

**Raritan Bay and Sandy Hook Bay, New Jersey
Combined Erosion Control and
Coastal Storm Risk Management Project
Borough of Highlands Feasibility Study**

**Final Feasibility Report and Environmental
Assessment
May 2020**

**Appendix A3:
Clean Water Act Section 404(b)(1) Guidelines
Evaluation**

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INTRODUCTION

This document presents Section 404(b)(1) guidelines evaluation for the coastal storm protection project Highlands, Monmouth County, New Jersey. The project spans a geographic distance of approximately 8,000 linear feet along the coast of the Borough of Highlands (Highlands) and ties into high ground (+14 ft NAVD88) at each end. Because the project follows the actual perimeter of the shoreline, its total length is 10,737 linear ft. The project includes a detention pond, diversion culverts, raised ground surfaces, and a pump station for interior drainage

The discharge to waters of the U.S. that may occur related to the project would be the placement of bulkheads into shallow near shore waters along this reach of shoreline. Best management practices will be fully utilized to ensure that turbidity and sedimentation are limited to the area immediately adjacent to the project sit and minimized to the greatest extent possible. This evaluation is based on the regulations presented in 40 CFR 230, Section 404(b)(1): Guidelines for Specification of Disposal Sites for Dredged or Fill Material. The regulations implement Sections 404(b) and 401(1) of the Clean Water Act, which govern disposal of dredged and fill material inside the territorial seas baseline [§230.2(b)].

As stated in Section 230.10(a)(4): For actions subject to NEPA, where the U. S. Army Corps of Engineers (USACE) is the permitting agency, the analysis of alternatives required for NEPA environmental documents, including supplemental USACE NEPA documents will in most cases provide the information for the evaluation of alternatives under these Guidelines. The Environmental Assessment (EA), to which this evaluation is an appendix, provides the documentation necessary to attest that the project is fully in compliance with the Section 404(b)(1) guideline. The EA provides a full project description and location, description of existing conditions, full alternatives analysis, and description of potential impacts as a result of the project and the project's construction. The analysis provided within the EA coastal storm risk management plan will not cause or contribute to significant degradation of the waters of the United States, as is demonstrated in the following sections and tables.

404(b)(1) EVALUATION

Study Description

- A. Location - The Study area is located in the northern portion of Monmouth County in Highland, NJ. The Study area is defined by Sandy Hook Bay to the north, Sand Hook to the east, Middletown Township to the south, and the Borough of Atlantic Highlands to the west. The study area is approximately 8000 feet along the bayshore, from Murray Beach at the western end to the Route 36 bridge at the eastern end.
- B. General Description – Coastal storm risk management elements consisting of approximately 8,000 linear feet along the coast of Highlands and ties into high ground (+14 ft NAVD88) at each end. Because the project follows the actual perimeter of the shoreline, its total length is 10,737 linear ft. The project includes a detention pond, diversion culverts, raised ground surfaces, and a pump station for interior drainage

- C. Authority and Purpose - The Raritan Bay and Sandy Hook Bay, New Jersey project, including the Highlands study, was again authorized by a resolution of the Committee on Public Works and Transportation of the U.S. House of Representatives adopted August 1, 1990. This study authority covered the Raritan Bay and Sandy Hook Bay area, from South Amboy at the entrance to the Raritan River at the western end to Highlands at the eastern end.

The study was underway when Hurricane Sandy severely impacted the study area in October 2012. In response to the storm, the Disaster Relief Appropriations Act of 2013 was passed by Congress and signed into law by the President on January 29, 2013 as Public Law (P.L.) 113-2. The legislation provides supplemental appropriations to address damages caused by Hurricane Sandy and to reduce future flood risk in ways that will support the long-term sustainability of the coastal ecosystem and communities, and reduce the economic costs and risks associated with large-scale flood and storm events.

Chapter 4 of P.L. 113-2 directs the USACE to prepare two interim reports to Congress for areas that were affected by Hurricane Sandy, a project performance evaluation report, and a comprehensive study to address the flood risks of vulnerable coastal populations in areas that were affected by Hurricane Sandy within the boundaries of the NAD. The District prepared the *Second Interim Report, Disaster Relieve Appropriations Act, 2013* dated May 30, 2013, which includes the Highlands study among those authorized but unconstructed projects that were granted funding for study completion at full Federal expense. This report is a response to this authorization.

- D. General Description of Fill Material - Construction of the storm protection bulkhead, floodwall, and road closure gate would require the placement of armor stone, bedding stone, concrete, geotextile fabric, and sand.
1. General Characteristics of Material - Quarry stone, bedding stone, armor stone, steel sheetpile, and geotextile fabric, would be used to construct the protection elements.
 2. Quantity of Material - Construction of the protection elements would require the following quantities of materials (estimated): 24,790 cubic yards (cy) of fill, 18,461 cy of concrete, 12,248 tons of bedding stone, 420,503 linear feet (lf) of sheet pile, 11,667 square yards (sy) of geotextile material, 35,867 tons of armor stone, and 2.56 acres of turf.
 3. Source of Material - Sources for fill material may include on-site and off site substrate dependent upon the composition of soils at the site-specific locations. Rocks and concrete materials will be obtained from commercial sources proximal to the Selected Plan. The sand will come from inland sources.
- E. Proposed Discharge Site
1. Location - The Study area location is described in I (a), above.

2. Size - The size/dimensions of the coastal storm risk management measures are described in I (d), above.
3. Type of Sites/Habitat - The potential coastal storm risk management measures would result in the following cover type impacts:
4. Time and Duration of Disposal - The Selected Plan will be constructed in various elements over a two-year period. Construction of the first elements is projected to begin in Dec 2017 and end Aug. 2022.
5. Disposal Method - Construction equipment such as bulldozers, backhoes, dump trucks, will be used.

FACTUAL DETERMINATIONS

Review of Compliance – Section 230.10(a)-(d)

	YES	NO
a. The discharge represents the least environmentally damaging practicable alternative and, if in a special aquatic site, the activity associated with the discharge must have direct access or proximity to, or be located in the aquatic ecosystem to fulfill its basic purpose.	X	
b. The activity does not appear to: 1) violate applicable state water quality standards or effluent standards prohibited under Section 307 of the CWA; 2) jeopardize the existence of Federally listed threatened and endangered species or their habitat; and 3) violate requirements of any Federally designated marine sanctuary.	X	
c. The activity will not cause or contribute to significant degradation of waters of the U.S. including adverse effects on human health, life stages of organisms dependent on the aquatic ecosystem, ecosystem diversity, productivity and stability, and recreational, aesthetic, and economic values.	X	
d. Appropriate and practicable steps have been taken to minimize potential adverse impacts of the discharge on the aquatic ecosystem.	X	

Technical Evaluation Factors (Subparts C-F)

	N/A	Not Significant	Significant
a. Potential Impacts on Physical and Chemical Characteristics of the Aquatic Ecosystem (Subpart C)			
1) Substrate		X	
2) Suspended particulates/turbidity		X	
3) Water column impacts		X	
4) Current patterns and water circulation		X	
5) Normal water circulation		X	
6) Salinity gradients	X		

b. Potential Impacts on Biological Characteristics on the Aquatic Ecosystem (Subpart D)			
1) Threatened and endangered species		X	
2) Fish, crustaceans, mollusks, and other organisms in the aquatic food web		X	
3) Other wildlife (mammals, birds, reptiles and amphibians)		X	
c. Potential Impacts on Special Aquatic Sites (Subpart E)			
1) Sanctuaries and refuges		X	
2) Wetlands		X	
3) Mud Flats		X	
4) Vegetated Shallows	X		
5) Coral reefs	X		
6) Riffle and pool complexes	X		
d. Potential Effects on Human Use Characteristics (Subpart F)			
1) Municipal and private water supplies	X		
2) Recreational and commercial fisheries		X	
3) Water-related recreation		X	
4) Aesthetic impacts		X	
5) Parks, national and historic monuments, national seashores, wilderness areas, research sites and similar preserves	X		

Evaluation and Testing – Subpart G

a. The following information has been considered in evaluating the biological availability of possible contaminants in dredged or fill material. (Check only those appropriate.)		
1) Physical characteristics		X
2) Hydrography in relation to known or anticipated sources of contaminants		X
3) Results from previous testing of the material or similar material in the vicinity of the project		X
4) Known, significant sources of persistent pesticides from land runoff or percolation		X
5) Spill records for petroleum products or designated hazardous substances (Section 311 of CWA)		X
6) Public records of significant introduction of contaminants from industries, municipalities or other sources		X
7) Known existence of substantial material deposits of substances which could be released in harmful quantities to the aquatic environment by man-induced discharge activities		X
8) Other sources (specify)		N/A
List appropriate references – See Environmental Assessment		

	YES	NO
b. An evaluation of the appropriate information factors in 3a above indicates that there is reason to believe the proposed dredged material is not a carrier of contaminants or that levels of contaminants are substantively similar at extraction and disposal sites and not likely to require constraints.	X	

Disposal Site Delineation - Section 230.11(f)

a. The following information has been considered in evaluating the biological availability of possible contaminants in dredged or fill material. (Check only those appropriate.)		
1) Depth of water at disposal site		Yes
2) Current velocity, direction, variability at disposal site		Yes
3) Degree of turbulence		Yes
4) Water column stratification		Yes
5) Discharge of vessel speed and direction		Yes
6) Rate of discharge		Yes
7) Dredged material characteristics (constituents, amount, and type of material, settling velocities)		Yes
8) Number of discharges per unit of time		Yes
9) Other factors affecting rates and patterns of mixing (specify)		Yes
List appropriate references – See Environmental Assessment		
	YES	NO
b. An evaluation of the appropriate information factors in 4a above indicated that the disposal sites and/or size of mixing zone are acceptable.	X	

Actions to Minimize Adverse Effects (Subpart H)

	YES	NO
All appropriate and practicable steps have been taken, through application of recommendation of Section 230.70-230.77 to ensure minimal adverse effects of the proposed discharge.	X	

Factual Determination – Section 230.11

A review of appropriate information, as identified in Items 2-5 above, indicates there is minimal potential for short or long-term environmental effects of the proposed discharge as related to:		
	YES	NO
a. Physical substrate at the disposal site (review Sections 2a, 3, 4 and 5 above)	X	

b. Water circulation, fluctuation and salinity (review Sections 2a, 3, 4 and 5)	X	
c. Suspended particulates/turbidity (review Sections 2a, 3, 4 and 5)	X	
d. Contaminant availability (review Sections 2a, 3 and 4)	X	
e. Aquatic ecosystem structure, function and organisms (review Sections 2b, 2c, 3 and 5)	X	
f. Proposed disposal site (review Sections 2, 4 and 5)	X	
g. Cumulative effects on the aquatic ecosystem	X	
h. Secondary effects on the aquatic ecosystem	X	

Findings of Compliance or Non-Compliance

	YES	NO
The proposed disposal site for discharge of dredged or fill material complies with Section 404(b)(1) guidelines.	X	

In summary, the implementation of the recommended Highlands Coastal Storm Risk Management Plan:

Will have no adverse effects of the discharge of pollutants on human health or welfare, including but not limited to effects on municipal water supplies, plankton, fish, shellfish, wildlife, and special aquatic sites.

Will have no significant adverse effects of the discharge of pollutants on life stages of aquatic life and other wildlife dependent on aquatic ecosystems, including the transfer, concentration, and spread of pollutants or their byproducts outside of the disposal site through biological, physical, and chemical processes;

Will have no significant adverse effects of the discharge of pollutants on aquatic ecosystem diversity, productivity, and stability.

Will have no significant adverse effects of discharge of pollutants on recreational, aesthetic, and economic values.