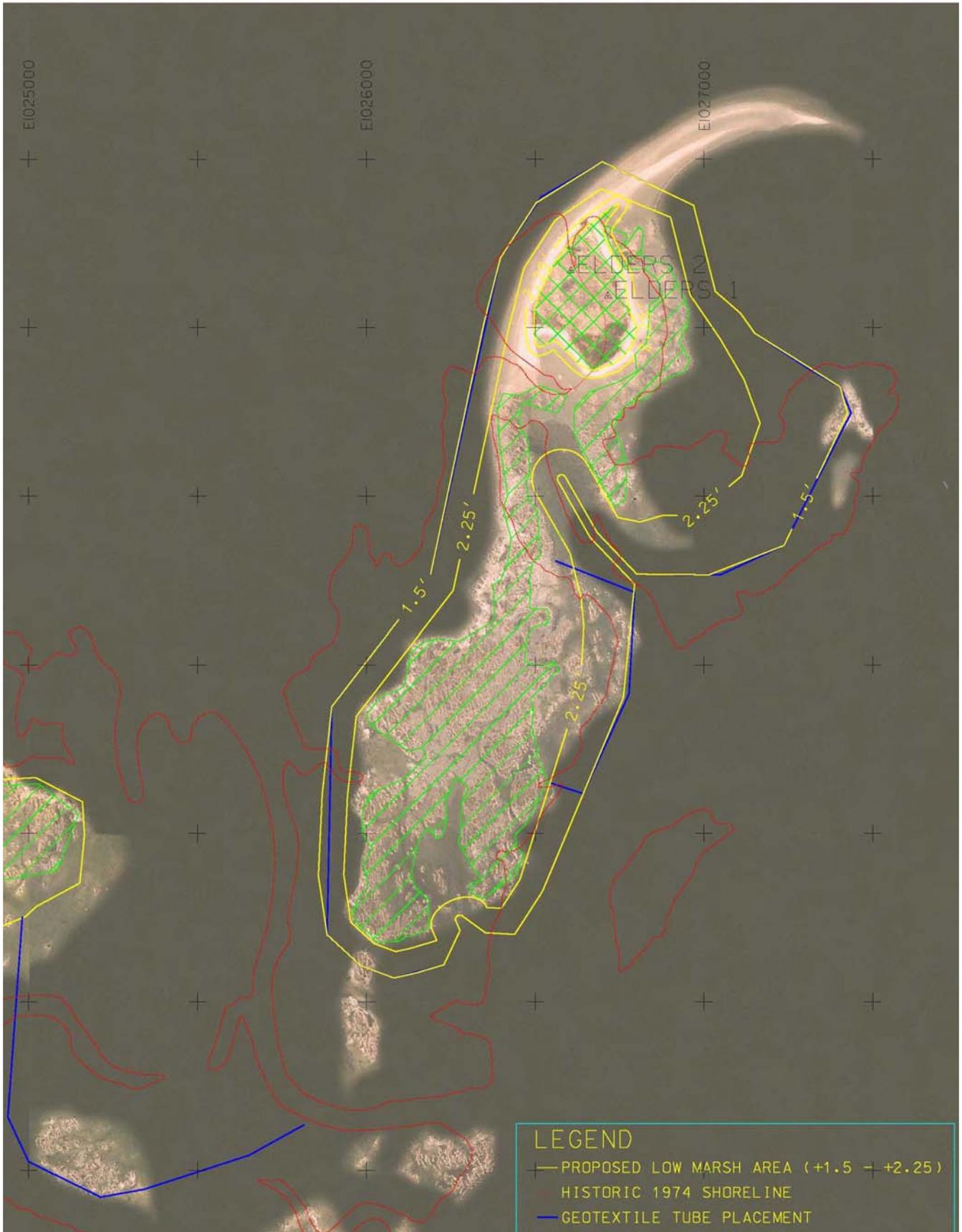
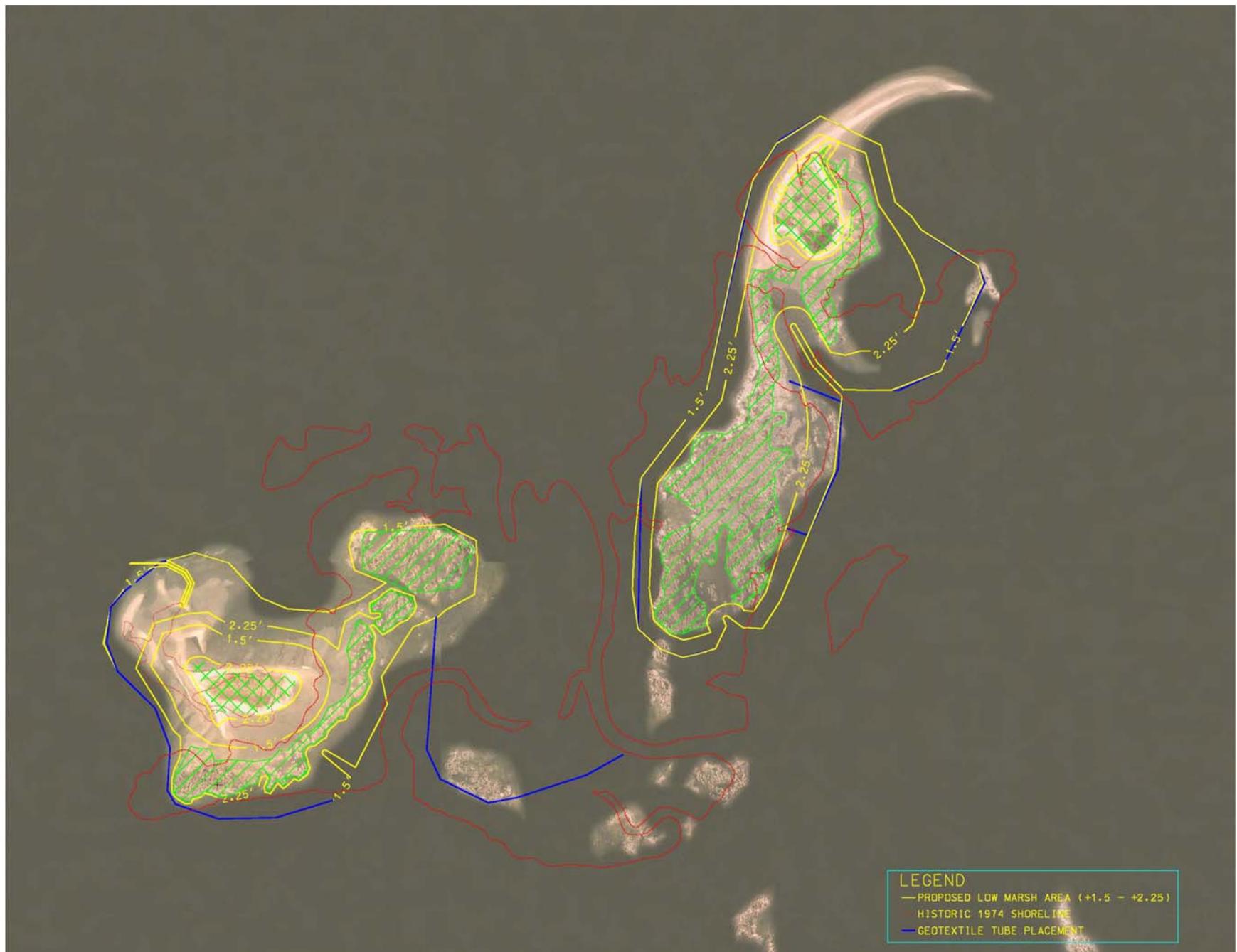


Figure 3.4 Elder's Point – Mitigation and Restoration Composite



### **3.5 Project Mitigation Cost Estimates**

In developing cost estimates for the proposed mitigation plan, costs were generated using the MCACES cost-estimating program, using unit prices based upon comparable work undertaken within the region. The MCACES is based upon the site design. Alternative cost estimates are broken down to show the costs associated with the transport and placement of fill, geotextile tubes, the vegetation planting, waterfowl exclusions, engineering and design, and all the miscellaneous costs associated with the project. Table 3.3 shows the construction costs for the mitigation plan. The cost of the mitigation plan for Elder's Point is comparable to the cost for Old Place Creek. There is no significant increase in project cost.



Table 3.3 Elder's Point Mitigation Cost Estimate

<b>Elder's Point Marsh Restoration- Total First Cost Estimate - Selected Plan - East</b>									
<b>Sep-04</b>									
<b>Account Code No.</b>	<b>Description</b>	<b>Quantity</b>	<b>Unit</b>	<b>Unit Price</b>	<b>References</b>	<b>Estimated Amount</b>	<b>Contingency Amount</b>	<b>Contingency Percent</b>	<b>Total</b>
01	Lands and Damages	1	LS	\$8,000		\$8,000	\$800	10%	\$8,800
06	Fish and Wildlife Facilities								
06.00.1	Mob and Demob	1	LS	\$200,000	8	\$200,000	\$30,000	15%	\$230,000
06.00.16	Pipeline Dredging								
06.00.16.01	Sandfill Placement	205,000	CY	\$9.29	10	\$1,904,450	\$285,668	15%	\$2,190,118
06.00.16.02	Sandfill Placement-Strategic	20,000	CY	\$10.00	1	\$200,000	\$30,000	15%	\$230,000
06.00.16.03	Surveying	6	Days	\$822.27	2	\$4,934	\$740	15%	\$5,674
06.00.16.04	Rough Grading	29	Acre	\$3,000.00	2	\$87,000	\$13,050	15%	\$100,050
06.00.16.05	Final Grading	29	Acre	\$8,920.02	3	\$258,681	\$38,802	15%	\$297,483
06.00.99	Associated General Items								
06.00.99.01	Vegetation Planting-Low Marsh (Restoration)	29	Acre	\$26,781.00	3	\$776,649	\$155,330	20%	\$931,979
06.00.99.02	Vegetation Planting-Low Marsh (Strategic)	5	Acre	\$26,781.00	3	\$133,905	\$26,781	20%	\$160,686
06.00.99.03	Vegetation Planting-Low Marsh (Passive)	0	Acre	\$26,781.00	3	\$0	\$0	20%	\$0
06.00.99.04	Waterfowl Protection	40	Acre	\$4,743.20	3	\$189,728	\$28,459	15%	\$218,187
06.00.99.05	Geotextile Containment	5,300	LF	\$125.00	4	\$662,500	\$99,375	15%	\$761,875
06.00.99.06	Geotextile Sediment Trap	1,600	LF	\$125.00	4	\$200,000	\$30,000	15%	\$230,000
06.00.99.07	Silt Fence	8,000	LF	\$3.35	5	\$26,800	\$4,020	15%	\$30,820
06.00.99.08	Monitoring	1	LS	\$300,000.00	9	\$300,000	\$45,000	15%	\$345,000
06.00.99.09	Adaptive Management	1	LS	\$300,000.00	9	\$300,000	\$45,000	15%	\$345,000
06.00.99.09	Floy Bennett Field Borrow Site Restoration	1	LS	\$180,000.00		\$180,000	\$27,000	15%	\$207,000
30	Planning,Engineering & Design	1	LS		6	\$600,000	\$90,000	15%	\$690,000
31	Construction Management	1	LS		7	\$355,572	\$53,336	15%	\$408,907
	<b>Total Project First Cost</b>								<b>\$7,391,578</b>

## **Part 4 - With Project Conditions Environment**

The environmental effects of the Harbor Deepening Project have not materially changed from those identified in the *Feasibility Report* and *Consolidation LRR/EA*. There have been minor changes in the specific quantification of impact acreage, as they relate to the proposed mitigation in New York State, which have been accounted for in the mitigation design. The changes in the expected short or long-term impacts associated with the Proposed Action are discussed further in the EA. No environmental impacts to navigation, air quality, water resources, aquatic biologic resources, noise, protected species and wildlife, essential fish habitat, cultural resources or cumulative impacts are attributable to the change in mitigation site.



## PART 5 – SELECTED PLAN

### 5.1 Plan Description

The selected mitigation plan includes habitat improvements on Elder’s Point East, restoration of areas that have been degraded indirectly by past activities which have resulted in the alteration of the area from vegetated intertidal marsh to unvegetated mudflats. A summary of the mitigation plan follows.

#### Habitat Mitigation Acreages

	Acres
Elder’s Point East Tidal Marsh	40.0
Elder’s Point East Mitigation Marsh Area – Restoration	29.0
Elder’s Point East Existing Marsh Area – Enhancement	11.0
 Total Volume Requirements	 205,000 CY
 HU-y’s Provided	 4260
 Elder’s Point Mitigation Costs	 \$ 7,391,600

Project Cost Change No Significant Change (within established limits of mitigation costs)

The results of this mitigation plan are expected to meet the New York State portion of the mitigation requirements for the HDP and are consistent with Federal, State, and local laws, and resource management plans.

This plan represents the most cost-effective means to accomplish the required mitigation, based upon an evaluation of alternative mitigation sites and cost-effectiveness analysis with mitigation plans for these sites.

As described in Section 3, the mitigation plan accounts for the uncertainty in the mitigation site by distributing required mitigation outputs for the expected project life. Monitoring and Adaptive Management have been included within this project for a period of 10 years, to ensure that the mitigation requirements are met.



## 5.2 Mitigation Plan Comparison

The proposed mitigation site at Elder's Point provides an equivalent level of mitigation as compared with the Old Place Creek site. As discussed above, there is also no significant change in project cost associated with this site change.

## 5.3 Monitoring and Adaptive Management

All monitoring and management conducted for the mitigation project will be performed in accordance with Federal and State regulations and standards. The goal of the monitoring and management program will be to accurately determine the success of the mitigation efforts relative to anticipated performance standards, quickly identify any problems requiring remedial action, and implement those remedial actions on a timely basis.

The success of the mitigation efforts will be measured by performance standards developed in the *New York State Salt Marsh Restoration and Monitoring Guidelines* (NYSDEC, 2000) and as defined in a monitoring work plan.

At a minimum, the monitoring will include an assessment of the vegetation development, soil profiles, colonization by benthic invertebrates, and habitat usage by macrofauna. Monitoring at the project site shall be conducted in the restored salt marsh areas and at a minimum of two reference areas. The monitoring protocol shall include control transects, quadrats (at least three per control transect), and permanent fixed-point photo stations (at both ends of each of the transects).

The monitoring program includes the following monitoring activities. For purposes of establishing mitigation success, the emphasis for this project is ensuring that the project is constructed within the design specifications, to ensure project performance.

Pre-Restoration Monitoring Activities The construction and reference areas shall be monitored at least once prior to construction, preferably during August/September prior to commencement of construction.

Post-Construction Assessment (Immediately following Construction). Immediately following construction and prior to planting, the project site shall be walked by the involved agencies to assess compliance with submitted work plans. Design elevations shall be verified prior to planting, and any changes made to ensure compliance with design plans.

Post-Construction Establishment Period. After planting, plant survival will be monitored. To the extent established, the contractor will be responsible for replacement and re-seeding costs during that period. The contractor will also be responsible for control of invasive species during this post-construction establishment period.



Post-Construction Monitoring (Long-Term). Long-term, post-construction monitoring and management will be performed over a period of ten years. An initial monitoring event will immediately follow completion of site restoration. Long-term monitoring activities will be conducted yearly following completion of site restoration.

*Adaptive management* in the context of this project is an approach to resource management in which management goals remain the same, but management objectives and techniques may be modified in response to feedback (such as in-field conditions or monitoring results) from the system being managed. Adaptive management recognizes that human knowledge regarding biological and physical systems is limited and that these systems may not always behave as expected. When a mitigation project is to be implemented but there is some uncertainty regarding the response of the system to particular actions, adaptive management provides a way for management actions to respond to feedback from the system being managed.

Adaptive management will be implemented if specific mitigation standards are not met or if it appears that actual conditions will diverge sufficiently far from intended conditions to threaten the achievement of overall mitigation goals. Funding for adaptive management has been included in the project cost estimates so that this option will be available in the future if needed. The focus of specific parameters for adaptive management will be Vegetation Density, Predation, Elevation and Landscape and Perimeter Changes.

The monitoring and adaptive management component of this project is included as a cost-shared item. For this project, it is recognized that there is a degree of uncertainty in the mitigation response, and this is recognized within the establishment of the size of the mitigation, and the necessary habitat units. As such, the monitoring and adaptive management plans have been developed to recognize that site degradation is expected, and likely; and that adaptive management is not necessary to meet the regulatory requirements for the mitigation project, unless the magnitude of the departure is outside an acceptable range of response. The adaptive management has been included in the initial project cost, as a contingency amount of \$300,000, to ensure funding is available to account for this, should it be necessary. The monitoring and adaptive management plans have been developed in cooperation with the sponsor and involved Federal agencies, to take advantage of other funding opportunities within connected programs.

#### **5.4 Real Estate**

The United States of America (Department of the Interior, National Park Service) owns all the lands within the project boundary lines necessary for the construction of the project, and DoI/NPS fully supports this Project. The only Real Estate requirement is a Special Use Permit from the National Park Service. The anticipated administrative costs of \$8,000 include the costs necessary to obtain both a short-duration, and extended duration Special Use Permit for the project. Since the required real state interest/permission would be obtained from another Federal agency, this is shown as a cost-shared project item, rather than as a non-Federal, reimbursable LERRD. The Port Authority of New York and New Jersey, in a letter dated 25 April 2005,



acknowledges that the Corps will obtain the necessary Real Estate interests/permissions for this mitigation site.

**5.5 Cost Apportionment**

As discussed above, there is no significant cost-increase associated with the change in mitigation site. The cost apportionment for this mitigation will be in accordance with the cost-sharing for the overall project. Cost apportionment for this mitigation site is 3,474,100 Federal and 3,917,500 non-Federal.

**5.6 Project Implementation**

The schedule for implementation of the mitigation project has been established to be consistent with the mitigation schedule requirements established in the NYSDEC Water quality Certificate, which requires mitigation construction by Summer 2006.

**TABLE 7-1.  
ANTICIPATED CONSTRUCTION SCHEDULE**

	<b>Item</b>	<b>Completion date</b>
1	Stockpile Construction, from Operations Division	Sep 2004 – Mar 2005
2	Draft LRR, EA and FONSI circulated for Public Review	August 2005
3	Final LRR, EA, and FONSI	Sep 2005
4	Preparation and approval of Plans & Specifications	Sep 2005
5	Obtain Real-estate Easements	Sep 2005
6	Pre-Advertisement	Sep 2005
7	Advertise Construction Contract	15-Oct-2005
8	Bid Opening	15-Nov-2005
9	Construction Award	Dec-2005
10	Construct Mitigation Project – transport material to the site	Jan 2006 – Apr 2006
11	Construct Mitigation Project – vegetation planting	Apr 2006 – Jun 2006
12	Project Monitoring	Jul 2005 – Sep 2015

**5.6 Local Cooperation**

This project will be constructed under the Project Cooperation Agreement for the HDP, consistent with the terms and conditions of that agreement.

**PART 6 – PUBLIC AND AGENCY INVOLVEMENT**

Public and agency involvement and coordination in USACE projects are an integral part of the planning process and are required in accordance with NEPA, USACE regulations. This LRR and EA will be made available to all interested agencies and the general public for review and comment upon its completion.

Coordination of the mitigation plan was undertaken in conjunction with NYSDEC, National Park Service, and the Port Authority of New York and New Jersey. This LRR / EA will be circulated for public comment.



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## **PART 7 – RECOMMENDATIONS**

### **7.1 Prefatory Statement**

In making the following recommendations, I have given consideration to all significant aspects of this study as well as the overall public interest in Navigation Improvements for the New York Harbor Deepening. The aspects considered include engineering feasibility, economic effects, environmental impacts, social concerns and compatibility of the project with the policies, desires, and capabilities of the local government, State, Federal, and other interested parties.

### **7.2 Recommendations**

This LRR and EA was prepared in accordance with Corps Policy and the requirements of NEPA. In addition to sites previously identified as potential mitigation sites for the HDP, this evaluation included analysis of the providing littoral habitat replacement at Elder's Point Marsh Island in Jamaica Bay, as requested by the New York State Department of Environmental Conservation, which is the State agency responsible for the enforcement of habitat mitigation.

I recommend changing the approved mitigation site for the HDP from Old Place Creek to Elders Point East, both within the New York Bight. The proposed change is the result of an analysis of a range of alternatives for mitigation at a number of alternative sites, and quantification of the mitigation need at this site. Habitat Improvements to restore and enhance intertidal marsh at Elders Point East is the most cost-effective, environmentally sound means to accomplish the required mitigation.

The environmental effects of the proposed change on the physical, ecological, cultural, aesthetic, socioeconomic, and recreational conditions of the existing site were evaluated and a determination has been made that no long-term, adverse impacts are anticipated as a result of implementing the recommended change and the implementation will have a significant, cumulative and long term positive impact on the quality of the environment at Jamaica Bay Marsh Islands and the surrounding environs.

It is recommend that the changed mitigation site, and plan selected herein be constructed as authorized. I make this recommendation based on findings that the selected plan constitutes a justified increment of construction within the limits of Federal participation. These recommendations are made with such further modifications thereof, as in the discretion of the Chief of Engineers may be advisable, provided that non-Federal interests comply with all the requirements substantially in accordance with the Project Cooperation Agreement.



### 7.3 Conclusion

The Recommended Change includes the replacement of the Old Place Creek, Staten Island, Mitigation Site with the Mitigation Plan to include 29 acres of intertidal marsh improvement and 11 acres of intertidal marsh enhancement at Elder’s Point East, with monitoring and adaptive management to ensure project performance. This plan has been demonstrated to be the most cost-effective mitigation alternative in comparison to other available sites. This change will effect no significant increase to the cost of the HDP.

### 7.4 Disclaimer

The recommendations contained herein reflect the information available at this time and current Department policies governing formulation of individual projects. They do not reflect program and budgeting priorities inherent in the formulation of national Civil Works construction program nor the perspective of higher review levels within the Executive Branch. Consequently, the recommendations may be modified before they are transmitted to higher authority as proposals for authorization and/or implementation funding.

Date: \_\_\_\_\_

\_\_\_\_\_  
Richard J. Polo, Jr.  
Colonel, Corps of Engineers  
District Engineer



**New York and New Jersey Harbor Deepening Project**

**DRAFT ENVIRONMENTAL ASSESSMENT  
And  
Unsigned Finding of No Significant Impact (FONSI)  
for  
Implementation of Mitigation in the State of New York**

## EXECUTIVE SUMMARY

ES.1 The U.S. Army Corps of Engineers (USACE), New York District (the District) prepared a Limited Reevaluation Report<sup>1</sup> (LRR) to address the replacement of the New York State mitigation site for the New York and New Jersey Harbor Navigation Project (Recommended Plan). This replacement was initiated after USACE was informed by the New York State Department of Environmental Conservation (NYSDEC), that the previously identified mitigation site, Old Place Creek, was no longer a viable site.

ES.2 Alternatives considered included the Without Project (i.e., no action, Recommended Plan without replacement mitigation site) and With Project (i.e. proposed action, Recommended Plan with replacement mitigation site.) The Recommended Plan in the *New York and New Jersey Harbor Deepening Project, Limited Reevaluation Report and Environmental Assessment on Consolidated Implementation of the New York New Jersey Harbor Deepening Project – January 2004 (LRR/EA)*<sup>2</sup> with the deletion of Old Place Creek as mitigation site is considered the without project condition.

ES.3 The Proposed Action consists of mitigating for unavoidable impacts associated with the Recommended Plan at Elders Point East within the Jamaica Bay Marsh Islands. The LRR recommends the following action:

- Replacement of the Old Place Creek, Staten Island, New York mitigation site with Elders Marsh island within the Jamaica Bay Marsh Island (JBMI) system.
- Restoration of highly degraded and lost low marsh to mitigate for unavoidable impacts within the study area.

ES.4 As the *LRR/EA* study area is the same as that for the proposed replacement mitigation site, and also the same as that of the *New York and New Jersey Harbor Navigation Feasibility Report – December 1999 (the Feasibility Report)*<sup>3</sup> this impact assessment of mitigation site replacement relies on and refers to the socioeconomic, land use, cultural and natural resource information provided in these two documents.

ES.5 There are no potential effects attributable to the replacement of the mitigation site. No significant environmental impacts attributable to replacement of the mitigation site were identified. Short term and long-term impacts attributable to the Harbor Deepening Project were evaluated in the *Feasibility Report*. These impacts, along with best management practices (BMPs) also described in the *Feasibility Report* are unchanged

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<sup>1</sup> U.S. Army Corps of Engineers, *Limited Reevaluation Report on the Mitigation Site Replacement for the New York and New Jersey Harbor Deepening Project*, (2005).

<sup>2</sup> U.S. Army Corps of Engineers, *New York and New Jersey Harbor Deepening Project, Limited Reevaluation Report and Environmental Assessment on Consolidated Implementation of the New York New Jersey Harbor Deepening Project*, (2004).

<sup>3</sup> U.S. Army Corps of Engineers, *New York and New Jersey Harbor Navigation Study Feasibility Report*, (1999).

Hereinafter the shorthand reference “Feasibility Report” will be used to refer to this document and the “Recommended Plan” to refer to the plan recommended in the *Feasibility Report* with the modifications noted in the *LRR/EA*.

with the replacement of the mitigation site.

ES.6 No additional mitigation is required due to the replacement of the mitigation site. Mitigation requirements for long-term, unavoidable impacts to aquatic resources identified in the *Feasibility Report* would also apply with the replacement mitigation site as the channel depths and configuration would be unchanged from the Recommended Plan.

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## **1 Purpose and Need for the Action**

The US Army Corps of Engineers (USACE), New York District (the District) prepared a Limited Reevaluation Report, Environmental Assessment (LRR/EA, 2004) to address the change in mitigation site needed for the unavoidable impacts to littoral and intertidal zone habitat within the waters of New York State. These impacts were initially identified and discussed in the Feasibility Report and Environmental Impact Statement for the New York and New Jersey Harbor Navigation Study (NYNJHNS EIS, 1999). The action that is the subject of this current draft Environmental Assessment (EA) is the recent post-authorization change from a previously identified mitigation site at Old Place Creek, Richmond County, New York to Elders Point Marsh Island, New York. The Old Place Creek mitigation site was removed from consideration as a viable mitigation site by the New York State Department of Environmental Conservation (DEC) due to impending permit actions in the immediate area of the proposed site and subsequent high probability of impacts to the restored site. This EA provides analysis of the criteria and justification specified for the site switch as related to potential environmental mitigation measures specific to the impacts previously identified in the New York and New Jersey Harbor Deepening Project decision documents.

## **2. Plan History**

2.1 In 1999, the District completed the New York and New Jersey Harbor Navigation Study Feasibility Report (Feasibility Report) which recommended navigation channel improvements to the nine major channels in the Harbor that provide access to the five main existing or proposed container terminals – Port Newark/Elizabeth Marine Terminal, Howland Hook Marine Terminal, Global Marine Terminal on the Port Jersey Peninsula, the former Military Ocean Terminal at Bayonne (MOTBY) and the South Brooklyn Marine Terminal. The feasibility Report identified the National Economic Development (NED) Plan, which consists of the following primary elements:

- Construction of a 53 foot deep at MLW navigation channel to deepen the entire length of the existing Ambrose Channel;
- Construction of a 50 foot deep at MLW (52 feet in rock or otherwise hard material) navigation channel to deepen portions of the existing Anchorage Channel, from the Narrows to 1000 feet past its juncture with the Port Jersey Channel;
- Construction of a 50 foot at MLW (52 feet in rock or otherwise hard material) navigation channel to deepen the existing Port Jersey Channel, from its juncture with Anchorage Channel to the Global Terminal and MOTBY facilities;
- Construction of a 50 foot at MLW (52 feet in rock or otherwise hard material) navigation channel to deepen the existing Kill Van Kull, from its juncture with Anchorage Channel to the Arthur Kill;

- Construction of a 50 foot at MLW (52 feet in rock or otherwise hard material) navigation channel to deepen the existing Newark Bay Channel, from its juncture with the Kill Van Kull to the juncture with the Elizabeth Channel, and including deepening the existing Elizabeth, South Elizabeth, and Elizabeth Pierhead Channels to 50 foot at MLW (52 feet in rock or otherwise hard material);
- Construction of a 50 foot at MLW (52 feet in rock or otherwise hard material) navigation channel to deepen the existing Arthur Kill, from its juncture with the Kill Van Kull and Newark Bay to the southernmost berth at the Howland Hook Marine Terminal;
- Construction of a 50 foot at MLW (52 feet in rock or otherwise hard material) navigation channel to deepen the existing Bay Ridge Channel, from its juncture with Anchorage Channel to the South Brooklyn Marine Terminal, subject to commitment to rehabilitate the South Brooklyn Marine Terminal and transportation infrastructure needed to realize project benefits; and
- Mitigation measures for unavoidable impacts to 6.26 acres of littoral zone habitat.

2.2 During the Pre-Construction Engineering and Design (PED) stage several structural and design modifications were proposed for the navigation channel improvements. These modifications included:

- An increase of approximately 7.6 acres to the footprint of the outer channel of the Port Jersey Channel for safer transiting from Anchorage to Port Jersey Channel for vessels using the 50 feet channel. (This additional dredging would occur in previously dredged channel.)
- The turning basin (approximately 28.8 acres) and approximately 16.3 acres of the southern section of the outer channel, which in the *Feasibility Report* are specified to be dredged to 41 feet at MLW will be permanently deferred.
- Approximately 4.4 acres of the southeastern end of the South Elizabeth Channel to be deepened to allow for safer transiting from Newark Bay Channel into South Elizabeth Channel for ships that will use the 50 feet depth. These 4.4 acres are all sublittoral habitat, as defined in this EA as aquatic habitat deeper than 6 feet at MLW.
- Realignment of the Arthur Kill Channel to reduce the Recommended Plan's footprint on the western side of the channel by approximately 28.4 acres. This habitat is currently classified as deepwater sub-littoral and will remain so.

2.3 As a result of more precise bathymetric surveys a portion of the project area's 1999 habitat characterization in the vicinity of Bridge Creek in the Arthur Kill, on the southwestern section of the Elizabeth Channel and in the Kill-Van-Kull SKVK-2 contract

reach have been reclassified in terms of the habitat. Specifically, a portion of the project area designated as littoral zone in the Arthur Kill has now been designated as intertidal habitat, a portion of the project area designated as sub-littoral in both South Elizabeth and Kill Van Kull have been identified as littoral. The result is a net increase of impacts within New York State of 0.83 acres resulting in revised total mitigatable impacts in New York State of 2.39 acres.

2.4 In January 2001, the Port Authority of New York and New Jersey (PANYNJ) and the District executed a Design Agreement. Since that time, the Old Place Creek mitigation site was removed from consideration by the New York Department of Environmental Conservation (DEC) due to impending permit actions in the immediate area of the mitigation site and subsequent high probability of impacts to the mitigation site.

2.5 This EA provides the necessary NEPA documentation and assessment of potential environmental effects specific to the change in mitigation site.

### **3 ALTERNATIVES**

Identification of a replacement mitigation site is mandatory for the implementation of the New York and New Jersey Harbor Project to continue. A “Without Project” Condition of Project implementation without an alternative mitigation site is unacceptable. There is no “Without Project Condition” Alternative. There is a detailed analysis of the process by which the replacement mitigation site was selected.

### **4 PROPOSED ACTION**

4.1 The proposed action is the removal of Old Place Creek, Staten Island, NY as the recommended mitigation site and replacement with a site at the Jamaica Bay Marsh Islands.

4.2 In accordance with the Council on Environmental Quality (CEQ) Regulations for Implementing NEPA (40 C.F.R. §1500-1508), and with paragraph 7-35 of USACE Engineering Regulation (ER) 1105-2-100 (USACE 1990, 1997), the planning of USACE-sponsored and other Federal projects must ensure that project-caused adverse environmental impacts (i.e., impacts to fish and wildlife resources) have been avoided or minimized to the extent practicable, and that remaining unavoidable significant adverse environmental impacts are compensated for to the extent justified. USACE regulations stipulate that the Recommended Plan must contain sufficient mitigation measures to ensure that the plan selected will have no more than negligible net adverse impacts on fish and wildlife resources, including impacts of the mitigation measures themselves. The USACE regulations also state that, “full credit shall be given to the beneficial aspects of an alternative plan, or project, before consideration is given to adding separable mitigation features.” Regarding wetlands, however, the guidance contains very specific requirements that the District “ensure that adverse impacts to wetland resources are fully mitigated...as required to clearly demonstrate efforts made to meet the Administration’s goal of no net loss of wetlands.”

4.3 As described in the *New York and New Jersey Harbor Navigation Study Feasibility Report (Feasibility Report)*, the primary unavoidable environmental impact (requiring mitigation) associated with the Recommended Plan is disturbance and loss of littoral zone habitat (defined as submerged lands between tidal elevations 0.0 and -6.0 ft mean low water [MLW]). The Recommended Plan was updated in 2004 as part of the consolidation of the navigation projects after which time additional impacts were identified as a result of continued refinement of engineer plans and new bathymetric surveys. The current estimated calculations of impacted habitat are 1.79 acres littoral and 0.6 acres intertidal, for a total of 2.39 acres within NY State jurisdictional wetlands. The objective of the mitigation plan is to compensate for unavoidable impacts to ecological resources that will remain after avoidance, minimization and reduction/elimination techniques are implemented to the extent possible. Mitigation for losses of littoral zone habitat are specifically required because the littoral zone is defined as wetland habitat in New York (Title 6 §661.2 (b) and (e) of the Official Codes of Rules and Regulations of New York State) and is protected in New Jersey under Coastal Area Facility Review Act (N.J.S.A 13:19-1 to 21) (CAFRA) regulations.

4.4 USACE regulations (ER) 1105-2-100 contains guidelines that mitigation plans must ensure that adverse impacts to wetland resources are fully mitigated, and an effort made to meet the Administration's goal of no net loss of wetlands. The primary objective for this mitigation plan, is therefore to provide replacement for the loss of disturbed habitat as a result of the Recommended Plan. This objective not only encompasses the goal of replacing habitat units (HUs) calculated to be lost, but includes a goal of providing no less than acre-for-acre compensation. Implicit in this objective is that the replacement of disturbed habitat exhibit a high degree of sustainability to thereby maximize the effort towards meeting the Administration's goal of no net loss of wetlands in the long term.

4.5 The mitigation plan presented in the *Feasibility Report* was based, in part, on mitigation plans for other USACE-NYD navigation channel improvement projects. Specifically, the mitigation plans adopted for the deepening of the Arthur Kill Channel and recommended for some portions of the New York Harbor Collection and Removal of Drift Project were used in the plan formulation process. The recommended mitigation plan was developed in consultation with state and Federal resource agencies through the New York and New Jersey Harbor Navigation Study Environmental Work Group.

4.6 Since the development of the original mitigation plan, the New York State Department of Environmental Conservation (NYSDEC) reconsidered the proposed plan and indicated that the original Mariners Harbor site, recommended in the *Feasibility Report*, was no longer suitable. In light of this development, the District was required to identify an alternative mitigation site in New York State and re-evaluate mitigation alternatives that could be used for this project. That evaluation and plan was presented in the 2004 LRR/EA.

4.7 Since this process and at the behest of NYSDEC and the PANYNJ, the District re-visited the mitigation site selection criteria, conceptual plans for the preferred New York sites described in the 2004 Report, and examined the potential for a new site option. The District concluded that given the scale of the Harbor Navigation Project it is appropriate to view unavoidable impacts from a regional perspective and chose a mitigation site based upon that perspective. NYSDEC concurred with this approach in a letter dated March 18, 2005. Jamaica Bay Marsh Islands was added to the list of alternative mitigation sites based upon the broadened mitigation site selection perspective.

### **Mitigation Site Selection Criteria**

4.8 During 2003, following discussions with NYSDEC and PANYNJ four alternative sites that are located within New York State were considered for reevaluation. One site was located at Old Place Creek and three sites were located near Sawmill Creek; Sawmill Creek East, West and North. The mitigation site screening criteria at that time were based upon the recognition that implementation of the mitigation plan was dependent on local cooperation of state resource agencies. Input was solicited from the State resource agencies and included the following:

1. NYSDEC stated preference for contiguous tracks of land located within watersheds or areas of ongoing habitat restoration initiatives, and thus potentially contributing to the broader State agency goal of coastal marsh ecosystem restoration.
2. Preference for sites with potential to obtain a significant increase habitat value through restoration or enhancement.
3. Preference for proximity to the project area given similar levels of potential habitat value increase. Mitigation that takes place in the same water-body as the projected disturbances was assumed to more directly replace lost value than mitigation activities far from the projected disturbance.

4.9 In addition the following criteria were used to remove a site from serious consideration:

1. Site already been selected for another project. If it was determined that a site would undergo similar enhancement activities due to another project, then the site was deemed to be inappropriate for this mitigation plan.
2. Contaminants considerations: If past land uses at the site strongly suggested that contaminants may be present at the site, then the site was deemed to be inappropriate for this mitigation plan.

4.10 Additional input has been solicited from the State resource agencies since that time. As noted, the regional context of the Harbor Navigation Project was accepted thereby broadening the geographic range of potential alternative mitigation sites to those within the New York Harbor/ Hudson-Raritan Estuary system.

4.11 NYSDEC is in the process of conducting a tidal wetlands trends analysis utilizing infrared aerial photography and geographic information (GIS) technology. It has

observed significant losses of vegetated tidal wetlands, primarily *Spartina alterniflora* in areas throughout the marine district. The need for an overall strategy to address this resource loss has been recognized and as a result priority is being given to develop remediation/restoration /research and monitoring strategies wherever possible. Jamaica Bay specifically was identified as the site where first efforts should occur (DEC, 2005). This prioritization was due to the conclusion that the occurrence of the most dramatic losses in intertidal marshes within the marine district is in Jamaica Bay. The regional importance of the marsh islands to fish, wildlife and plant habitat was also recognized.

4.12 The District's more recent experiences in marsh restoration have also informed the screening of alternative mitigation sites. The disposal of material that does not meet hazardous, toxic or radioactive (HTRW) criteria, but do exceed residential values has proven to be extremely expensive. In addition, soils characterization as exceeding residential values results in the need to over-excavate and import clean cap material; also at substantial cost. These greatly increased disposal costs as well as liability concerns have resulted in a greater emphasis on the part of both USACE and the PANYNJ on selecting sites with limited need for off-site soils disposal.

4.13 In recognition of NYSDEC's high prioritization of remediation, research and monitoring for intertidal marsh loss, as well as the increased understanding of disposal cost and liability issues, the following site selection criteria were added:

1. Preference for sites with demonstrated significant loss in intertidal marsh acreage.
2. Preference for sites in which monitoring of the mitigation site would add to the body of knowledge on causes of and remediation for intertidal marsh loss.
3. Preference for sites with limited or no off-site disposal needs.

### **Mitigation Site Alternative Analysis**

4.14 Alternative mitigation sites were evaluated based upon ability to meet the site selection criteria, potential to meet or exceed the replacement of habitat unavoidably lost through harbor deepening, and cost effectiveness.

4.15 Quantification of the lost habitat value was based upon the Functional Assessment (1999 methodology coordinated with and approved by NYSDEC, NJDEP, NOAA-F, USFWS) conducted on the littoral and inter-tidal wetlands impacted by the harbor deepening. As described in detail in the *Feasibility Report*, and summarized in Appendix A, the potentially disturbed areas were examined around low tide, and a Functional Assessment Questionnaire was completed for each area. Completion of the questionnaires resulted in a raw score being assigned to each area. This raw score, for each potentially disturbed area, was then multiplied by its corresponding area (in acres) to obtain a value in Habitat Units (HUs). The sum of each area's HUs equaled the habitat value lost by the harbor deepening.

4.16 In order to determine whether restoration measures at a given site had the

potential to meet or exceed replacement of lost habitat the following method was utilized. The HU difference between the functional assessment value post implementation of mitigation measures at each alternative site, and the baseline functional assessment values per alternative mitigation site was calculated, similar to previous mitigation planning efforts described in the *Feasibility Report*.

4.17 The baseline functional assessment assisted in the identification of site conditions that could be improved by implementation of mitigation measures. In cases where the system is dynamic the baseline condition was refined to project values for future without project conditions. A second functional assessment for each of the preferred mitigation sites was then conducted following conceptual mitigation design development. This second assessment assumed that the recommended mitigation measures were implemented and successful. The theoretical post-mitigation increase in HUs was obtained by subtracting the future without project conditions HU value from the estimated post-mitigation HU value for each site.

4.18 A refined habitat assessment was developed for each change in habitat type between existing and conceptual plans to account for habitat value associated with common reed dominated communities and mudflat communities. The number or value of HUs assigned to each habitat change was as follows:

- .  (P)reservation – No HUs (i.e., no change in HUs resulted from preserving existing wetland areas);
- .  (E)nhancement – An increase (or decrease) in HUs was assigned that was equal to the conceptual plan functional assessment minus the baseline functional assessment in stable systems or future without project functional assessment in systems undergoing change;
- .  (R)estoration – An increase in HUs was assigned that was equal to the conceptual plan functional assessment minus the *Phragmites* area or mudflat area functional assessment (the *Phragmites* functional assessment was always equal to one-half of the HUs of the baseline condition, mudflat in systems where mudflat acreage is increasing at the expense of limited low marsh acreage is equal to 0.6 of the HUs of the baseline condition);
- .  (C)reation – An increase in HUs was assigned to enhancement areas equal to the conceptual plan functional assessment minus the upland area functional assessment (upland functional assessment was assigned no HUs).

4.19 To promote effective decision making for environmental mitigation, Corps environmental planning has incorporated cost effectiveness/incremental cost analysis (CE/ICA), per ER 1105-2-185, to compare relative costs and outputs of alternative mitigation plans. This analysis compared costs per habitat unit output. The three major assumptions of the CE/ICA described in the Feasibility Report are:

- Mitigation efforts at each site are fully independent of mitigation efforts at other sites;

- Mitigation is implemented for the entire site, i.e., partial site mitigation was not considered; and
- Mitigation at each site may be combined with mitigation at any other site.

4.20 An additional constraint was explicitly designed into the *Feasibility Report CE/ICA*, which limited the combinations of mitigation sites considered. This constraint, based on original projected area of disturbance, habitat classifications and habitat values was that the total habitat units gained must be at least 110 HUs of which 53 HUS must be generated within New York State. The number of HUs that must be generated within New York State was revised, based upon the newly identified impacts, to 71 HUs.

4.21 Alternative mitigation sites consisted of the three sites located near Sawmill Creek that had been advanced for detailed conceptual mitigation designs as well as the JBMI site.

### **Alternative Mitigation Site Descriptions**

#### **4.22 Saw Mill Creek – West**

4.22.1 The Sawmill Creek – West site is located east of the Bloomfield Road – Chelsea Road Bridge spanning Sawmill Creek, approximately 0.5 mile east of the Arthur Kill. The site is situated on a tidal oxbow, readily identifiable on aerial photographs and NYSDEC tidal wetland maps (NYSDEC Tidal Wetland Map #568-494). NYSDEC identified this privately owned property as a candidate mitigation site. No contacts for the site were obtainable and no site visit was conducted.

4.22.2 This site is approximately 4.3 acres in size and, based on aerial photographs taken in 2001, littered with hundreds of junk cars. Sawmill Creek runs along three-fourths of the site with distinct areas of high marsh along the creek edge. Based on the aerial photographs and apparent existing commercial-use of the site as a junkyard, there is a high potential for contaminated material to be present. As previously discussed, if past land uses at the site strongly suggest that contaminants may be present at the site, then the site is deemed to be inappropriate for this mitigation plan. Therefore, Saw Mill Creek- West has been deemed an inappropriate mitigation site.

#### **4.23 Saw Mill Creek – East**

4.23.1 An 11.8-acre potential mitigation site was identified east of Sawmill Creek, located south of Edward Curry Avenue and west of the West Shore Expressway. Approximately 8.2 acres of the site is dominated by common reed grass. Two separate constructed dikes exist on the northwestern and southwestern sides of the site. It is unknown as to whether this dike system was formally built as one system and through time has degraded into two separate dike systems. The south and southwest portions of the site are adjacent to Sawmill Creek. The site is well connected hydrologically due to the presence of extensive tidal creek tributaries reaching all areas of the site except for the northernmost section. High marsh and low marsh areas exist along the tidal creek as evidenced by areas of salt marsh cordgrass, salt meadow cordgrass, and common

glasswort, and by the presence of fiddler crab populations. High marsh areas account for approximately 0.8 acres of the total site.

4.23.2 This site also has a number of features that lends itself to the restoration of a productive coastal marsh system: 1) the site is adjacent to Saw Mill Creek, about one-half a mile from the Arthur Kill, providing a good hydrologic connection, 2) the site has good access for construction by adjacent local roads, 3) the site partially owned by New York City, and 4) the site is adjacent to a New York City Department of Parks and Recreation habitat restoration site.

4.23.3 The goal of the habitat mitigation plan is to provide a multi-habitat wetland system enhancing the area's ability to support a diversity of floral and faunal species. To achieve this goal, the conceptual design uses a combination of preservation (e.g., preserve existing high marsh communities), enhancement (e.g., enhance common reed wetland to a marsh-shrub community), and restoration (e.g., restore common reed wetland to low marsh areas) techniques.

4.23.4 The main strategy would be to increase tidal exchange by lowering the existing surface elevation of the site and adding open water areas (i.e., a new tidal creek) and large areas of low marsh. The conceptual plan proposes 3.5 acres of high marsh, 4.1 acres of low marsh, 3.2 acres of coastal shrub community, 0.2 acre of salt panne and 0.4 acre of open water, while eliminating 8.2 acres of common reed dominated community (Table 3-1). Based on functional assessments of the existing conditions (i.e., baseline) and proposed conceptual designs, the restoration plans provide 225.2 littoral HUs and 314 intertidal HUs, increasing the existing 314 inter-tidal HUs to 385.1 or a gross change of 71.1 HUs. Refining this score to account for *Phragmites* habitat value results in a value 166.2 new HUs.

4.23.5 Saw Mill Creek East is in close proximity to Saw Mill Creek West; a site with high potential for contaminated material to be present. Re-examination of land use at the site and surrounding areas suggests potential for material in exceedance of residential criteria which would require off-site disposal at increased costs. These costs are reflected in the revised conceptual construction costs provided in Table 4-1 . Preference for sites with limited or no off-site disposal needs would reduce the desirability of this site for restoration.

#### **4.24 *Saw Mill Creek – North***

4.24.1 The Sawmill Creek- North site is located west of Chelsea Road and Edward Curry Street, adjacent to a small unnamed tidal creek and about 400 feet east of the Arthur Kill.

4.24.2 The site is approximately 37.6 acres and, based on aerial photographs taken in 2001, has been highly disturbed. Large areas have been cleared and/or graded and currently appear to be used as a storage facility. An unnamed tidal creek runs along the eastern border of the site. Construction of a dike/berm parallel to the creek appears to be restricting tidal flow. High marsh dominates much of the remaining wetland community.

Also contained within the site is a 1.2 acre open water area.

4.24.3 This site has several unique features that lends itself to mitigation opportunities: 1) the site is adjacent to a small unnamed tidal creek, about 400 feet from the Arthur Kill, thus is hydraulically connected to the Arthur Kill, 2) several coastal wetland habitats exist on the west side of the site, including areas of high marsh and tidal creeks, and 3) the site is largely disturbed and has low present habitat value. Since the site is mostly disturbed, the conceptual plan uses mostly wetland and habitat creation techniques to improve the habitat value.

4.24.4 The primary restoration/creation strategy would be to increase tidal exchange across the site by lowering the surface elevation and adding two tidal creeks and large areas of low marsh. An estimated 10 -14 acres of filled tidal wetland would be excavated to the original grade and replanted. This plan, Plan A would result in an increase in 315.5 HUs.

4.24.5 Conceptual Restoration Plan B would eliminate 2.9 acres of *Phragmites* while increasing the acreages of high marsh, low marsh and coastal marsh shrub community. This plan would result in an increase of 388.5 HUs.

4.24.6 The conceptual construction costs for Saw Mill Creek North in the LRR/EA included additional disposal costs due to a greater potential for HTRW contamination on site. Once again, these disposal issues would reduce the desirability of the site as a restoration site.

#### **4.25 Jamaica Bay Marsh Islands Site**

4.25.1 The Marsh Islands ecosystem is an integral part of Jamaica Bay, which has been targeted for special protection and restoration by the Federal government; the State of New York; the New York/New Jersey Harbor Estuary Program (HEP), a National Estuary Program authorized by the USEPA in 1987; and the New York City metropolitan environmental community. In a report entitled *Significant Habitats and Habitat Complexes of the New York Bight Region* (USFWS, 1999), Jamaica Bay was recognized as a coastal habitat deserving special protection in the form of preservation and restoration of habitats that contribute to sustaining and expanding the region's native living resources. Jamaica Bay was singled out as a highly productive habitat for a variety of fish and wildlife species. Of particular note are certain species of fish that breed in the area and/or use the area as a nursery for juveniles, migratory waterfowl that over winter in the area, and migratory birds (*e.g.* shorebirds, raptors, waterfowl, and land birds) that stop-over in the area during Fall and Spring migrations. The Jamaica Bay Watershed Management Plan recommended that the remnant wetland and grassland areas in Jamaica Bay be restored and protected, and invasive species (*e.g.*, common reed) be controlled.

Based on aerial photography interpretation, the NYSDEC estimates that approximately 1,400 acres of tidal salt marsh have been lost from the marsh islands alone since 1924,

with the system-wide rate of loss rapidly increasing in recent years. Between 1994 and 1999 an estimated 220 acres of salt marsh was lost at an alarming rate of 44 acres per year (USNPS, 2001). Further, it is estimated that if this trend continues, all remaining salt marsh on the islands will be lost over the next three decades.

4.25.2 The causes of marsh loss within the Jamaica Bay Marsh Islands is the subject of multiple research projects. These causes may include: limited availability of sediment to maintain the marshes, sea level rise, eutrophication leading to *Ulva* mass stresses, ice scour, soil toxicity due to excess sulfides, salinity, or fuel contaminants, ribbed mussel impacts to peat integrity, herbivory and boat traffic damage.

4.25.3 Within the Jamaica Bay marsh islands complex potential mitigation sites were reviewed in terms of severity of marsh loss, proximity to the JFK airport (and the potential increased avian conflicts) and logistical ease of construction. This review revealed Elder's Point island complex as unique in its combination of over 90% intertidal marsh loss, distance from the airport, as well as presence of a sandy substrate, and proximity to deep water (making it accessible for construction). As a result of the combination of extensive marsh loss coupled with superior construction logistics the Elder's Point island complex was chosen as the Jamaica Bay Marsh island alternative mitigation site.

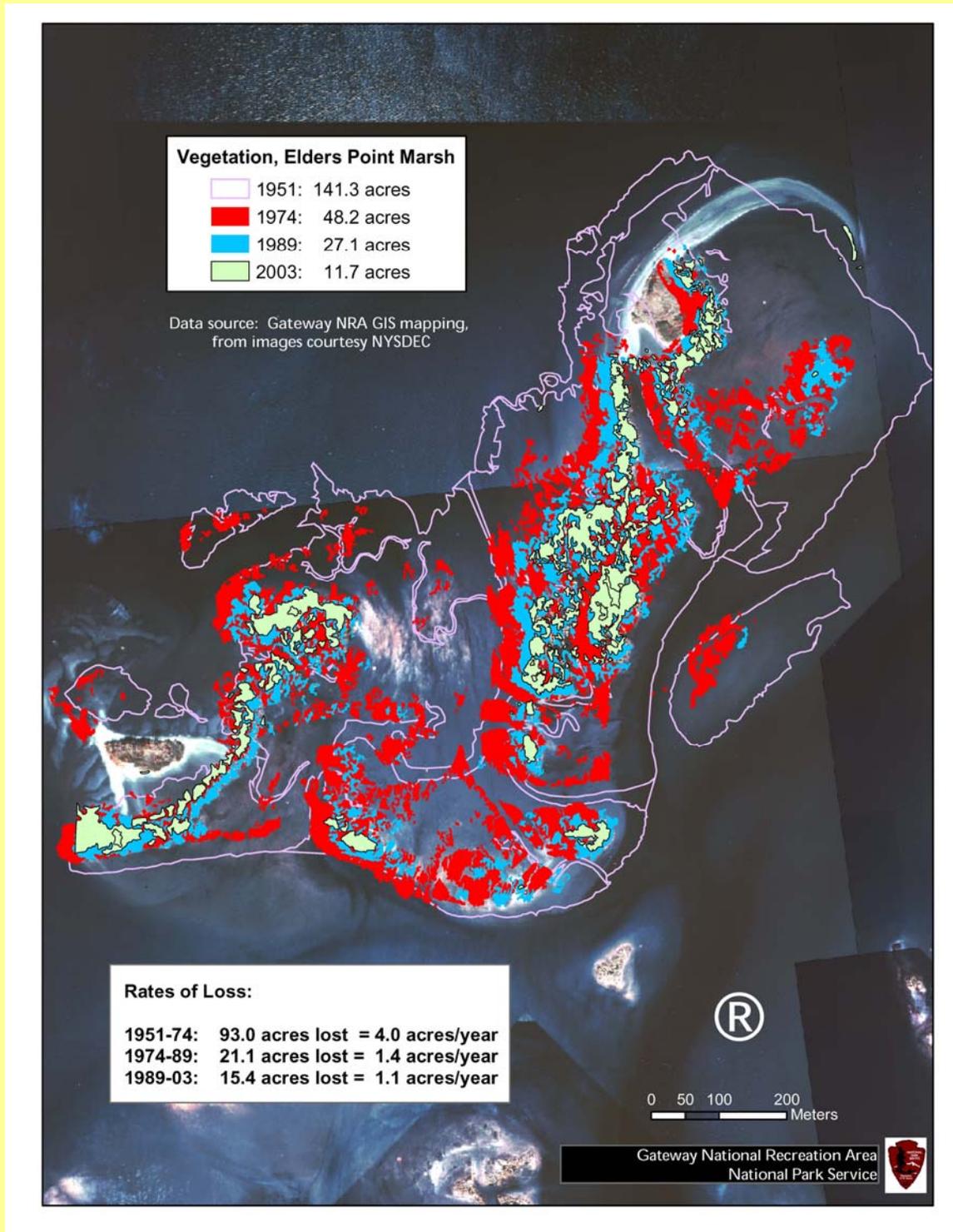
4.25.4 The Elder's Point island complex was historically one island but has eroded into two islands over the last 80+ years, as intertidal marsh was completely lost in its center. Review of recent historic aerial photography revealed that the rate of marsh loss was greatest from 1951 to 1974 (approximately 6.7 acres/year) with a lower loss rate of 1.4 acres per year from 1974 – 1989 (See Figure 1). The relatively higher sustainability of the 1974 island configuration supported the decision to use the 1974 island footprint as the mitigation target. As restoration of Elders Point West is under consideration under different funding authorities, mitigation focused on opportunities at Elders Point East.

4.25.5 The primary restoration/creation strategy would be to restore marsh elevation to that capable of supporting low marsh vegetation, increase tidal exchange across the site by adding two tidal creeks, protect the marsh from erosion and ice scour as well as increase sediment trapping through the judicious placement of geotextile tubes. The target island configuration is the based upon historic 1974 conditions. An estimated 11 acres of mixed low marsh/mudflat as well as 29 acres of mudflat, historically low marsh could be filled to the original grade and replanted. This plan would result in an increase of 411 HUs.

### **Incremental Cost Analysis**

4.26 Conceptual construction costs were developed for each site and served as a basis for the incremental cost analysis (Table 4-1). The conceptual construction costs for Old Place

**Figure 1: Elders Point Historic Rates of Marsh Loss**



Creek were also updated based upon increasing knowledge of potential off site soil disposal costs and were included in the table as a point of reference. These costs reflected the alternative conceptual mitigation plans considered for the entire site acreage, generally resulting in conceptual designs that maximized the potential HU gains for each mitigation site.

4.27 The restoration costs did not include costs for HTRW investigations or the cost of environmental cleanup or remediation. As the majority of the alternative and redeveloped conceptual designs involve excavation of the existing on-site material, generally the largest costs associated with construction of each mitigation site would be the disposal of unwanted excavated material. Disposal costs may escalate considerably if the excavated material is contaminated and becomes a regulated waste. Where potential for residential criteria exceedance was identified (i.e., Saw Mill Creek –East and North), estimated mitigation costs include some increased material disposal costs. It is understood that additional investigations at these sites may result in identification of further contaminants and disposal costs. Estimated mitigation costs do not include real estate acquisition costs.

4.28 Estimated mitigation costs include wetland plantings and assume that if available, existing native shrubbery would be used in the restoration or habitat enhancement effort. Mitigation costs include shrub planting and common reed grass removal costs.

**Table 4-1: Conceptual Construction Costs and CE/ICA Cost Analysis Summary**

<b>Site Name /Plan</b>	<b>Conceptual Construction Costs</b>	<b>Refined HUs Net Gain</b>	<b>Cost per HU</b>
Jamaica Bay Marsh Islands (Elders Pt East)	\$4,566,368	411	\$11,110
Old Place Creek	\$7,175,406	172.0	\$99,658
Sawmill Creek East	\$3,712,590	166.2	\$22,338
Sawmill Creek North Plan A	\$7,882,245	315.5	\$24,983
Sawmill Creek North Plan B	\$10,897,467	388.5	\$28,050

**Preferred Site Selection**

4.29 The process of selecting the preferred site was on the basis of best fit in meeting site selection criteria and overall cost effectiveness. Each site was ranked from best (1) to worst (5) in their ability to meet the selection criteria. Sites that rank identically for a

specific criteria would get the same rank for that category. A recap of the criteria is as follows:

**Contiguous:** NYSDEC stated preference for contiguous tracks of land located within watersheds or areas of ongoing habitat restoration initiatives, and thus potentially contributing to the broader State agency goal of coastal marsh ecosystem restoration.

**Habitat:** Preference for sites with potential to obtain a significant increase habitat value through restoration or enhancement.

**Proximity:** Preference for proximity to the project area given similar levels of potential habitat value increase. Regional perspective is applied to this criteria.

**Scarcity:** Preference for sites with significant loss in intertidal marsh acreage.

**Knowledge:** Preference for sites in which monitoring of the mitigation site would add to the body of knowledge on causes of and remediation for intertidal marsh loss.

**Disposal:** Preference for sites with limited or no off-site disposal needs; Contaminants concerns would result in a rank of N/A or no longer acceptable as a mitigation site.

**Table 4-2: Site Selection Ranking**

Site Name/Plan	Contiguous	Habitat	Proximity	Scarcity	Knowledge	Disposal	Total Rank*
Sawmill Creek West	5	4	1	2	2	N/A	14
Sawmill Creek East	2	5	1	2	2	2	14
Sawmill Creek North Plan A	3	3	1	2	2	3	14
Sawmill Creek North Plan B	4	2	1	2	2	4	15
Elders Point (JBMI)	1	1	2	1	1	1	7

\*. Site selection ranking increases as rank numerical value decreases. Total rank potential maximum value is 6.

4.28 Elders Point East, part of the Jamaica Bay Marsh Island System, was selected as the preferred mitigation site as a result of the combination of best fit in meeting site selection criteria and overall cost effectiveness.

4.29 Elders Point East was ranked first in meeting four of the five selection criteria; all criteria other than site proximity. However, as discussed previously, the regional perspective applied to site selection, as supported by DEC, confirms the appropriateness of Elders Point East as a desirable mitigation site. The cost per Habitat Unit was substantially lower for Elders Point East than for each of the other mitigation site alternatives. The cost per habitat unit was also substantially lower than the cost per Habitat Unit of the previously selected mitigation site, Old Place Creek.

## **5 PROPOSED REPLACEMENT MITIGATION SITE**

5.1 Design of the Elders Point East restoration site was in coordination with NYSDEC, National Park Service (NPS) and other interested regional stakeholders that comprised the JBMI Workgroup which focused on the agreed upon priority of rescuing the marsh island complex. The first step in the mitigation implementation approach is to guarantee, to the extent technically possible, the continued existence and function of the remaining low marsh acreage. This continued function relies upon several actions:

1. The preservation of the 11 acre low marsh/mudflat through the raising of the mudflat pockets to low marsh elevation and thus enhancing the value and improving the overall sustainability of these acres.
2. Creation of a buffer perimeter of vegetated low marsh to protect the preserved and restored low marsh system from the ongoing erosion that has contributed heavily to the ongoing marsh loss. (Comparisons of 1974 aerial photos to recent mapping of vegetated acreage reveal reduced rates of erosion and loss of marsh in areas buffered by the small upland pockets. This differential in marsh loss rate demonstrates the need for creation of a buffer perimeter to the newly restored marsh.)
3. Judicious placement of geotextile tubes to trap sand that will continue to act as a sediment source to the marsh and protect the marsh from erosive forces.
4. Significant monitoring of the site to ascertain the significance of other potential causes of marsh loss
5. Adaptive management using lessons learned to address or correct unsuccessful components of the mitigation plan, as determined by post-construction monitoring
6. Restoration of mudflat to vegetated low marsh in a configuration that mimics the 1974 marsh footprint to the extent practicable, based upon sand source availability.
7. Use of geotextile tubes to direct trapped sediment to areas within the 1974 footprint for which sand was a limiting factor at construction.

5.2 Quantification of the mitigation acreage necessary to meet or exceed requirements was then determined. Typically, a mitigation site is developed, with the intent that the habitat improvements will be in place, and provide these benefits in perpetuity. The HU's are expected to be provided for the life of the project, which in this case is 50 years. For purposes of comparing equivalent amounts of mitigation which may vary over time,

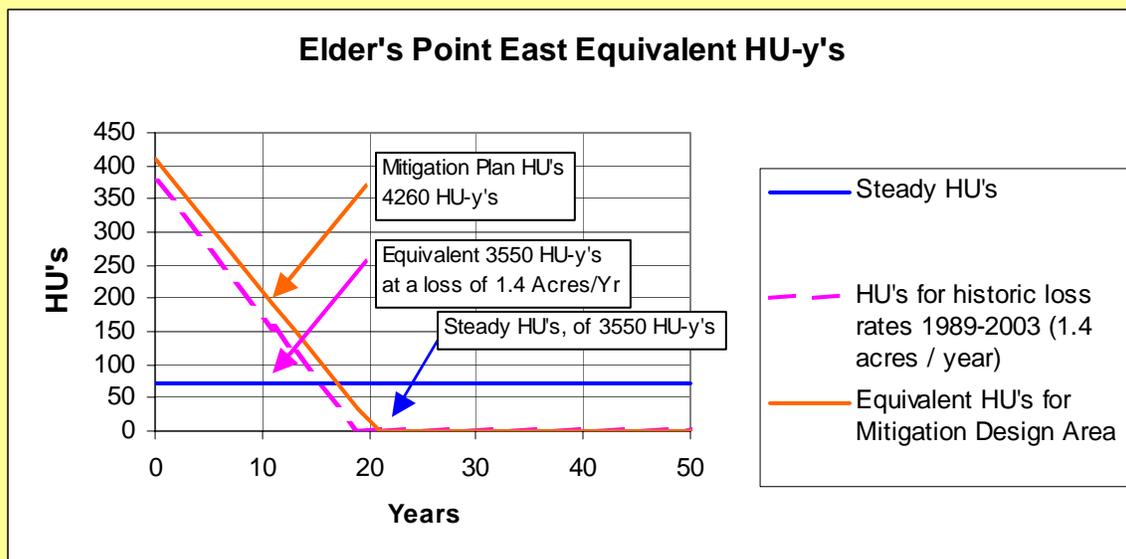
the mitigation requirements in Habit Unit -years (HU-y) was considered, rather than the instantaneous HU associated with initial construction of the mitigation site. For the HDP the requirement for HU-y's was considered 71 HU's annually over 50 years, which translates to 3550 HU-y.

5.3 Evaluation of the amount of initial mitigation required was based upon potential loss rates at the site, which predicted the effective life of the mitigation, and the efforts which would be undertaken to ensure that the mitigation objectives are met. For Elders Point the recent erosion loss range of 1.1-1.4 acres per year developed by the National Park Service served as the basis for the potential loss rate analysis. This evaluation is summarized in Figure 2. Planning for the maximum rate of erosion within this range, of 1.4 acres per year, would require 376 initial Hus, which translates to 26.5 acres of restoration that might degrade over a period of approximately 19 years.

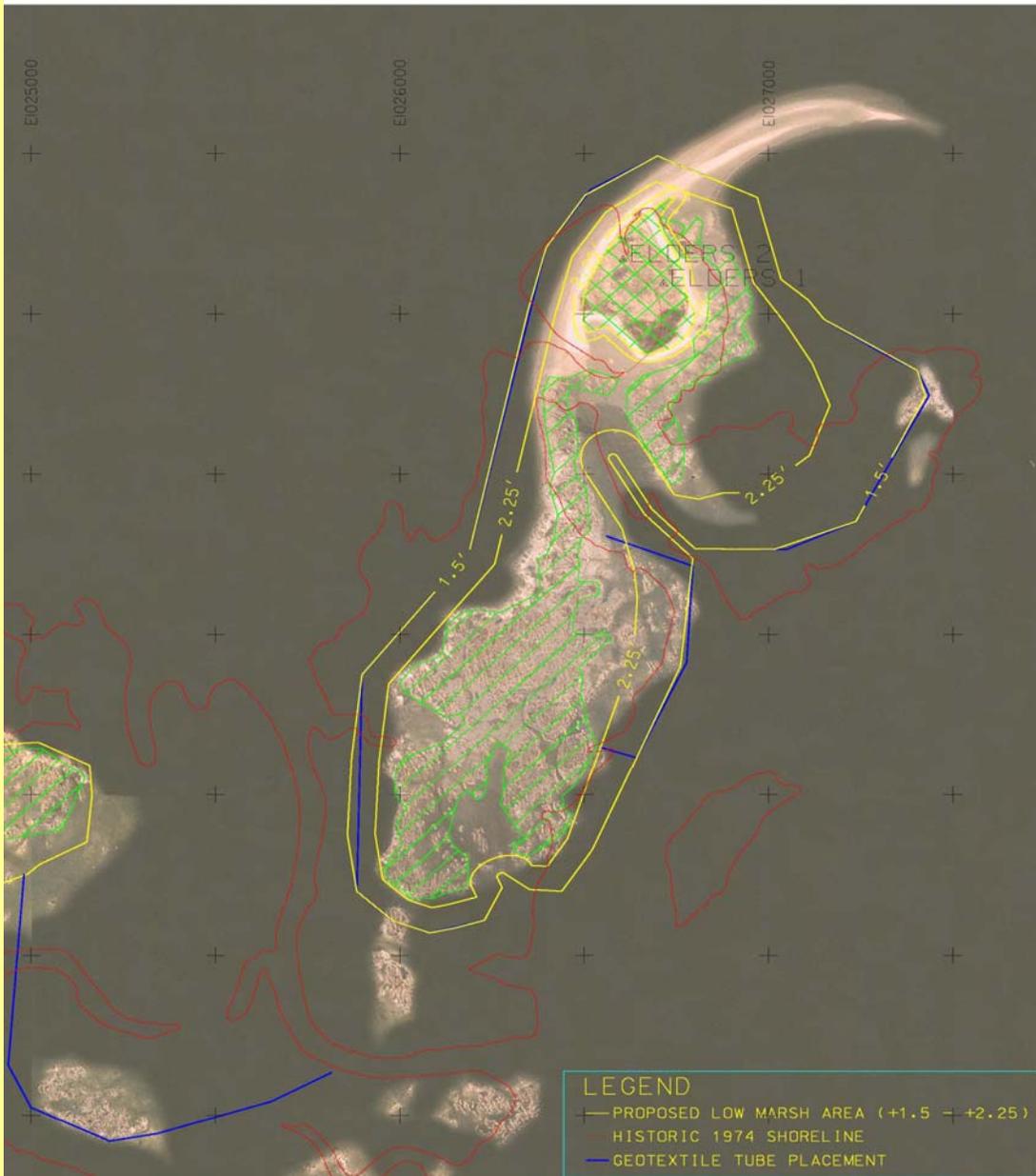
5.4 As the value of both a perimeter buffer and enhancement of the existing degraded contiguous marsh to the sustainability of the site were noted these features were included in the site design.

5.5 The resulting Elders Point East restoration site enhances the existing 11 acres of degraded marsh, and restores an additional 29 acres of low marsh (see Figure 3). This 29 acres includes the area necessary to meet the HU requirement as well as a substantial buffer. This buffer provides a secondary benefit in that the specific mitigation needs for the harbor deepening are continually refined, as project construction moves forward. Planning for the higher range of expected loss, and including the buffer and low marsh enhancement not only provides a reasonable expectancy of meeting or exceeding mitigation requirements, but also provides an additional threshold to account for potential increases in the estimate of impacts.

**Figure 2: Mitigation Requirements Based Upon HUs Loss Rates**

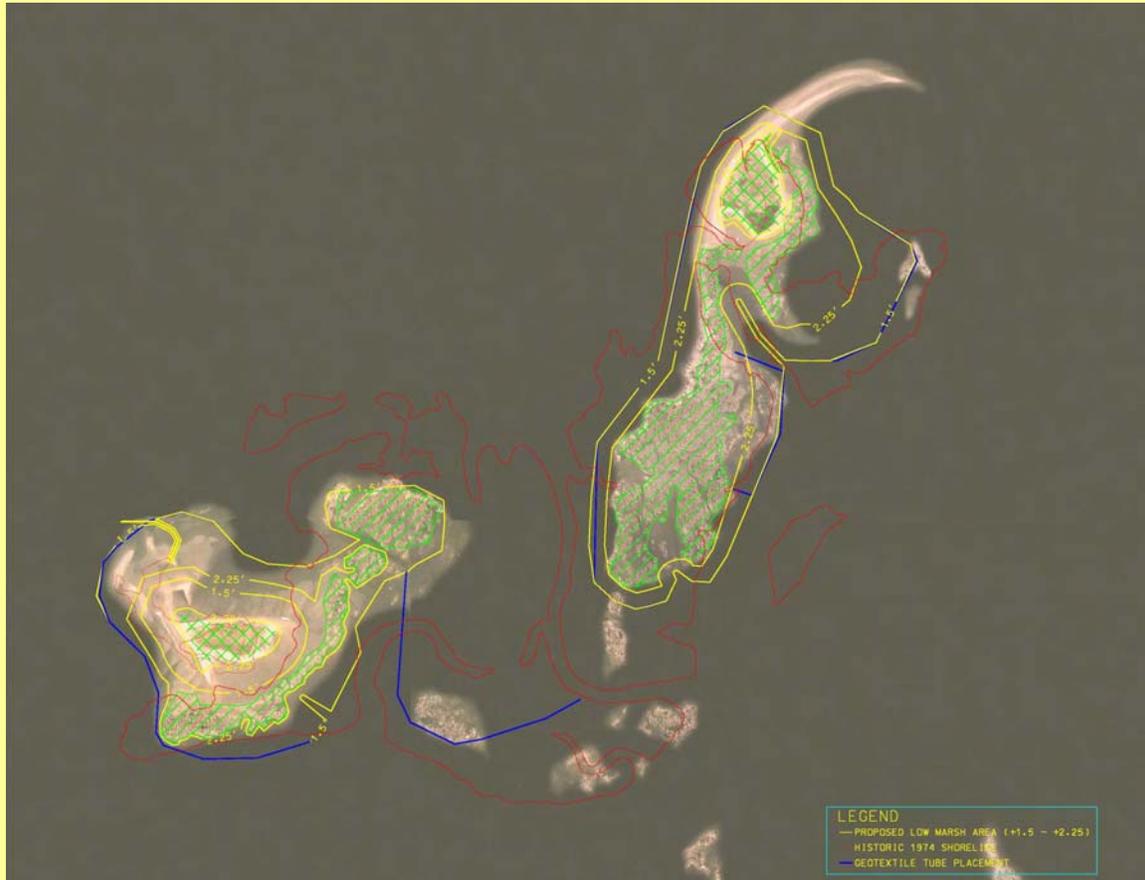


**Figure 3: Elders Point East Mitigation Plan**



5.6 In addition, mitigation at Elders Point East also complements the restoration efforts planned at Elders Point West and will result in restoration of the entire Elders Point island complex (Figure 4).

**Figure 4: Elders Point Integrated Mitigation and Restoration Plans**



## 6 AFFECTED ENVIRONMENT

6.1 The *Feasibility Report* provided a complete, comprehensive description of the existing resources in the study area that may be affected by the proposed channel improvements that were known at that time. This description was based on an extensive database on the natural resources in New York and New Jersey Harbor developed over the past 20 years. Information contained in the *Feasibility Report* was obtained from various literature sources and supplemented with project-specific sampling programs. Additional (new) project-specific biological data (e.g. fisheries, hydrodynamic, water quality and sediment transport modeling) that was collected and analyzed since the conclusion of the Feasibility phase (during PED) was included for evaluation in the 2004 LRR/EA report.

6.2 The *Feasibility Report* study area is the same for implementation of the Harbor Deepening with the replacement mitigation site as with the Old Place Creek mitigation site. This EA relies on and refers to the socioeconomic, land use, cultural and natural resource information provided in the *Feasibility Report* and since supplemented, to describe the affected environment within the Study area.

## **7 ASSESSMENT OF ENVIRONMENTAL EFFECTS**

7.1 The environmental effects of the harbor deepening program have not changed from those identified in the *Feasibility Report* and *LRR/EA*. Conditions are the same, no new short or long-term impacts are associated with the Proposed Action as it results in the same final depth and width of channel. There have been slight modifications in the acreages impacted, as a result of more precise bathymetric surveys. These impacts are all accounted for in the mitigation design. No environmental impacts to navigation, air quality, water resources, aquatic biologic resources, noise, protected species and wildlife, essential fish habitat, cultural resources or cumulative impacts are attributable to the change in mitigation site.

7.2 Extensive coordination on restoration at the Jamaica Bay Marsh Islands occurred on the City, State and Federal Level to assure compliance with all relevant statutes and review requirements. This coordination is documented in the Draft Integrated Ecosystem Restoration Report, July, 2005 (ERR/EA). Input was solicited from the New York City Department of Environmental Protection (NYCDEP), NYC Department of City Planning, New York State Department of State, NYSDEC, the National Parks Service, US Fish and Wildlife Service and NOAA Fisheries.

7.3 Coastal Consistency Assessments, the Section 404(b)(1) analysis and Essential Fish Habitat assessment for the Jamaica Bay Marsh Islands Restoration were all prepared for the ERR/EA. Compliance has been met for all environmental quality statutes and environmental review requirements that do not require detailed plans. Statutes that require detailed plans will be obtained as these plans are completed. The relationship of the restoration plan to Environmental Statutes is summarized in table 7-1. Ongoing coordination strongly suggests that the agencies administering these programs are fully supportive of Jamaica Bay Marsh Islands restoration and expect the plan to meet all relevant standards when applied.

**Table 7-1. Relationship of Recommended Plan to Environmental Statutes**

<b>FEDERAL ENVIRONMENTAL LAWS AND EXECUTIVE ORDERS</b>	<b>COMPLIANCE</b>
Clean Air Act, as amended	Pending
Coastal Zone Management Act of 1972, as amended	In compliance
Endangered Species Act of 1973, as amended	In compliance
Migratory Bird Treaty Act of 1918, as amended	In compliance
Fish and Wildlife Coordination Act of 1934, as amended	Pending
Marine Mammals Protection Act of 1972 Marine Protection, research, and Sanctuaries Act of 1972, as amended	Pending
Magnuson-Stevens Fishery Conservation and Management act, as Amended by the Sustainable Fisheries Act of 1996 (PL 104-267)	Pending
National Environmental Policy Act of 1969, as amended	Pending
National Historic Preservation Act of 1966, as amended	In compliance
Watershed Protection and Flood Protection Act, as amended?	In compliance
Executive Order 11990, Protection of Wetlands	In compliance
Executive Order 12114, Environmental Effects of Major Federal Actions	In compliance
Executive Order 12898, Environmental Justice	In compliance
<b>APPLICABLE STATE LAWS OF NEW YORK</b>	<b>COMPLIANCE</b>
Coastal Zone Consistency	Pending
Coastal Zone Management Act	Pending
Article 25 and Article 15 of the Environmental Conservation Law, as amended	Pending
Environmental Quality Review Law (1976)	Pending
Fish and Wildlife Code (Title Six)	Pending
New York State Environmental Laws (Local Admin)	Pending
Tidal Wetland Act	Pending
<b>APPLICABLE LAWS OF THE CITY OF NEW YORK</b>	<b>COMPLIANCE</b>
Uniform Land Use Review Procedure (ULURP)	In compliance
Local Waterfront Revitalization Program and Coastal Resources Act	Pending

## **UNSIGNED FINDING OF NO SIGNIFICANT IMPACT**

### **New York and New Jersey Harbor Deepening Project, New York and New Jersey Mitigation Site Replacement**

#### **Federal Navigation Project**

I have reviewed the Environmental Assessment for the New York and New Jersey Harbor Deepening Project in terms of overall public interest. The analysis of the possible consequences of the alternatives (including the “no action” alternative) prepared in the Limited Reevaluation Report (LRR) to address replacement of the New York mitigation site for the New York and New Jersey Harbor Deepening Project were considered in terms of probable environmental impact, social well being and economic factors. The preferred alternative proposes the replacement of the Old Place Creek, Staten Island, New York mitigation site with the Elders Point, Jamaica Bay Marsh Islands, New York mitigation site.

The “no action” alternative to this proposed action would result in non-compliance with the Council on Environmental Quality (CEQ) Regulations for Implementing NEPA (40 C.F.R. §1500-1508), and with paragraph 7-35 of USACE Engineering Regulation (ER) 1105-2-100 (USACE 1990, 1997), the planning of USACE-sponsored and other Federal projects which ensure that project-caused adverse environmental impacts (i.e., impacts to fish and wildlife resources) have been avoided or minimized to the extent practicable, and that remaining unavoidable significant adverse environmental impacts are compensated for to the extent justified. As USACE regulations stipulate that the Recommended Plan must contain sufficient mitigation measures to ensure that the plan selected will have no more than negligible net adverse impacts on fish and wildlife resources, including impacts of the mitigation measures themselves the “no action” alternative is unacceptable.

The recommended plan would result in the mitigation of unavoidable project –caused environmental impacts through the restoration of low marsh at Elders Point within the Jamaica Bay Marsh Island system.

The attached Environmental Assessment discussed the environmental impacts associated with replacement of the mitigation site. The environmental conditions and effects associated with replacement of the mitigation site are the same as those associated with the previously identified mitigation site. They are significantly less than the conditions and effects that would result in the absence of a suitable mitigation site.

As a result of my review, I find that there are no new circumstances or information relevant to environmental concerns bearing on the proposed action or its impacts that would indicate a significant impact on the human environment requiring a supplement to the project’s Environmental Impact Statement for these changed conditions.

Richard J. Polo Jr.  
Colonel, U.S. Army  
District Engineer

## **APPENDIX A**

# Littoral Zone Wetland Functional Assessment

## 1.0 Purpose and Objectives

Assess littoral zone functions and assign a numeric value of these functions to New York / New Jersey Harbor.

## 2.0 Assess the function of specific habitat types:

- A. Littoral Zone (Permanently submerged ) -0 ft to – 6 ft below MLW
- B. Intertidal Zone (intermittently flooded) MLW to MHW

The method relies on a series of questions concerning environmental conditions typical of subtidal wetlands (and later tidal wetlands) in an urban environment.

The intent was to provide quantifiable yes/no questions to identify the potential functional values and the observed physical and biological values of the submerged ecosystems that will be disturbed. This method was designed to evaluate the potential impacts resulting from navigation channel improvements.

## 3.0 Methodology and Questions Derived from other Methods

Two methods were used to determine functional values:

- A. Wetland Evaluation Technique (WET). Adamus, P.R., E.J. Clarain, Jr., R.D. Smith and R.E. Young. 1987. Wetland Evaluation Technique (WET), Volume II: Methodology. U.S. Army Corps of Engineers Waterways Experiment Station, Vicksburg, MS. Operational Draft Technical Report Y-87-\_\_\_ and Federal Highway Administration (FHWA-IP-88-029).
- B. Indicator Value Assessment (IVA). Hruba, T., W.R. Cesaneck, and K.E. Miller. 1995. Estimating relative wetland values for regional planning. Wetlands. 15(2): 93-107

### 3.1 *Comparative Uses of Method*

- A. Pre mitigation –the value of existing wetland that will be disturbed as a result of the project. In a stable system this value is assumed to also equal the future without project conditions value. In a system where one habitat is decreasing, the future without project conditions will reflect the continued loss and possible disappearance of a habitat type.

- B. Post mitigation –the value of created wetlands as compared to those functions lost as a result of the project.
- C. Net Function Gained –potential wetland values that could be enhanced or created through a mitigation program

### 3.2 *Functional Characteristics of Littoral Zones*

- A. Seasonal characteristics such as spawning, breeding and foraging habitat values for aquatic and bird species.
- B. Transitions between tidally exposed wetland and deep water or pelagic zones.
- C. Receives nutrients (debris) from intertidal zone.
- D. Receives nutrients from forage fish and invertebrates.
- E. Nutrient Removal/Retention and Transformation from land water including stormwater outfalls and sewage plant discharges.
- F. Has the Potential to produce nutrients from Submerged Aquatic Vegetation (SAV).

## 4.0 Functional Values

- A. Functional assessment values are summarized to develop “Habitat Units” (HU) that reflect the habitat values lost and the amount of units that will require mitigation.
- B. Yes indicates values is being preformed and absence of limiting factor =1
- C. No indicated function is absent or limited = 0
- D. Questions with more then one response = Point range from zero to 1
- E. Four questions (6, 7, 19 and 21) deemed important response values and therefore were doubled. This created weighted values.
- F. Highest potential score = 26 points.

### 4.1 *Habitat Units*

Functional assessment score X wetland area = ecological value expressed in Habitat Units (HU). The tables on the left indicate the maximum possible total for each category where tables on the right indicate the assessed totals.

#### **OLD PLACE CREEK FUNCTIONAL ASSESSMENT (EXISTING CONDITIONS)**

<b>MAXIMUM NON-WEIGHTED SUBTOTALS</b>	
<b>Baseline:</b>	<b>29</b>
<b>Littoral:</b>	<b>9</b>
<b>Intertidal:</b>	<b>16</b>

<b>NON-WEIGHTED ASSESSMENT SUBTOTALS:</b>	
<b>Baseline:</b>	<b>17</b>
<b>Littoral:</b>	<b>0</b>
<b>Intertidal:</b>	<b>7.5</b>

MAXIMUM NON-WEIGHTED TOTALS:	
Littoral:	38
Intertidal:	45

NON-WEIGHTED ASSESSMENT TOTALS:	
Littoral:	17.0
Intertidal:	24.5

Some questions (6, 7, 19 and 21) have been weighted as doubled and therefore a weighted assessment score was developed:

MAXIMUM WEIGHTED SUBTOTALS:	
Baseline:	29
Littoral:	16
Intertidal:	16

WEIGHTED ASSESSMENT SUBTOTALS:	
Baseline:	17.0
Littoral:	0.0
Intertidal:	7.5

Final scores are indicated on the bottom right for Littoral zone (17) and the intertidal zone (24.5):

MAXIMUM WEIGHTED TOTALS:	
Littoral:	45
Intertidal:	45

WEIGHTED ASSESSMENT TOTALS:	
Littoral:	17.0
Intertidal:	24.5

Maximum scores are on the left, existing condition score is on the right.  
Intertidal Habitat Units are calculated by multiplying site acres (21.5) times the weighted assessment score (24.5) = 526.75

Plan A weighted assessment = 34.5

Plan B weighted assessment = 33.5

If we enhanced the existing conditions by implementing these plans the change is assessment would be:

**Wetland Enhancement:**

Plan A = (34.5- 24.5) = 8 x 21.5 = 215 HU gained

Plan B = (33.5 – 24.5) = 9 x 21.5 = 193.5 HU gained

### REFINED VALUES

*In recognition of the reduced values of marsh with extensive phragmites cover, in which tidal flow is impaired, in an area dominated by Phragmites the weighted assessment score was reduced by ½ of the existing condition value. Therefore the Intertidal assessment value for Old Place Creek = 12.25*

*If we restored the Phragmites wetland by implementing a new plan the change in assessment would be:*

**Wetland Restoration: (assumes 50% value of Phragmites)**

*Plan A = (32.5- 12.25) = 20.25 x 21.5 = 435.37 HU s*

*Plan B = (34.5 – 12.25) = 22.25 x 21.5 = 478 HU s*

*This calculation is based on the total site assessment and does provide an overall assessment of the Habitat Units gained.*

*Jamaica Bay Marsh Islands is a unique system in that vegetated intertidal marsh is disappearing and may well become the limiting factor in spawning, breeding and foraging habitat values for some aquatic and bird species. Specific to that system, in an area in which vegetated intertidal marsh is projected to disappear within the life of the project, for un-vegetated mudflat the weighted assessment score was reduced by 40% of the existing condition.*

*A second, more refined strategy would be to provide a detailed breakdown of the existing conditions with a new proposed plan. In this method each change in community type is compared with the existing condition and classified as to the change and assigned a change in weighted assessment units as: (Alternative B)*

*Preservation 0*

*Enhancement 8*

*Restoration 20.5*

*Creation 32.5*

*Each area is calculated individually, summed on a spread sheet and a refined number calculated.*

*Assuming the Phragmites as assigned a 50% value, in the Alternative B case the number is 222.3 habitat units. Less then the 435 calculated above.*

## **APPENDIX B**

# Functional Assessment Screening Questions

Site: Jamaica Bay Marsh Option Baseline 07/01/2005

Score: Weighted  
Score:

**BASELINE QUESTIONS (applicable to both littoral zone and intertidal wetlands):**

<b>B-1.) Is the wetland sheltered from:</b>	
Neither wind nor waves (exposed)? wind and <u>2/3</u> waves exposed	0.17
Wind only? _____	0
Waves only? _____	0
Wind and Waves? _____	0
<b>B-2.) If the wetland is protected from wind and/or waves, is it protected by a structure subject to natural decomposition or degradation (e.g., pile fields or sunken barges) or is the structure breached, damaged, or otherwise compromised?</b>	
Yes _____ No _____	0
<b>B-3.) Is the wetland or a portion of the wetland an island, delta, bar, shallow or peninsula that intercepts waves and thereby protects other nearby shores?</b>	
Yes _____ No <u>x</u> _____	0
<b>B-4.) Are there tidally exposed mudflats adjacent to the wetland?</b>	
Yes <u>x</u> _____ No _____	2
<b>B-5.) Are there stream or river mouths within 100 yards of the wetland?</b>	
Yes _____ No <u>x</u> _____	0
<b>B-6.) Is there nearby vegetated upland habitat?</b>	
Yes <u>x</u> _____ No _____	2
<b>B-7.) Does the boundary between the wetland and upland support adequate understory vegetation (e.g., shrubs less than 3 feet tall, dense grasses, etc.) to serve as cover for vertebrates using the wetland?</b>	
Yes <u>x</u> _____ No _____	1
<b>B-8.) Is the wetland separated from an upland habitat by manmade barriers (bulkheads, fill, rail lines, and roadways)?</b>	
Yes _____ No <u>x</u> _____	1
<b>B-9.) Is the wetland shaded by near-water (less than 10 ft above MHW) structures such as piers or docks?</b>	
Yes _____ No <u>x</u> _____	1
<b>B-10.) Are there observed negative effects (such as scouring) from manmade debris (e.g., demolition-type debris, woody debris, collapsed pier or dock sections) or are there deteriorating over-water or waterfront structures within or immediately adjacent to the wetland?</b>	
Yes _____ No <u>x</u> _____	1
<b>B-11.) Has sediment deposition (mud flats in poor circulation areas, smothered vegetation) negatively impacted the wetland?</b>	
Yes _____ No <u>x</u> _____	1
<b>B-12.) Are water circulation patterns or tidal exchange patterns reduced by manmade structures (piers, tidal gates, submerged debris)?</b>	
Yes _____ No <u>x</u> _____	1

# Functional Assessment Screening Questions

Site: Jamaica Bay Marsh Option Baseline 07/01/2005

Weighted  
Score:      Score:

<b>B-13.) Are any portions of the wetland or areas near the wetland ditched, channelized, culverted, or otherwise modified so as to artificially increase the rate of flow of water into the wetland?</b>	Yes _____ No <u>  x  </u>	1
<b>B-14.) Are there active stormwater or wastewater outfalls within or adjacent to (within 100 feet) the littoral zone wetland?</b>	Yes _____ No <u>  x  </u>	1
<b>B-15.) Is the wetland within or adjacent to a documented hazardous waste site or a prior oil spill area?</b>	Yes _____ No <u>  x  </u>	2
<b>B-16.) Is the wetland within a designated cable crossing area?</b>	Yes _____ No <u>  x  </u>	1
<b>B-17.) Are there sources of significant, frequent human disturbance (active docks, moorings, marinas, loading areas, streets and highways) within 0.25 mile of the wetland?</b>	Yes <u>  x  </u> No _____	0
<b>B-18.) Is the wetland contiguous to a public park or within 0.25 mile of a public access point for recreational fishing or wildlife observation?</b>	Yes <u>  x  </u> No _____	1
<b>B-19.) Were forage fish observed within or adjacent to the wetland?</b>	Yes <u>  x  </u> No _____	1
<b>B-20.) Were shorebirds observed upgradient of or in the wetland:</b>		
Resting? <u>  x  </u> (none observed)		0.5
Foraging? <u>  x  </u>		0.5
<b>B-21.) Were herons and/or egrets observed upgradient of or in the wetland:</b>		
Resting? <u>  x  </u> (none observed)		0.5
Foraging? <u>  x  </u>		0.5
<b>B-22.) Is the wetland located within one mile of an active heron rookery?</b>	Yes <u>  x  </u> No _____	1
<b>B-23.) Can any Federal or State endangered or threatened species or are any wildlife species that are on the USFWS National Species of Special Emphasis list be reasonably expected to use the wetland?</b>	Yes <u>  x  </u> No _____	1
<b>B-24.) Does the wetland have a State or Federal special designation relating to its recognized wildlife value?</b>	Yes <u>  x  </u> No _____	1
<b>B-25.) Is the wetland part of, and essential to, an ongoing, long-term environmental research and monitoring program?</b>		
Yes <u>  X  </u> No _____ low key research ongoing now		0.50

# Functional Assessment Screening Questions

Site: Jamaica Bay Marsh Option Baseline 07/01/2005

	Score:	Weighted Score:
<b>LITTORAL ZONE:</b>		
<b>L-1.) Is the littoral zone wetland:</b>		
Less than 50 feet in width? _____	0	0.00
Between 50 and 100 feet in width? _____	0	0.00
Greater than 100 feet in width? _____	0	0.00
<b>L-2.) Is the littoral zone wetland buffered by:</b>		
A sublittoral (6 – 15 feet) area less than 50 feet in width? _____	0	0.00
A sublittoral area 50 to 100 feet in width? _____	0	0.00
A sublittoral area greater than 100 feet in width? _____	0	0.00
<b>L-3.) Is the littoral zone wetland within 100 feet of the navigation channel?</b>		
Yes _____ No _____	0	0.00
<b>L-4.) Are there vegetated wetlands upgradient of the littoral zone wetland?</b>		
Yes _____ No _____	0	0.00
<b>L-5.) If #L-4 is yes, is saltmarsh cordgrass dominant?</b>		
Yes _____ No _____	0	0.00
<b>L-6.) Is the littoral zone wetland substrate type mainly:</b>		
Organic? _____	0	0.00
Sand? _____	0	0.00
Sand with rocks and or debris (glass, brick)? _____	0	0.00
<b>L-7.) Is there evidence of benthic macroinvertebrates in the littoral zone wetland:</b>		
No evidence? _____	0	0.00
Shells only? _____	0	0.00
Attached and/or sessile forms (barnacles, clams, mussels)? _____	0	0.00
Mobile forms (sand shrimp, oligochates and polychaetes)? _____	0	0.00
Attached/sessile and mobile forms? _____	0	0.00
<b>L-8.) Does the littoral zone wetland have attributes (e.g., old pile-ons and pier structures) that provide cover for fish?</b>		
Yes _____ No _____	0	0.00

# Functional Assessment Screening Questions

Site: Jamaica Bay Marsh Option Baseline 07/01/2005

Weighted  
Score:      Score:

<b>INTERTIDAL ZONE:</b>		
<b>I-1.) How many of the habitat types listed below exist in the intertidal wetland:</b>		
• Natural Channel	Number of these habitat types: <u>2</u>	1
• Intertidal - vegetated		
• Intertidal - unvegetated		
<b>I-2.) Are the vegetated areas of the intertidal wetland distributed in a mosaic pattern (i.e., is there high vegetation/water interspersion)?</b> Poor mosaic		
Yes <u>          </u>	No <u>          </u>	0.30
<b>I-3.) Does the intertidal wetland vegetation consist primarily of saltmarsh cordgrass?</b>		
Yes <u>          </u>	No <u>          </u> only in vegetated area	1.00
<b>I-4.) Is shoreline damage (collapsed banks, undercutting) evident within the intertidal wetland?</b>		
Yes <u>          </u>	No <u>          </u> 90% is damaged	0.10
<b>I-5.) Indicate the presence and size of littoral zone wetland downgradient of the intertidal wetland:</b>		
• No littoral zone wetland downgradient	<u>0</u>	0
• Less than 50 feet in width	<u>          </u>	0
• 50 to 100 feet in width	<u>          </u>	0
• Greater than 100 feet in width	<u>x</u>	2
<b>I-6.) Is there high marsh upgradient of the intertidal wetland?</b>		
Yes <u>x</u>	No <u>          </u>	2
<b>I-7.) Is there an upland forested area contiguous to the intertidal wetland?</b>		
Yes <u>x</u>	No <u>          </u>	1
<b>I-8.) Is the boundary between the intertidal wetland and upland areas irregular?</b>		
Yes <u>x</u>	No <u>          </u>	1
<b>I-9.) If the wetland contains a channel, is the channel at least mildly sinuous with a meander ratio exceeding 1.2?</b> N/A		
(Meander ratio is the distance from one point on a river to another point on the river via the channel, divided by the straight line distance between the two points.)		
Yes <u>          </u>	No <u>x</u>	0
<b>I-10.) Under average flow conditions, does water enter the intertidal wetland in a channel and then spread out over a wide area?</b> Enters lower area (not channel and spreads)		
Yes <u>          </u>	No <u>          </u>	0.10
<b>I-11.) Are there any portions of the intertidal wetland or areas near the intertidal wetland that have been ditched, channelized, or culverted so as to artificially increase the rate of flow of water out of the wetland?</b>		
Yes <u>          </u>	No <u>x</u>	1
<b>I-12.) Is the intertidal wetland substrate type mainly:</b>		
Muck (nonporous organic)?	<u>          </u> one third muck	0
Peat (porous organic)?	<u>x</u> one third peat	0.17
Clay?	<u>          </u>	0
Sand?	<u>X</u> one third sand	0
<b>I-13.) Is there evidence of invertebrates (e.g., fiddler crabs, blue crabs) in the intertidal wetland?</b>		
Yes <u>x</u>	No <u>          </u>	1

# Functional Assessment Screening Questions

Site: Jamaica Bay Marsh Option Baseline 07/01/2005

MAXIMUM NON-WEIGHTED SUBTOTALS	
Baseline:	29
Littoral:	9
Intertidal:	16

NON-WEIGHTED ASSESSMENT SUBTOTALS:	
Baseline:	22.67
Littoral:	0
Intertidal:	10.57

MAXIMUM WEIGHTED SUBTOTALS:	
Baseline:	29
Littoral:	16
Intertidal:	16

WEIGHTED ASSESSMENT SUBTOTALS:	
Baseline:	22.67
Littoral:	0.0
Intertidal:	33.24

MAXIMUM WEIGHTED TOTALS	
Littoral:	45
Intertidal:	45

REFINED MUDFLAT ASSESSMENT SUBTOTALS	
Littoral:	0.0
Intertidal:	19.9

# Functional Assessment Screening Questions

Site: Jamaica Bay Marsh Option w/project \_\_\_\_\_ 07/01/2005 \_\_\_\_\_

Score: \_\_\_\_\_ Weighted Score: \_\_\_\_\_

**BASELINE QUESTIONS (applicable to both littoral zone and intertidal wetlands):**

**B-1.) Is the wetland sheltered from:**

Neither wind nor waves (exposed)?	<u>20% exposed</u>	0.4
Wind only?	_____	0
Waves only?	_____	0
Wind and Waves?	_____	0

**B-2.) If the wetland is protected from wind and/or waves, is it protected by a structure subject to natural decomposition or degradation (e.g., pile fields or sunken barges) or is the structure breached, damaged, or otherwise compromised?**

Yes \_\_\_\_\_ No \_\_\_\_\_ 0

**B-3.) Is the wetland or a portion of the wetland an island, delta, bar, shallow peninsula that intercepts waves and thereby protects other nearby shores?**

Yes x No x 0.2

**B-4.) Are there tidally exposed mudflats adjacent to the wetland?**

Yes x No \_\_\_\_\_ 2

**B-5.) Are there stream or river mouths within 100 yards of the wetland?**

Yes \_\_\_\_\_ No x 0

**B-6.) Is there nearby vegetated upland habitat?**

Yes x No \_\_\_\_\_ 2

**B-7.) Does the boundary between the wetland and upland support adequate understory vegetation (e.g., shrubs less than 3 feet tall, dense grasses, etc.) to serve as cover for vertebrates using the wetland?**

Yes x No \_\_\_\_\_ 1

**B-8.) Is the wetland separated from an upland habitat by manmade barriers (bulkheads, fill, rail lines, and roadways)?**

Yes \_\_\_\_\_ No x 1

**B-9.) Is the wetland shaded by near-water (less than 10 ft above MHW) structures such as piers or docks?**

Yes \_\_\_\_\_ No x 1

**B-10.) Are there observed negative effects (such as scouring) from manmade debris (e.g., demolition-type debris, woody debris, collapsed pier or dock sections) or are there deteriorating over-water or waterfront structures within or immediately adjacent to the wetland?**

Yes \_\_\_\_\_ No x 1

**B-11.) Has sediment deposition (mud flats in poor circulation areas, smothered vegetation) negatively impacted the wetland?**

Yes \_\_\_\_\_ No x 1

**B-12.) Are water circulation patterns or tidal exchange patterns reduced by manmade structures (piers, tidal gates, submerged debris)?**

Yes \_\_\_\_\_ No x 1

# Functional Assessment Screening Questions

Site: Jamaica Bay Marsh Option w/project \_\_\_\_\_ 07/01/2005 \_\_\_\_\_

Weighted  
Score:      Score:

<b>B-13.) Are any portions of the wetland or areas near the wetland ditched, channelized, culverted, or otherwise modified so as to artificially increase the rate of flow of water into the wetland?</b>	Yes _____ No <u>  x  </u>	1
<b>B-14.) Are there active stormwater or wastewater outfalls within or adjacent to (within 100 feet) the littoral zone wetland?</b>	Yes _____ No <u>  x  </u>	1
<b>B-15.) Is the wetland within or adjacent to a documented hazardous waste site or a prior oil spill area?</b>	Yes _____ No <u>  x  </u>	2
<b>B-16.) Is the wetland within a designated cable crossing area?</b>	Yes _____ No <u>  x  </u>	1
<b>B-17.) Are there sources of significant, frequent human disturbance (active docks, moorings, marinas, loading areas, streets and highways) within 0.25 mile of the wetland?</b>	Yes <u>  x  </u> No _____	0
<b>B-18.) Is the wetland contiguous to a public park or within 0.25 mile of a public access point for recreational fishing or wildlife observation?</b>	Yes <u>  x  </u> No _____	1
<b>B-19.) Were forage fish observed within or adjacent to the wetland?</b>	Yes <u>  x  </u> No _____	1
<b>B-20.) Were shorebirds observed upgradient of or in the wetland:</b>		
Resting? <u>  x  </u> (none observed)		0.5
Foraging? <u>  x  </u>		0.5
<b>B-21.) Were herons and/or egrets observed upgradient of or in the wetland:</b>		
Resting? <u>  x  </u> (none observed)		0.5
Foraging? <u>  x  </u>		0.5
<b>B-22.) Is the wetland located within one mile of an active heron rookery?</b>	Yes _____ No <u>  x  </u>	0
<b>B-23.) Can any Federal or State endangered or threatened species or are any wildlife species that are on the USFWS National Species of Special Emphasis list be reasonably expected to use the wetland?</b>	Yes <u>  x  </u> No _____	1
<b>B-24.) Does the wetland have a State or Federal special designation relating to its recognized wildlife value?</b>	Yes <u>  x  </u> No _____	1
<b>B-25.) Is the wetland part of, and essential to, an ongoing, long-term environmental research and monitoring program?</b>		
Yes <u>  X  </u> No _____ major research		1.00

# Functional Assessment Screening Questions

Site: Jamaica Bay Marsh Option w/project \_\_\_\_\_ 07/01/2005 \_\_\_\_\_

	Score:	Weighted Score:
<b>LITTORAL ZONE:</b>		
<b>L-1.) Is the littoral zone wetland:</b>		
Less than 50 feet in width? _____	0	0.00
Between 50 and 100 feet in width? _____	0	0.00
Greater than 100 feet in width? _____	0	0.00
<b>L-2.) Is the littoral zone wetland buffered by:</b>		
A sublittoral (6 – 15 feet) area less than 50 feet in width? _____	0	0.00
A sublittoral area 50 to 100 feet in width? _____	0	0.00
A sublittoral area greater than 100 feet in width? _____	0	0.00
<b>L-3.) Is the littoral zone wetland within 100 feet of the navigation channel?</b>		
Yes _____ No _____	0	0.00
<b>L-4.) Are there vegetated wetlands upgradient of the littoral zone wetland?</b>		
Yes _____ No _____	0	0.00
<b>L-5.) If #L-4 is yes, is saltmarsh cordgrass dominant?</b>		
Yes _____ No _____	0	0.00
<b>L-6.) Is the littoral zone wetland substrate type mainly:</b>		
Organic? _____	0	0.00
Sand? _____	0	0.00
Sand with rocks and or debris (glass, brick)? _____	0	0.00
<b>L-7.) Is there evidence of benthic macroinvertebrates in the littoral zone wetland:</b>		
No evidence? _____	0	0.00
Shells only? _____	0	0.00
Attached and/or sessile forms (barnacles, clams, mussels)? _____	0	0.00
Mobile forms (sand shrimp, oligochates and polychaetes)? _____	0	0.00
Attached/sessile and mobile forms? _____	0	0.00
<b>L-8.) Does the littoral zone wetland have attributes (e.g., old pile-ons and pier structures) that provide cover for fish?</b>		
Yes _____ No _____	0	0.00

# Functional Assessment Screening Questions

Site: Jamaica Bay Marsh Option w/project 07/01/2005

Score: **Weighted Score:**

<b>INTERTIDAL ZONE:</b>		
<b>I-1.) How many of the habitat types listed below exist in the intertidal wetland:</b>		
• Natural Channel	Number of these habitat types: <u>3</u>	<b>2</b>
• Intertidal - vegetated		
• Intertidal - unvegetated		
<b>I-2.) Are the vegetated areas of the intertidal wetland distributed in a mosaic pattern (i.e., is there high vegetation/water interspersions)?</b>		
Yes <u>x</u>	No _____	<b>1.00</b>
<b>I-3.) Does the intertidal wetland vegetation consist primarily of saltmarsh cordgrass?</b>		
Yes _____	No _____ in 19/132 acres	<b>0.14</b>
<b>I-4.) Is shoreline damage (collapsed banks, undercutting) evident within the intertidal wetland?</b>		
Yes _____	No _____ 19 acres undamaged	<b>0.14</b>
<b>I-5.) Indicate the presence and size of littoral zone wetland downgradient of the intertidal wetland:</b>		
• No littoral zone wetland downgradient	<u>0</u>	<b>0</b>
• Less than 50 feet in width	_____	<b>0</b>
• 50 to 100 feet in width	_____	<b>0</b>
• Greater than 100 feet in width	<u>x</u>	<b>2</b>
<b>I-6.) Is there high marsh upgradient of the intertidal wetland?</b>		
Yes <u>x</u>	No _____	<b>2</b>
<b>I-7.) Is there an upland forested area contiguous to the intertidal wetland?</b>		
Yes <u>x</u>	No _____	<b>1</b>
<b>I-8.) Is the boundary between the intertidal wetland and upland areas irregular?</b>		
Yes <u>x</u>	No _____	<b>1</b>
<b>I-9.) If the wetland contains a channel, is the channel at least mildly sinuous with a meander ratio exceeding 1.2?</b>		
	N/A	
(Meander ratio is the distance from one point on a river to another point on the river via the channel, divided by the straight line distance between the two points.)		
Yes _____	No <u>x</u>	<b>0</b>
<b>I-10.) Under average flow conditions, does water enter the intertidal wetland in a channel and then spread out over a wide area?</b>		
	Enters lowe spreads to 14%	
Yes <u>x</u>	No _____	<b>0.14</b>
<b>I-11.) Are there any portions of the intertidal wetland or areas near the intertidal wetland that have been ditched, channelized, or culverted so as to artificially increase the rate of flow of water out of the wetland?</b>		
Yes _____	No <u>x</u>	<b>1</b>
<b>I-12.) Is the intertidal wetland substrate type mainly:</b>		
Muck (nonporous organic)?	<u>one third</u> muck	<b>0</b>
Peat (porous organic)?	<u>X one third</u> peminus ten	<b>0.1</b>
Clay?	_____	<b>0</b>
Sand?	<u>X one third</u> p plus ten acres	<b>0</b>
<b>I-13.) Is there evidence of invertebrates (e.g., fiddler crabs, blue crabs) in the intertidal wetland?</b>		
Yes <u>x</u>	No _____	<b>1</b>

# Functional Assessment Screening Questions

Site: Jamaica Bay Marsh Option w/project \_\_\_\_\_ 07/01/2005 \_\_\_\_\_

MAXIMUM NON-WEIGHTED SUBTOTALS	
Baseline:	29
Littoral:	9
Intertidal:	16

NON-WEIGHTED ASSESSMENT SUBTOTALS:	
Baseline:	22.6
Littoral:	0
Intertidal:	11.52

MAXIMUM NON-WEIGHTED TOTALS:	
Littoral:	45
Intertidal:	45

WEIGHTED ASSESSMENT SUBTOTALS	
Littoral:	22.6
Intertidal:	34.12

## **Appendix A Pertinent Correspondence**

**New York State Department of Environmental Conservation**  
**Division of Environmental Permits, Region 2**  
47-40 21<sup>ST</sup> Street, Long Island City, NY 11101-5407  
Phone: (718) 482-4997 • FAX: (718) 482-4975  
Website: [www.dec.state.ny.us](http://www.dec.state.ny.us)



Denise M. Sheehan  
Acting Commissioner

March 18, 2005

**Re: NYSDEC Permit No. 2-6500-00053/00001**  
**New York and New Jersey Harbor Deepening Project**  
**Change in Mitigation Site**

William Slezak, Chief  
CENAN-PP-H  
New York District Corps of Engineers  
Department of the Army  
26 Federal Plaza  
New York, NY 10278-0090

Dear Mr. Slezak:

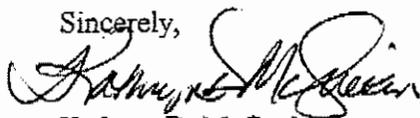
The Department hereby requests the Army Corps of Engineers New York District cease the development of the mitigation plan for the Old Place Creek site. The Department recommends that the Corps revise its mitigation plan to focus on the restoration of salt marsh islands in Jamaica Bay. The Department's decision is based, in part, on the possibility that the Goethals Bridge Modernization project may impact the proposed mitigation site at Old Place Creek.

Based on past conversations with the Corps and Port Authority, marsh island work would be conducted as two projects under two different funding programs. The first project would serve as mitigation for the Harbor Deepening Project and involve the restoration of 60-70 acres at Elders Point Marsh. The second project would be restoration of ~40 acres at Yellow Bar Hassock under a 207 program. Please note that the Department already has the necessary matching funds for the 207 program through a Bond Act award.

The Department recommends the project sponsors begin planning for both projects with emphasis on construction of Elders Point Marsh first; target completion date of Spring 2006. If baseline work can be accelerated, Yellow Bar could be conducted in the same time frame as Elders Point, but would be acceptable if completed in Spring 2007. It is important that the Department receive a full commitment from the sponsors for both projects.

If you have any questions or are in need of further assistance, please contact me at 718-482-4078 or [kdmcguck@gw.dec.state.ny.us](mailto:kdmcguck@gw.dec.state.ny.us).

Sincerely,

  
Kathryn D. McGuckin  
Environmental Analyst II

**NYSDEC Permit No. 2-6500-00053/00001 New York and New Jersey Harbor Deepening Project  
Change in Mitigation Site**

**March 18, 2005  
Page 2 of 2**

cc: Steve Zahn, NYSDEC Bureau of Marine Resources  
John F. Cryan, NYSDEC Regional Permit Administrator, Region 2  
John J. Ferguson, NYSDEC State Dredge Team Coordinator  
file/CHRON

**New York State Department of Environmental Conservation****Regional Director, Region 2**47-40 21<sup>ST</sup> Street, Long Island City, NY 11101-5407

Phone: (718) 482-4949 • FAX: (718) 482-4954

Website: www.dec.state.ny.us

Denise M. Sheehan  
Acting  
Commissioner

July 25, 2005

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

Re: Jamaica Bay Marsh Islands Restoration

Dear Mr. Santomauro,

The New York State Department of Environmental Conservation (the Department) fully supports restoration of tidal wetlands at Elders Point, within the Jamaica Bay Marsh islands, as mitigation for impacts to the littoral zone caused by the Harbor Navigation Project. Restoration of vegetated tidal wetlands within the Jamaica Bay Marsh Islands has been given the highest priority by the Department.

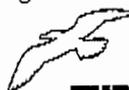
The Department has observed significant losses of vegetated tidal wetlands in the marsh islands of Jamaica Bay. The US Army Corps of Engineers proposed ecosystem restoration actions, in connection with its authorized navigation projects within Jamaica Bay and throughout New York Harbor, has established a restoration plan for the Jamaica Bay Marsh Island Ecosystem with the participation of the State of New York, Gateway National Recreation Area, Port Authority of New York and New Jersey, the City of New York, and local stakeholders. The program is based on a scientific approach to enhancing the Marsh Island Ecosystem in a manner that will restore tidal wetland habitat. Given the scale of the Harbor Navigation Project it is appropriate to view its impacts from a regional perspective and choose a mitigation site from that perspective. The Department is committed to actions that address this loss at Jamaica Bay, a regionally important fish, wildlife and plant habitat complex. The Department concurs with the Army Corps of Engineers' choice of the Jamaica Bay Marsh Islands as an appropriate mitigation site.

If you have any questions, or require further information please contact Mr. Stephen Zahn, Region 2 Marine Resources Program Manager at 718-482-6461.

Sincerely,

Thomas C. Kunkel  
Regional Director

cc: S. Zahn

**THE PORT AUTHORITY OF NY & NJ**

August 26, 2005

Mr. William Slezak, P.E.  
Chief, Harbor Programs Branch  
U.S. Army Corps of Engineers  
26 Federal Plaza  
New York, NY 10278-0090

Dear Mr. Slezak:

This is in reference to the Limited Reevaluation Report and Environmental Assessment (LRR/EA) under preparation for the New York and New Jersey Harbor Deepening Project for implementation of mitigation in New York State.

By letter dated March 18, 2005 the New York State Department of Environmental Conservation (NYSDEC) had requested that the Corps suspend efforts to develop a mitigation site at Old Place Creek, Staten Island and instead focus on the Elder's Point, Marsh Island within Jamaica Bay as an alternative mitigation site.

Since this time the Port Authority has been working with the Corps, the NYSDEC, New York City Department of Environmental Protection (NYCDEP), and National Park Service (NPS), to evaluate the option of changing the mitigation site to Elder's Point. The culmination of these efforts is included in the Draft LRR / EA, which we recently had the opportunity to review. We support the conclusions of the LRR/EA, including the evaluation of alternative mitigation sites, evaluation of the cost-effectiveness of the sites, and the identification of the scale of the mitigation, and required monitoring and adaptive management efforts. In all, we support the change in mitigation sites, which results in no increase in the project cost.

We also recognize that some elements of the plan will be developed to a greater level of detail in the development of Plans and Specification, and detailed monitoring reports. We will continue to work with the interagency team to finalize the details of these plan elements.

The Port Authority accepts its stewardship responsibility for the New York / New Jersey estuary as well as its operational responsibilities to our customers and tenant. We will continue to work closely with the project team to meet the tight schedules for these efforts.

Please contact me if you have any questions.

Sincerely,

Thomas H. Wakeman  
General Manager  
Waterways Development Division

cc: S. Nicholson, S. Couch

Port Commerce Department  
225 Park Avenue South - 11th Floor  
New York, NY 10003  
T: 212 435 7000

## **Appendix B Real Estate Plan**

TO BE INSERTED