Appendix B1

Clean Water Act Section 404(b)(1) Evaluation Report

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INTRODUCTION

This document presents the Section 404(b)(1) guidelines evaluation for the construction of a storm risk management project to address coastal flooding associated with the tidal portion of the Passaic River. The 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 sea baseline [§230.2(b)].

DRAFT 404(b)(1) EVALUATION

The following Section 404(b)(1) evaluation is presented in a format consistent with typical evaluations in the New York/New Jersey Harbor area and addresses all required elements of the evaluation.

I. Project Description

a. Location — The proposed project (i.e., the Proposed Action) includes the tidally-influenced and surge prone areas in the lower Passaic and Hackensack Rivers and upper Newark Bay, New Jersey (i.e., the Study Area). Communities within the Study Area are: the city of Newark (Essex County), and its suburbs of Harrison and Kearny (Hudson County). The waterfronts of these communities are mostly developed for industrial uses including shipping (oil and gas, containers/consumer goods) and wastewater treatment plants. Related rail, barge, truck, and storage infrastructure line the waterfront. In addition to the developed areas there are some public parks and a sports arena on the waterfront.

b. General Description — The Proposed Action is a coastal storm risk management plan consisting of f seven flanking segments that involve floodwalls with closure and tide gates, and an internal drainage plan involving pump stations and backflow prevention features. The location where these structural flood management elements are proposed is referred to as the Project Area. The Proposed Action would provide structural floodwater protection for the entire Study Area to an elevation of +14 feet NAVD88. The purpose of the proposed flood protection structures is to manage coastal storm risk to residents, property, and infrastructure, in the Study Area's communities.

c. Authority and Purpose — A study of water resource problems in the Passaic River watershed was first authorized by the Flood Control Act of 1936. The Passaic Tidal area is part of the larger Passaic River Main Stem project, which was authorized for construction by Section 101(a)(18) of the Water Resources Development Act (WRDA) of 1990, as amended by Section 101(a)(18)(ii) of WRDA 1992, Section 102(p) of WRDA 1992, and Section 327(i) of WRDA 2000:

In general. --The project for flood control, Passaic River Main Stem, New Jersey and New York: Report of the Chief of Engineers, dated February 3, 1989, except that the main diversion tunnel shall be extended to include the outlet to Newark Bay, New Jersey, at a total cost of $1,200,000,000, with an estimated first Federal cost of $890,000,000 and an estimated first non–Federal cost of $310,000,000.

Pre-engineering design work was underway until the sponsor withdrew support for the project in 1995. Work was halted until March 2011, when the non-Federal sponsor, the New Jersey Department of Environmental Protection (NJDEP), requested a reevaluation of the Passaic River Main Stem project; a Feasibility Cost Sharing Agreement was executed in June 2012 between the United States Army Corps of Engineers (USACE) and NJDEP.

The reevaluation study was underway when Hurricane Sandy severely impacted the Study Area in October 2012. The storm's tidal surge inundated the southern portion of the Main Stem project area. The Tidal Protection Area was included in the Second Interim Report to Congress in response to P.L. 113-2, listing it as eligible to be managed as its own separate project. The reevaluation study is funded for completion via P.L. 113-2. This general reevaluation study will present updated projects costs, benefits, and National Environmental Policy Act (NEPA) documentation to determine if the project is still economically justifiable, technically feasible, and environmentally acceptable.

The purpose of the study is to determine if the Passaic Tidal project remains economically justifiable, technically feasible, and environmentally acceptable. A 1987 General Design Memorandum (GDM) and 1995 GDM presented preliminary designs for the project. In the 20 years since the 1995 GDM was drafted, Study Area conditions have changed, and engineering standards and criteria have been updated based on lessons learned from major storm events. Changes in Study Area conditions, post-hurricane resiliency work, updated economic forecasting, and new engineering and hydrologic and Hydraulic (H&H) analyses will inform the team's analysis.

d. General Description of Fill Material —Any fill in wetlands and watercourses will be minimal and will be quantified during the detailed design phase and authorized through an appropriate Section 404 permit.

e. General Characteristics of Material — Wetland fill is proposed at Segment 2 and 3 in tidal and freshwater wetlands. Any fill material in wetlands or creeks adjoining tidal waters will be minimal and would consist of riprap or structural materials including clean earthen fill, the concrete floodwall, and tide gate. Approximately 0.38 acre of fill in wetlands is proposed and would be authorized through an appropriate Section 404 permit.

(1) Quantity of Material —Approximately 0.02 acre of fill would be placed within the unnamed tributary to Jasper Creek and 0.06 acre of fill would be placed within wetlands adjacent to the tributary at Segment 3. Approximately 0.30 acre of fill would be placed within wetlands at Segment 2.

(2) Source of Material — Earth fill, rocks and concrete material, if required, would be obtained from commercial sources proximal to the Project Area.

f. Proposed Discharge Site Description

(1) Location — The Project Area is described in I (a), above.

(2) Size — The proposed floodwall is 10 feet wide. At Segment 2 the floodwall would have a maximum height of 4.8 to 8.2 feet with approximately 375 lf placed in wetlands. At Segment 3 the proposed floodwall would have a maximum height of 9.4 feet and would be placed over a distance of 139 feet within wetlands.

(3) Type of Sites/Habitat — Based on NJDEP and National Wetland Inventory (NWI) wetland mapping, the Proposed Action would result in the following estimated cover type impacts resulting from permanent fill:

Type	**Acres**
Tidal Wetlands/Waters	0.02
Freshwater Wetlands	0.36
Subtotal: 404(b) regulated fill	**0.38**

(4) Time and Duration of Disposal — The fill areas identified above would be permanent and would be placed during the overall construction period for Segments 2 and 3, which is estimated at 12 months. (Construction of all segments of the project is anticipated to be approximately 2.5 years).

g. Disposal Method — Construction equipment such as bulldozers, backhoes, and dump trucks are anticipated to be used, but the construction contractor may choose to utilize additional or different equipment.

II. Factual Determinations

a. Physical Substrate Determination —

- Substrate Elevation and Slope — The wetland at Segment 2 is relatively flat with elevations ranging from 4-6 feet (NAVD88). The wetland at Segment 3 has an approximate slope of 33% with elevations ranging from 4-14 feet.

- Sediment Type — Field sampling of sediment types within the Project Area for physical and chemical characterization has not been conducted; therefore, specifics of sediment types are not known at this time. According the National Wetland Inventory (NWI) the unnamed tributary to Newark Bay located at Segment 3 has an unconsolidated bottom. In addition, NJDEP has mapped the Segment 2 and 3 locations as historic fill. Considering this information and the high density urban setting, the sediments in wetlands in the Project Area are expected to be disturbed and subject to non-point source pollution. The lower eight miles of the Passaic River, including the portion in the Study Area has been designated a Superfund site by the US Environmental Protection Agency (EPA) due to contaminated sediments. There will be no disturbance to the sediments in the Passaic River by the Proposed Action.

- Dredged/Fill Material Movement — After placement, all fill material would be stabilized. Concrete structures would harden and remain in place. No secondary impacts to wetlands and streams would occur as a result of fill activities. Excavation of sediments at Segments 2 and 3 would be required to install the proposed floodwall.

- Physical Effects on Benthos — Physical impacts to benthos are anticipated as a result of construction of Segments 2 and 3. These impacts will be minor and limited to the footprint of the floodwall. Considering the surrounding land use and non-point source pollution inputs, the benthic community is expected to be limited to species tolerant of disturbed conditions.

- Other Effects — No additional major impacts are anticipated.

- Actions Taken to Minimize Impacts — The coastal storm risk management plan was aligned in upland areas to the extent practicable. Construction impacts would be minimized through implementation of best management practices (BMPs), including use of silt fencing, storm drain protection, and stabilized construction entrances.

Outfalls from the interior drainage pump stations will be designed to avoid disturbance of the sediments in the receiving waterbodies and avoiding associated water quality impacts from sediment resuspension, including increased turbidity and contaminant transport. Pump station discharge velocities would be addressed by adding energy dissipaters or stilling basins before the discharged water entered the river, thus eliminating the potential for sediment resuspension and physical effects on benthos.

b. Water Circulation, Fluctuations, and Salinity Determinations

(1) Water Quality —

(a) Salinity — No changes to salinity of surface waters are anticipated.

(b) Water Chemistry — No impacts are anticipated.

(c) Clarity — Temporary increases in suspended sediment during construction of the floodwall have the potential to occur but will be mitigated by implementation of BMPs. No long-term impacts are anticipated.

(d) Color — No impacts are anticipated.

(e) Odor — Not measurable.

(f) Taste — N/A.

(g) Dissolved Gas Levels — Potential short-term localized decrease in dissolved oxygen could occur if organic material is suspended into the water column.

(h) Nutrients — No impacts are anticipated.

(i) Eutrophication — No increase in eutrophication related nutrients (e.g., nitrogen, phosphorus) are anticipated.

(j) Other — N/A.

(2) Current Pattern and Circulation —

(a) Current Pattern and Flow — The closure structures are located in uplands only and would typically close during a flooding event to control tidal storm surge into the floodplain and prevent the tidal flooding of adjacent communities. Normal flow in the floodway would continue when the structures are open. These structures would be closed very infrequently, are located in uplands and would not alter currents and flows.

(b) Velocity — The closure structures would typically close during a flooding event to prevent upstream tidal surge and prevent the flooding of adjacent communities. Normal velocity would continue within the rivers and bay.

(c) Stratification — N/A.

(3) Normal Water Level Fluctuations — Closure gates are in upland areas only. Normal water level fluctuations would not be impacted by the Proposed Action.

(4) Salinity Gradients — No impacts are anticipated.

(5) Actions Taken to Minimize Impacts — No long-term adverse impacts to the overall water quality, water circulation, fluctuations, and salinity determinations are anticipated; therefore, no mitigative measures are proposed. Outfalls from the project pump stations will be designed to avoid disturbance of the sediments in the receiving waterbodies and avoiding associated water quality impacts from sediment resuspension, including increased turbidity and contaminant transport. Pump station discharge velocities would be addressed by adding energy dissipaters or stilling basins before the discharged water entered the river, thus eliminating the potential for sediment resuspension and effects on water quality.

c. Suspended Particulate/Turbidity Determination —

(1) Expected Changes — Short-term, localized increases in suspended particulate matter and turbidity may occur during construction of the Proposed Action and operation of pump stations. These would be minimized by adherence to State stormwater and water quality standards. No noticeable change in water quality is anticipated.

(2) Effects on Chemical and Physical Properties of the Water Column —

(a) Light Penetration — No impacts are anticipated.

(b) Dissolved Oxygen — No impacts are anticipated.

(c) Toxic Metals and Organics — No adverse effects are anticipated.

(d) Pathogens — N/A.

(e) Aesthetics — Minor, temporary impacts to water clarity may occur from construction.

(f) Others as Appropriate — N/A.

(3) Effects on Biota —

(a) Primary Production, Photosynthesis — Potential short-term disruption due to run-off during construction. No major impacts.

(b) Suspension/Filter Feeders — Potential short-term insignificant effects due to run-off during construction.

(c) Sight Feeders — Fishes and motile invertebrates are generally capable of avoiding areas of degraded water quality. No effects are anticipated.

(4) Action to Minimize Impacts — Impacts to wetlands and surface waters at Segments 2 and 3 would be minimized through the use of all applicable construction BMPs such as silt fencing to prevent sedimentation of areas adjacent and downstream of the work area.

d. Contaminant Determination — Testing of materials to be used for construction would be made prior to the initiation of the Proposed Action. Only clean material would be used. No in-water construction activities are proposed.

e. Aquatic Ecosystems and Organisms Determination —

(1) Effects on Plankton/Nekton - Nekton that do not leave the Project Area might experience short-term construction impacts due to turbidity. No significant effects on plankton are anticipated.

(2) Effects on Benthos — Some benthic species and some embryonic/ juvenile nekton may experience minor temporary effects during construction.

(3) Effects on Aquatic Food Web — No impacts are anticipated.

f. Effects on Special Aquatic Sites —Instream work will be limited to the unnamed tributary to Jasper Creek which flows into Newark Bay. Considering the urban characteristics of the surrounding land use the habitat value of the tributary is expected to be limited and project associated effects on special aquatic sites are expected to be minimal.

(1) Sanctuaries and Refuges — N/A.

(2) Wetlands — Any impacts to wetlands would be minimal and would be further quantified during the detailed design phase and authorized through an appropriate Section 404 permit.

(3) Mud Flats — The Proposed Action will not affect any mudflat areas.

(4) Vegetated Shallows — N/A.

(5) Bay Shoreline — N/A

(6) Riffle and Pool Complexes — N/A.

g. Threatened and Endangered Species — Five state listed species were identified within the Project Area including the following:

- Glossy ibis (*Plegadis falcinellus)* – Species of Special Concern
- Snowy egret (*Egretta thula)* – Species of Special Concern
- Little blue heron (*Egretta caerulea*) – Species of Special Concern
- Black crowned night-heron (*Nycticorax nycticorax*) – Threatened
- Peregrine falcon (*Falco peregrinus*) – Endangered

These species depend on shallows and open waters for foraging for prey species. Habitat that would be impacted by the project consists of common reed (*Phragmites australis*) dominated wetlands and a narrow tributary in the midst of an urban setting surrounded by major transportation corridors. These are low quality habitats that may provide minimal foraging opportunities for the identified species. Minor permanent impacts to these species are anticipated as a result of habitat conversion from wetlands and shallows to uplands; however, comparable foraging habitat is available in the vicinity of the project.

h. Other Wildlife — Short-term impact to food availability is anticipated in the Project Area during construction as species would avoid the Project Area. Incidental loss due to increased vehicular traffic during construction may also lead to animal mortality, resulting in minor temporary impacts. Considering the small overall footprint of the project in wetland areas, impacts to other wildlife are expected to be minor.

i. Actions to Minimize Impacts — The plan segments have been aligned within upland areas to the extent feasible to eliminate impacts to wetlands. Construction related impacts would be minimized through use of BMPs, including: erosion and sediment control measures and stormwater management during construction.

j. Proposed Disposal Site Determination — A proper disposal site will be determined once sediments are tested.

k. Mixing Zone Determination — N/A.

l. Determination of Compliance with Applicable Water Quality Standards —State water quality standards will not be exceeded by the Proposed Action.

m. Potential Effects on Human Use Characteristic —

(1) Municipal and Private Water Supply —N/A

(2) Recreational and Commercial Fisheries — No major recreational or commercial fisheries are located within the Project Area. Uses of these waters for recreational fishing is limited or prohibited due to NJDEP established Fish Consumption Advisories; both statewide and in the Newark Bay Complex and the tidal portion of the Passaic River where specific advisories apply to the Study Area (NJDEP, 2013).

(3) Water-Related Recreation —. No water-related recreational impacts are anticipated.

(4) Parks, National and Historical Monuments, National Seashores, Wilderness Areas, Research Sites, and Similar Preserves Determination of Cumulative Effects on the Aquatic Ecosystem — Segment 8 of the Proposed Action would be constructed in Minish Park. The park is located on the western bank of the Passaic River in Newark. Segment 8 would parallel Raymond Boulevard along the western edge of the park. Considering the position, height (maximum of~3.5 feet) and length (~300 feet) of this segment, there would be temporary adverse impacts to the park or park users due to access restrictions during the estimated six month construction for this section. No permanent negative impacts to the park are anticipated.

n. Determination of Secondary Effects on the Aquatic Ecosystem — No major impacts are anticipated.

III. Findings of Compliance or Noncompliance

a. No significant adaptations of the guidelines were made relative to this evaluation.

b. Numerous alternatives to the alleviation of the flooding problem in the Study Area were considered. However, none of these were practicable under the jurisdiction of Section 404(b)(1) guidelines.

c. The Proposed Action will not violate applicable state water quality standards or effluent standards.

d. Placement of material associated with the Proposed Action would not violate the Toxic Effluent Standards of Section 307 of the Clean Water Act.

e. The Proposed Action would have no significant adverse impact on endangered species or their critical habitats (Endangered Species Act of 1973).

f. The Proposed Action would have no impact on marine sanctuaries designated by the Marine Protection, Research, and Sanctuaries Act of 1972.

g. The Proposed Action would not result in significant adverse effects on human health and welfare, including municipal and private water supplies, recreational and commercial fishing, plankton, fish, shellfish, wildlife, and special aquatic sites. Significant adverse effects on aquatic ecosystem diversity productivity and stability, and recreational, aesthetic and economic values would not occur.

h. Appropriate steps to minimize potential adverse impacts of the discharge on aquatic systems include good engineering practices.

i. On the basis of the guidelines, the proposed construction site for the Proposed Action is specified as complying with the requirements of these guidelines.

IV. Conclusions

Based on the above evaluation, the Proposed Action is determined to be in compliance with the Section 404(b)(1) Guidelines, subject to appropriate and reasonable conditions, to be determined on a case-by-case basis, to protect the public interest.