

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), the Proposed Actions would not result in any significant adverse impacts requiring mitigation. However, the Proposed Actions would incorporate several measures to minimize or avoid impacts as described below.

20.1 MEASURES TO MINIMIZE OR AVOID 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.”¹ 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 explored to avoid, minimize, or mitigate any significant adverse effects to archaeological and

¹ *CEQR Technical Manual* (March 2014): page 9-10
(http://www.nyc.gov/html/oec/downloads/pdf/2014_ceqr_tm/09_Historic_Resources_2014.pdf).

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, Shoreline 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. 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. In addition, should the Rutan-Beckett House be determined State/National Register-listed (S/NR-eligible), consultation regarding proposed alterations to this building would also be undertaken with SHPO. Should either Potential Location 2—the Biddle House Option or the Rutan-Beckett Option—be selected for the Water Hub, consultation with SHPO would be undertaken regarding any proposed alterations to the historic resource. 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 aquatic and terrestrial natural resources within the study area; therefore, no mitigation is needed for the Proposed Actions. Measures incorporated into the Proposed Actions to minimize 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 permeable pathways where practicable and 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 earthen berm outside the early May through July primary bird breeding season, to the extent practicable.
- Maintaining landscaped areas within the Shoreline Project and at the Water Hub using Integrated Pest Management (IPM) techniques.

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- 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.
- Designing the wetland bridge connecting the earthen berm to the hybrid dune to minimize adverse impacts to the 0.8-acre tidal wetland through the use of a grated surface that will allow light to penetrate to the plants below, and limiting the width to only 8 feet.
- In consultation with NYSDEC and the United States Army Corps of Engineers (USACE), designing the portion of the path 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 remaining portion of the 0.8-acre tidal wetland through increased tidal exchange (e.g., tidal sluice gates).
- Planting native coastal plant species within the Shoreline Project and Water Hub.
- 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.
- Timing the placement of sand for the shoreline restoration to avoid the peak spawning season for horseshoe crabs (late May to early June).
- Timing the construction of the breakwaters and shoreline restoration to avoid winter flounder spawning (early January through late May).
- Development of a post-construction monitoring 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 and at a minimum would need to consider the following:
 - results of regular monitoring of wave attenuation and shoreline resilience being achieved by the Living Breakwaters and Shoreline Project working in tandem, as will be required by NYSDEC and USACE as a permit condition;

- potential impacts to sediment transport and other secondary impacts to the shoreline that would have the potential to result from modifications made to the breakwater system; and
- potential direct and indirect impacts to aquatic biota associated with habitat loss and modification that would result from the expansion of the breakwater footprint that would be required to raise the heights of the breakwater structures.

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.
- Designing the Breakwaters Project to reduce wave energy at the shoreline, and prevent or reverse shoreline erosion, without resulting in sedimentation of stormwater outfalls. The Breakwaters Project will be designed to avoid interfering in 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 measures, developed in consultation with NYCDEP, to protect the stormwater outfalls at the end of Loretto Street, Sprague Avenue, Joline Avenue and Bedell Avenue, from the physical impact of the additional fill and associated additional loads that would be placed on these outfalls. *