

8.0 INTRODUCTION

This chapter assesses the potential hazardous materials impacts of the Proposed Actions by identifying potential issues of concern that could pose a hazard to workers, the community, and/or the environment during or after development of the project. As described in Chapter 1, “Purpose and Need and Alternatives,” the Proposed Actions would include the implementation of one or more proposed initiatives intended to enhance coastal and social resiliency along the Tottenville shoreline of the South Shore of Staten Island. These initiatives include the Living Breakwaters Project (Breakwaters Project) and the Tottenville Shoreline Protection Project (Shoreline Project). As part of Alternatives 2 and 3, the Breakwaters Project would include off-shore installation of a breakwater system along the Tottenville Shoreline, an area of proposed shoreline restoration, and on-shore components including a Water Hub and associated landscaping. As described in Chapter 1, “Purpose and Need and Alternatives,” one of two potential on-shore locations under consideration could be selected for siting the Water Hub¹—Potential Location 1 would be in the vicinity of the southern terminus of Page Avenue (involving the construction of a new structure). Potential Location 2 would be in the north-western portion of Conference House Park (involving the rehabilitation and adaptive reuse of an existing New York City Department of Parks and Recreation [NYC Parks] building). As part of Alternatives 2 and 4, the Shoreline Project would consist of a series of shoreline protection measures—including an earthen berm, a hybrid dune/revetment system, eco-revetments, a raised edge (revetment with trail), wetland enhancement, and native plantings—from approximately Carteret Street to Page Avenue.

This Chapter focuses on the upland portion of the Proposed Actions; the in-water portion is addressed in Chapter 9, “Natural Resources.” It is anticipated that some subsurface disturbance would be required for the Proposed Actions, e.g., for the below existing grade portions of the Shoreline Project and for the potential construction of the Water Hub (e.g., for foundations and utilities if it is sited at Potential Location 1 or for construction or improvement of pathways/stairways to the water if it sited at Potential Location 2). Siting the Water Hub activities at Potential Location 2 would involve the rehabilitation and adaptive reuse of an existing NYC Parks building which could potentially include asbestos, lead-based paint (LBP), or polychlorinated biphenyl (PCB) in building materials.

¹ Subsequent to the issuance of the DEIS, an additional Water Hub location has been included for consideration. Potential Location 3 would involve a “floating” Water Hub—a vessel operated by a non-profit organization (e.g., BOP). The vessel would visit the breakwater project area periodically for education and monitoring and would be docked at existing facilities in the City.

8.1 PRINCIPAL CONCLUSIONS

Although the assessment did not reveal a significant likelihood for subsurface hazardous materials, with the incorporation of standard, appropriate protocols (described below), no significant adverse impacts related to hazardous materials would result from subsurface disturbance associated with Alternatives 2, 3, and 4. To the extent rehabilitation of existing structures (or excavation) would disturb materials containing asbestos or PCBs or covered with LBP, the potential for impacts will be avoided by licensed environmental professionals conducting these construction activities in compliance with existing regulatory requirements and best practices. These materials would then be abated as required by law prior to the start of construction. Following construction, there would be no further potential for significant adverse impacts.

8.2 METHODOLOGY

8.2.1 STUDY AREA

To identify potential sources of subsurface hazardous materials, an assessment was conducted including: a review of historical land use maps and aerial photographs; prior reports; and a review of State and federal regulatory databases relating to use, generation, storage, treatment and/or disposal of hazardous materials (given the extent of the project area.). The databases searched were in accordance with the American Society for Testing and Materials (ASTM) Designation E 1527-13 *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* (ASTM E1527-13) although given the extent of the study area the off-site database searches were limited to a 1/8-mile distance from the proposed construction areas (this distance exceeds the 400 feet distance recommended for urban areas in Section 310 of Chapter 12 of the *CEQR Technical Manual*). In addition, to address the potential dangers associated with locating U.S. Department of Housing and Urban Development (HUD)-assisted projects near hazardous facilities which store, handle, or process hazardous substances of a flammable or explosive nature, an analysis per 24 CFR Part 51, Subpart C was conducted.

8.3 EXISTING CONDITIONS

The existing conditions of the project area vary along the shoreline, with certain areas bounded by upland vegetated slopes (in the vicinity of Wards Point to east of Carteret Street), with temporary dunes further east. East of these dunes (east of Sprague Avenue), are manmade structures, i.e., riprap armoring, concrete, masonry and timber walls. Wooded areas abut the eastern and western portions of the project area. Upland areas generally consist of residential development, with some interspersed wooded areas, including along the western portion of the project area (generally between Carteret and Brighton Streets, and east of Sprague Avenue). Potential Location 2 for the proposed Water Hub is characterized by the change in elevation from the shoreline to the existing buildings, one of which would be rehabilitated if this location were to be selected. This location may also require construction or improvement of existing pathways/stairways to the water.

Based on U.S. Geological Survey mapping (Arthur Kill, NY Quadrangle dated 2013 and Keyport, NJ Quadrangle dated 2014), the project site elevation is generally less than 10 feet above mean sea level (with the exception of area of Potential Location 2 for the proposed Water Hub). Previous reports suggest subsurface material includes deposits characterized as loose,

unconsolidated sand, gravel, cobbles, and boulders associated with a glacial terminal moraine. Bedrock is anticipated to be greater than 250 feet below the mudline. Groundwater is anticipated to be first encountered at an elevation at or near the high tide level and is likely tidally influenced.

8.3.1 DATABASE REVIEW

Environmental Data Resources, Inc. of Shelton, Connecticut was contracted to obtain information regarding the regulatory status of the project area and the surrounding area. This information included records from databases maintained by the United States Environmental Protection Agency (USEPA) and New York State Department of Environmental Conservation (NYSDEC) in general conformance with ASTM Standard E1527-13 (*Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Practice*), although as noted above the search radii for off-site properties was limited to 1/8-mile.

The review (see **Appendix A**, Figures 6a and 6b) identified only closed-status spill listings (i.e., cleaned up to the satisfaction of NYSDEC) with addresses indicating they were potentially within or, more likely, adjacent to the project area including two listings associated with abandoned drums near the intersection of Surf Avenue and Loretto Street (Spill No. 9908641, reported in 1999, and Spill No. 9413285, reported in 1995) which were closed by NYSDEC within the same year of issuance and several closed-status spills related to releases within the Raritan Bay, e.g., from sewer outfalls. The databases also identified: one RCRA Generator/Transporter (with no associated violations) and two additional closed-status spills within 1/8-mile. The regulatory database search for Potential Location 2 of the Water Hub identified only two closed-status spills within 1/8-mile. None of these spills or facilities are anticipated to represent a significant environmental concern to the project area (including Potential Location 2 of the Water Hub).

8.3.2 HISTORICAL SANBORN MAP AND AERIAL PHOTOGRAPH REVIEW

Historical Sanborn® fire insurance maps and aerial photographs indicated that the project area shoreline circa 1937 and 1962 included sparse residential and recreational structures (boathouses, fishing clubs, camps, public pavilions, etc.), with several wooden and concrete piers east of Sprague Avenue between. By 1977, the majority of the area west of Sprague Avenue was undeveloped. Denser residential development was present upland of the central and eastern portions of the project area in the 1980s and a sewage treatment plant was located one block north of the shoreline, east of Loretto Street, by 1986. Additional residential development was shown on blocks north of the project area by the early 2000s. No uses indicative of petroleum contamination (such as gas stations) were identified within or near the project area; though it is possible that buried foundation elements and debris from former structures could include underground storage tanks (USTs), PCB-containing materials, LBP, asbestos-containing materials (ACM), and/or creosote-treated wood.

8.3.3 NEARBY HAZARDOUS OPERATIONS

An evaluation of whether there were any nearby facilities of concern, closer than the Acceptable Separation Distances (ASD) per *24 CFR Part 51, Subpart C—Siting of HUD-Assisted Projects Near Hazardous Operations Handling Conventional Fuels or Chemicals of an Explosive or Flammable Nature* was conducted. For calculating the Acceptable Separation Distance (ASD), the calculator at <https://www.hudexchange.info/environmental-review/asd-calculator/> was used. The findings of this evaluation indicated the project site (including Potential Location 2 of the Water

Hub) is located beyond the minimum acceptable separation distance from registered tanks regulated under *29 CFR 51, Subpart C*, and as such no further analysis is required.

8.3.4 PREVIOUS REPORT REVIEW

As part of the Shoreline Project, fill material that had previously been placed without a permit from the shoreline of Conference House Park south of Tricia Way, is proposed to be removed and restored. This will result in the excavation and removal of about 2,290 cubic yards of the existing fill along the shoreline within an approximately 17,370-square-foot-area (0.4 acres).

A soil boring investigation within this area was conducted which included the advancement of 6 borings within the area of the fill material (see Appendix G).² The investigation was conducted by Preferred Environmental Services, on behalf of Tectonic Engineering, under their contract assignment with and in accordance with a scope of work agreed with the Bureau of Environmental Review and Assessment, Governor's Office of Storm Recovery. Boring logs indicated fill material, generally consisting of well-to-poorly-graded gravel, gravel-sand-silt mixtures, crushed rock, and very little intermixed brick, down to approximately 4 to 8 feet below grade, underlain by silt and clay to the terminal boring depth of approximately 10 feet. No field evidence (i.e., odors, staining or elevated photoionization detector readings) of contamination was noted.

Laboratory analysis of 15 grab samples was performed for volatile organic compounds (VOCs); and 6 composite samples were analyzed for semi-volatile organic compounds (SVOCs), pesticides, polychlorinated biphenyls (PCBs), metals (including hexavalent chromium and cyanide). The analytical results showed no exceedances of the NYSDEC Soil Cleanup Objectives (SCOs) for residential use or for the protection of groundwater (6 NYCRR 375-6.4[b][1] and 375-6.5), with the exception of acetone in 6 of the 15 VOC samples, which exceeded the protection of groundwater SCO, but which is a typical laboratory contaminant and thus may have not actually been present in the samples. In addition to this exceedance, there were also exceedances of the more restrictive "Unrestricted SCOs" for the metals lead and nickel, and for the pesticide DDT and its metabolites DDE and DDD. Based on these analytical results, this material could likely be reused for potential upland filling required for the Proposed Actions, subject to NYSDEC approval. It should be noted that the above samples were all collected from south of the Surf Avenue right-of-way (which extends almost to the houses to the north) and thus comprises the majority of the area of fill to be removed. Testing of the material from this area would be required to determine its suitability for reuse for potential upland filling. This would also be subject to NYSDEC approval.

8.4 EFFECTS ASSESSMENT

8.4.1 ALTERNATIVE 1—NO ACTION ALTERNATIVE

The No Action alternative assumes that no new structural risk reduction projects or maritime habitat restoration projects will be implemented in the project area, and therefore no extensive ground disturbance in the project area is expected to occur. Currently, there are no hazardous materials concerns associated with the project site, as the upland portions of the site are utilized

² Report on Soil Investigation NYC Parks—Conference House Park, Fill Area—Tricia Way, Staten Island, NY, by Preferred Environmental Services, August 2016.

as an open New York City park. Likewise, there would be no significant concerns with respect to the No Action Alternative.

8.4.2 ALTERNATIVE 2—PREFERRED ALTERNATIVE—THE LAYERED TOTTENVILLE SHORELINE RESILIENCY STRATEGY: LIVING BREAKWATERS AND TOTTENVILLE SHORELINE PROTECTION PROJECT (LAYERED STRATEGY)

As described in Chapter 1, “Purpose and Need and Alternatives,” the Layered Strategy consists of the implementation of two individual projects: the Living Breakwaters Project and the Tottenville Shoreline Protection Project.

The in-water portion of the Breakwaters Project (including sediments) is addressed in Chapter 9 “Natural Resources.” With respect to the on-shore elements of the Breakwaters Project and the Shoreline Project, given the above assessment, significant contamination of the project area’s soil or the groundwater or potential vapor intrusion concerns is not anticipated. Nevertheless, the possibility of localized areas of residual contamination related to undocumented releases, the former structures, the fill materials (the sources of which are not documented), etc. cannot be ruled out. However, implementation of the proposed projects, although they would entail excavation and construction activities that could potentially disturb any hazardous materials that are present, would not lead to conflicts with the intended utilization of the property, provided standard construction protocols, discussed in more detail below, are followed.

Alternative 2 would require excavation for construction of the shoreline elements of the Shoreline Project and for the construction of Potential Location 1 of the Water Hub (e.g., for foundations and utilities). Although not anticipated, such activities could disturb ACM, LBP, and PCB-containing materials and/or creosote-treated wood from buried foundations or debris from former structures.

For Potential Location 2 of the Water Hub, construction would require rehabilitation of one of the existing buildings, which, based on their ages, could disturb any ACM, LBP, and PCB-containing materials and potentially some limited subsurface disturbance associated with building or improving the path/stairway down to the water’s edge. Prior to the commencement of construction, the existing building would receive a pre-construction survey for the presence of these materials, and the materials would then be abated with federal, state, and local laws by licensed, certified environmental abatement professionals.

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 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 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 ACM, PCB-containing material, or 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.

With the implementation of these protocols, no significant adverse impacts related to hazardous materials would result from construction activities related to Alternative 2. Following construction, there would be no further potential for significant adverse impacts.

8.4.3 ALTERNATIVE 3—BREAKWATERS WITHOUT SHORELINE PROTECTION SYSTEM

This alternative would include the proposed in-water breakwaters, proposed shoreline restoration, the proposed Water Hub and associated landscape elements. This alternative does not include the proposed elements of the proposed Shoreline Project.

While Alternative 3 would result in much more limited ground disturbance than Alternative 2, in the on-shore areas requiring construction, the protocols outlined above would be incorporated into the Proposed Actions.

8.4.4 ALTERNATIVE 4—SHORELINE PROTECTION SYSTEM WITHOUT BREAKWATERS

This alternative assumes the proposed shoreline protection system in place, but without the proposed breakwaters, shoreline restoration, Water Hub and associated landscape elements. As with Alternatives 2 and 3, in the on-shore areas requiring construction, the protocols outlined above would be incorporated into the Proposed Actions.

8.5 MINIMIZATION AND MITIGATION OF IMPACTS

With the incorporation of standard, appropriate protocols (described above), no significant adverse impacts related to hazardous materials would result from construction activities related to the Proposed Actions. Following construction, there would be no further potential for significant adverse impacts. *