

## **20.0 INTRODUCTION**

As described in the previous chapters of this environmental impact statement (EIS), with the exception of a *potential* for a significant adverse archaeological resources impact (to be ascertained during future field testing or excavation), and adverse impacts from the loss of approximately 3.6 acres of Waters of the U.S. and associated habitat due to the portion of the breakwaters above mean high water (MHW), the Proposed Actions would not result in any significant adverse impacts requiring mitigation. The Proposed Actions would incorporate several measures to minimize, avoid, or mitigate impacts as described below.

## **20.1 MEASURES TO MINIMIZE, AVOID, OR MITIGATE IMPACTS**

### **20.1.1 HISTORIC AND CULTURAL RESOURCES**

#### *ARCHAEOLOGICAL RESOURCES*

Pursuant to Section 106 and the City Environmental Quality Review (CEQR), should significant (e.g., National Register-eligible) archaeological resources be identified in sensitive areas through Phase 1B and Phase 2 archaeological investigations, disturbance or removal of such resources through construction would constitute an adverse effect under Section 106 and a significant adverse impact under CEQR. However, at this time only the *potential* for archaeological resources has been identified in certain locations on the project site. As set forth in the 2014 *CEQR Technical Manual*, a “site’s actual, rather than potential, sensitivity cannot be ascertained without some field testing or excavation.”<sup>1</sup> Therefore, it is conservatively assumed for purposes of Section 106 and CEQR that the proposed project could *potentially* result in an adverse effects and significant adverse impacts, with the actual presence of any significant resources to be determined through additional archaeological investigations and consultation as set forth in the Programmatic Agreement. However, should no significant archaeological resources be identified through Phase 1B or any subsequent Phase 2 archaeological investigations, and the New York City Landmarks Preservation Commission (LPC), the New York State Historic Preservation Office (SHPO) and the Tribal Nations concur with the conclusions of those investigations, no *actual* adverse effects or significant adverse impacts would occur.

As mandated by Section 106 of the National Historic Preservation Act of 1966 (NHPA), the Governor’s Office of Storm Recovery (GOSR) is participating in an ongoing consultation process with SHPO, LPC, and the Tribal Nations with respect to potential effects on archaeological and architectural resources. As part of this ongoing process, measures have been

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<sup>1</sup> *CEQR Technical Manual* (March 2014): page 9-10  
([http://www.nyc.gov/html/oec/downloads/pdf/2014\\_ceqr\\_tm/09\\_Historic\\_Resources\\_2014.pdf](http://www.nyc.gov/html/oec/downloads/pdf/2014_ceqr_tm/09_Historic_Resources_2014.pdf)).

explored to avoid, minimize, or mitigate any significant adverse effects to archaeological and architectural resources. Development of these measures is set forth in the Programmatic Agreement executed in May 2013 among the Federal Emergency Management Agency (FEMA), SHPO, the New York State Office of Emergency Management, the Delaware Nation, the Delaware Tribe of Indians, the Shinnecock Nation, the Stockbridge-Munsee Community Band of Mohicans, LPC, and Advisory Council on Historic Preservation (ACHP) and specifically outlined within Appendix D to the Programmatic Agreement, which pertains to the New York State's Community Development Block Grant-Disaster Recovery (CDBG-DR) program for activities in New York City.

The Programmatic Agreement describes the measures to be implemented and the consultation that is required during the project's design process, to avoid, minimize, or mitigate adverse effects of the project on historic and archaeological resources. GOSR would implement the various provisions of the Programmatic Agreement and would continue to consult with the consulting parties regarding the identification of the potential for the Proposed Actions to impact archaeological resources and GOSR would perform additional archaeological investigations as required. If significant archaeological deposits are identified and impacts on such deposits cannot be avoided, these would be considered unavoidable adverse impacts. GOSR would identify and implement any additional measures that may be required to mitigate adverse effects on archaeological resources in accordance with applicable Project Review provisions in the Programmatic Agreement.

#### *ARCHITECTURAL RESOURCES*

None of the project alternatives would result in an adverse effect on any of the architectural resources in the Breakwaters APE, the Shoreline APE, the Water Hub Potential Location 2 APE, or the Indirect Effect APE. Should either the Biddle House Option or the Rutan-Beckett House Option be selected for locating the Water Hub programming, consultation would continue with SHPO, LPC, and the consulting parties regarding any proposed alterations to the historic resource. In addition, because the Henry Hogg Biddle House is a New York City Landmark (NYCL), if the Biddle House Option is selected for the Water Hub, NYC Parks would consult with LPC under the New York City Landmarks Preservation Law regarding any proposed alterations to this NYCL. LPC would review the proposed alterations and, upon approval of the proposed alterations, would issue a Binding Commission Report summarizing LPC's findings. As the anticipated alterations to either building would be limited to rehabilitation and adaptive reuse changes, no adverse effects are anticipated.

#### **20.1.2 HAZARDOUS MATERIALS**

Although no significant potential for adverse impacts related to hazardous materials would be anticipated given the longstanding recreational parks use of the project site, the potential would be further minimized by incorporating best practices into the project's construction and incorporating the following protocols into the Proposed Actions (via the construction documents and specifications):

- If evidence of contaminated soil/sand (e.g., stains or odors) is encountered, these materials (and all other materials requiring off-site disposal) would be segregated and disposed of in accordance with applicable federal, state and local regulations. If any underground storage tanks (USTs) are encountered, they would be properly assessed, closed and removed in accordance with state and local regulatory requirements (including New York State

Department of Environmental Conservation [NYSDEC] tank registration and spill reporting requirements). Any materials intended for off-site disposal would be tested in accordance with the requirements of the receiving facility. Transportation of these materials would be in accordance with federal, state and local requirements covering licensing of haulers and trucks, placarding, truck routes, manifesting, etc.

- Dewatering is not anticipated to be required. Should it be needed, testing would be performed to ensure compliance with proper regulatory discharge requirements (New York City Department of Environmental Protection (NYCDEP) for discharge to combined sewers or NYSDEC requirements for discharges to surface water either directly or via an outfall). If required by the regulatory permit/approval process, pre-treatment would be conducted prior to the discharge.
- For Potential Location 2 of the Water Hub, rehabilitation plans would follow applicable regulatory requirements to address any asbestos-containing materials (ACM), polychlorinated biphenyls (PCB)-containing material, or lead-based paint (LBP). Similar materials and creosote-treated wood could be encountered during excavation, especially where there were previously structures. Any such materials would be properly characterized, managed and disposed of in accordance with applicable regulations.

### 20.1.3 NATURAL RESOURCES

The Proposed Actions would not result in significant adverse impacts to terrestrial natural resources within the study area. The loss of approximately 3.6 acres of waters of the U.S. and associated habitat due to the portion of the breakwaters above MHW would result in adverse impacts. Measures to mitigate this impact, as well as measures incorporated into the Proposed Actions to minimize or avoid adverse impacts to natural resources include:

- Segregating any contaminated soil/or sand, creosote-treated wood or other contaminants encountered during construction and disposing of these materials in accordance with applicable federal, state and local regulations.
- Groundwater recovered during dewatering would be tested and treated in accordance with NYSDEC requirements prior to discharge to Raritan Bay.
- Implementing erosion and sediment control measures and stormwater management measures in accordance with the Stormwater Pollution Protection Plan (SWPPP) prepared as required under the New York State Pollutant Discharge Elimination System (SPDES) General Permit GP-0-15-002 for Stormwater Discharges from Construction Activity.
- Incorporating bioswales and other green infrastructure stormwater management measures to allow infiltration of runoff and recharge to groundwater.
- Relocating any eastern box turtles encountered in the area of disturbance prior to or during the construction of earthen berm to an area beyond the silt fencing to avoid direct impacts.
- Scheduling the construction of the project elements requiring tree clearing outside the early May through July primary bird breeding season, to the extent practicable. Should construction activities requiring tree clearing be necessary during April or August (i.e., the beginning and end of the breeding period), GOSR will coordinate with the USFWS with respect to conducting active nest surveys that may support tree cutting during this period. These surveys would be focused on the presence of active nests, eggs, or young in trees targeted for removal. In the event that active nests, eggs, or young are not present, GOSR will inform USFWS of the results before commencing any tree cutting.

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- Maintaining landscaped areas within the Shoreline Project and at the Water Hub using Integrated Pest Management (IPM) techniques.
- In the event that piping plovers or other beach-nesting birds are found to nest on the beach, NYC Parks would enact appropriate management and protection protocols.
- In the event that the Proposed Actions result in an increase in red knot along the beach within Conference House Park in response to greater horseshoe crab spawning activity, NYC Parks would enact management and protection protocols in consultation with USFWS and any other relevant regulatory agencies.
- Employing measures to minimize impacts to the 0.8-acre tidal wetland during construction of the Shoreline Project such as marsh mats or low ground-pressure equipment, and installation of erosion and sediment control measures in accordance with the SWPPP.
- In consultation with NYSDEC and the United States Army Corps of Engineers (USACE), designing the portion of the eco-revetment that crosses through the 0.8-acre tidal wetland to allow access across the wetland while minimizing adverse effects to the tidal wetland.
- Enhance the 0.8-acre tidal wetland through increased tidal exchange with Raritan Bay, removal of the unpermitted sand bridge, removal of phragmites, and re-establishment of native saltmarsh plant species. Existing native salt marsh vegetation that is currently within the wetland would be retained to the extent possible, and individual plants and seeds would be collected for preservation and replanting. Additional native saltmarsh plants would be re-established through seeding or planting plugs to supplement the native saltmarsh vegetation that already occurs in the wetland. Post-construction monitoring would be conducted in accordance with the New York State Salt Marsh Restoration and Monitoring Guidelines.
- Planting native coastal plant species within the Shoreline Project and Water Hub (if located on-shore).
- Developing protection programs (e.g., transplant, and seed collection and propagation) in coordination with New York City Department of Parks and Recreation (NYC Parks) and New York State Natural Heritage Program (NYSNHP) for populations of the state-listed plant species that would have the potential to be affected by construction of the Shoreline Project: northern gamma grass (endangered), and dune sandspur (threatened).
- Designing the Breakwaters Project to reduce wave energy at the shoreline, and reduce, prevent or reverse shoreline erosion, without adversely affecting tidal flushing along the shoreline within the NYSDEC littoral zone tidal wetland.
- Incorporating ecological enhancements into the design of the breakwater segments through the creation of three-dimensional hard/rocky structured reef-like habitat with reef streets and eco-enhanced concrete units that would increase the quantity and diversity of the aquatic habitats available for habitat forming plants and invertebrates found in Raritan Bay.
- Maintaining at least 2 feet of clearance from the bottom of the Bay, or work only at tide levels sufficient to keep construction barges and vessels off the bay.
- Mitigating for the loss of approximately 3.6 acres of Waters of the U.S. and associated habitat due to the portion of the breakwaters above MHW through measures that may include the purchase of available credits from an approved mitigation bank, and restoration/enhancement of Waters of the U.S. within the Raritan Bay watershed in New York.

- Use of best management practices to minimize the release of suspended sediments during sand placement, including placement of the material above MHWS at low tide where possible and using turbidity barriers where feasible.
- Timing the placement of sand for the shoreline restoration to avoid the spawning season for horseshoe crabs (restricted from April 15 through July 15). The material used for restoration would be similar in composition to existing sand substrate at the beach and within Conference House Park.
- Timing the construction of the breakwaters and shoreline restoration to minimize adverse effects to winter flounder early life stages and EFH (restricted from January 1 through May 31).
- Construction of the breakwater segments sequentially, such that only a small footprint of the Bay is affected at a time. As each segment is completed, habitat forming organisms would begin to colonize the structure, providing foraging opportunities for predator species.
- Development of a post-construction monitoring plan and adaptive management plan in consultation with NYSDEC, National Marine Fisheries Service (NMFS) and USACE to assess use of breakwaters segments by target species groups and fish and benthic communities adjacent to the breakwaters structures.
- Development of a post-construction monitoring and adaptive management plan to assess the structural integrity and condition of breakwater structures, their effectiveness at attenuating storm waves and reducing shoreline erosion, along with establishing what corrective measures may be needed should an issue arise and when such corrective measures should be implemented. Future determination of any need for modification(s) to the breakwater structures would be in accordance with the Adaptive Management Plan developed for the project.
- To minimize human sea mammal interaction, signage indicating that such interaction is prohibited will be installed near the breakwaters in consultation with State and Federal Agencies.

#### 20.1.4 SEWER AND WATER INFRASTRUCTURE

The Proposed Actions would not result in significant adverse impacts to wastewater and stormwater infrastructure within the study area; therefore, no mitigation is needed for the Proposed Actions. Measures incorporated into the Proposed Actions to minimize adverse impacts to stormwater infrastructure include:

- Implementing erosion and sediment control measures and stormwater management measures in accordance with the SWPPP prepared as required under the SPDES General Permit GP-0-15-002 for Stormwater Discharges from Construction Activity.
- Incorporating permeable pathways where practicable and bioswales and other green infrastructure stormwater management measures to allow infiltration of runoff.
- Continuing to coordinate with NYCDEP to ensure the Breakwaters Project does not interfere with the current functionality of the existing outfalls maintained by NYCDEP.
- Incorporating measures to protect the stormwater outfall in Raritan Bay at the end of Loretto Street during the placement of sand for shoreline restoration.
- Incorporating any measures necessary, developed in consultation with NYCDEP, to protect the stormwater outfalls at the end of Loretto Street, Sprague Avenue, Joline Avenue, and

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Bedell Avenue, from the physical impact of the additional fill and associated additional loads that would be placed on these outfalls. \*