

3.6 Hazardous Materials

3.6.1 Introduction

The Proposed Project would result in the construction of a flood barrier system, which is a substantial infrastructure project involving the disturbance of soil, groundwater, and sediment. This chapter examines the potential for the presence of contaminated or hazardous materials in the soil, groundwater, and sediment in the Project Area (defined in Chapter 1.0, “Project Description,” as the area of direct physical disturbance by the Proposed Project) or the Study Area (within 400 feet of the Project Area) to assess whether the Proposed Project may potentially result in increased exposure of the public or the environment to contaminated or hazardous materials. This analysis also evaluates whether such potential increased exposure may lead to significant public health impacts or environmental impacts that require mitigation.

This analysis was prepared in accordance with the methodologies of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 (42 USC § 9601 et seq.); the Resource Conservation and Recovery Act (RCRA) of 1976 (42 USC § 6901 et seq.); the Occupational Safety and Health Act (OSHA) of 1970 (29 USC § 651 et seq.); and the Toxic Substances Control Act (TSCA) of 1976 (15 USC § 2601 et seq.). Additionally, the New York State Hazardous Waste Management Program (State implementation of the Federal RCRA program) codified as 6 NYCRR Parts 370, 371, 372, 373, 374, and 376 (the “Part 370 Series”) was reviewed for applicability to the Proposed Project.

3.6.2 Principal Conclusions

To develop an understanding of the existing soil and groundwater conditions in the Project Area, and to provide information on potential disposal or reuse options for excavated material, environmental assessments and investigations were performed in 2021 through 2023 to identify evidence of environmental contamination and the presence of hazardous materials. Investigations performed in 2021 and 2022 (report dated August 2022) identified soil and groundwater contamination consistent with the placement of historic fill throughout the Project Area. In addition, vinyl chloride was detected above New York State standards in groundwater sampled in Reach 1. A supplemental investigation of soil and groundwater was conducted in 2023 to provide additional information regarding environmental conditions. In addition, an environmental investigation of river sediment was conducted in February and March 2024. A draft report, dated June 2024, identified soil, groundwater, and sediment contamination consistent with the findings of the August 2022 report. The reports summarizing the results of the 2021-2022 and 2023 soil and groundwater investigations, and 2024 sediment contamination, are provided in **Appendix F**.

Dredging of approximately 5,000 cubic yards (CY) of sediment will be required in two areas of Reach 5. A Sediment Sampling and Analysis Plan (SSAP)¹, which details procedures for sampling and characterizing

¹ Sediment Sampling and Analysis Plan North/West Battery Park City Resiliency Project, Arcadis U.S., Inc. March 29, 2024.

sediment anticipated to be disturbed, was prepared for this Proposed Project, and was approved by New York State Department of Environmental Conservation (NYSDEC) on April 2, 2024. The SSAP will be implemented prior to performing any dredging activities. The plan proposed sampling sediment cores from dredged areas and surface water from the Hudson River. Sediment samples will be analyzed for NYSDEC Part 375 TCL VOCs, SVOCs, pesticides, PCBs, TAL metals as well as physical properties. Surface water samples will be analyzed for total suspended solids, select heavy metals, petroleum-related compounds, PAHs, and polychlorinated biphenyls (PCBs). Sediment samples will be collected both prior to construction activities and following the removal of the existing platforms. Baseline water quality samples will be collected prior to construction, and water monitoring will be continued during construction. A copy of the SSAP is included in Appendix F.

Upland construction of the Proposed Project would involve disturbance of soil, groundwater, and sediment, creating temporary exposure pathways to potentially contaminated soil, groundwater, and sediment that may result in direct contact, inhalation, or ingestion of contaminated materials during the Proposed Project's construction by construction workers or the surrounding community. Procedures and protocols to avoid these impacts during construction are detailed in a project-specific Remedial Action Plan (RAP) and Construction Health and Safety Plan (CHASP), which are included in **Appendix F**. NYCDEP provided comments on the RAP and CHASP in a letter dated August 8, 2024 (which is provided in Appendix F). In the event that the results of the SSAP would affect the remedial strategies in the RAP, the RAP and CHASP would be updated accordingly, and the final RAP and CHASP would be provided to the New York City Department of Environmental Protection (NYCDEP) for review and approval prior to the start of construction.

The RAP summarizes contaminants identified during soil, sediment, and groundwater investigations which may be encountered during construction, and the means and methods proposed to mitigate exposure during both the construction and operational phases of the Proposed Project. Specifically, the RAP addresses requirements for soil and sediment excavation management and reuse (e.g., temporary storage, handling, transport, and disposal); material reuse and import; fluids management; proposed construction of engineering controls; stormwater pollution prevention; odor and dust controls; and community air monitoring, and includes guidance on actions in the event unanticipated contamination is encountered. The CHASP, included as an appendix to the RAP, provides a plan for minimizing potential health and safety hazards and exposure during construction from any contamination identified in the RAP.

In addition to the RAP and the CHASP, additional plans may be developed, as needed, prior to starting construction activities, such as waste management plans and construction dewatering plans that would detail specific means/methods of material extraction and handling, anticipated quantities of extracted materials, sampling/monitoring requirements, approved waste transporters and facilities, and required permits. Since soil disturbance is anticipated to meet or exceed 1 acre, a Stormwater Pollution Prevention Plan (SWPPP) would also be prepared that addresses Best Management Practices (BMPs) to prevent erosion and sediment run-off caused by construction activities and the resulting impacts on waterways such as the Hudson River. As required for projects within New York City Municipal Separate Storm Sewer System (MS4) areas, the SWPPP will be submitted to NYCDEP for review and approval, and a copy of NYCDEP's acceptance will be submitted with the application for coverage under the NYSDEC's State

Pollutant Discharge Elimination System (SPDES) general construction permit. In addition, since the temporary storage of construction-related chemicals is expected, the construction contractor will need to establish procedures to prevent any chemical releases from impacting soil or groundwater (including, but not limited to, proper storage, inspections, and spill response).

By implementing the plans discussed above and complying with all city, state, and federal procedures and regulations governing the handling, excavation, stockpiling and transport of contaminated or hazardous soil, the management of groundwater and solid waste, the handling of construction-related materials and chemicals, and implementing BMPs and response measures, the Proposed Project would not result in any significant adverse impacts with respect to contaminated or hazardous materials during construction. There would also be no impacts during the operational phase of the Proposed Project.

3.6.3 Existing Conditions

To understand the current site conditions, research and investigations were performed to determine the potential presence of soil and groundwater contamination, hazardous materials, and regulated waste in the Project Area and in the Study Area. These reports include a Corridor Environmental Site Assessment² (Corridor ESA), a Subsurface Environmental Site Investigation Report³ (Phase II ESI), a supplemental Environmental Sampling Report⁴, and a Hazardous Materials Investigation⁵ Report. The Corridor ESA was prepared in general accordance with the Phase I ESA Process (ASTM E1527-13 Standard Practice) and included a review of regulatory records, historical Sanborn and topographic maps, historical aerial photographs, and a site inspection, all summarized in the Corridor ESA. The Phase II ESI was performed for the Project Area in accordance with the Phase II ESA Process (ASTM E1903-19 Standard Practice) and the Battery Park City Authority-approved ESI Work Plan (Matrix November 2021). Field activities for the ESI were performed between November 2021 and May 2022. The investigation included a geophysical survey and soil and groundwater sampling from environmental soil borings, geotechnical soil borings, temporary monitoring wells, and permanent monitoring wells. Soil vapor sampling was not performed since there are no proposed occupiable structures in the Project Area. Field activities for the 2024 Supplemental Environmental Sampling Report were performed between July 2023 and March 2024, and included the collection of additional environmental soil samples from geotechnical borings, collection of groundwater samples from permanent monitoring wells, and collection of sediment samples from geotechnical borings. The Hazardous Materials Investigation report summarizes investigative activities performed in January 2022 and assesses the potential for asbestos-containing materials (ACM), lead-containing paint (LCP), lead-based paint (LBP), PCBs, and other hazardous/regulated materials in on-site

² Environmental Findings Report, Corridor Environmental Site Assessment, North/West Battery Park City Resiliency Project, Matrix New World Engineering, Land Surveying, and Landscape Architecture, P.C. February 2022.

³ Subsurface Environmental Site Investigation Report, North/West Battery Park City Resiliency Project, Matrix New World Engineering, Land Surveying, and Landscape Architecture, P.C. August 2022.

⁴ Environmental Sampling Report, North/West Battery Park City Resiliency Project, Arcadis U.S. Inc., June 2024.

⁵ Hazardous Materials Investigation Report, North/West Battery Park City Resiliency Project, Matrix New World Engineering, Land Surveying, and Landscape Architecture, P.C., February 2022.

structures (e.g., pavement, walls, and stairs). The results of these assessments and reports are summarized below, and the full reports are provided in **Appendix F**.

3.6.3.1 Phase I ESA

The Corridor ESA investigated the potential for environmental concerns and identified Recognized Environmental Conditions (RECs) in the Project Area and surrounding Study Area. ASTM Standard E1527-13 defines a REC as “the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment.” The Corridor ESA identified two RECs: the placement of non-indigenous (historic) fill throughout the Project Area, and several historic and current dry-cleaning facilities within the Study Area.

A review of historical maps and aerial photographs identified the placement of fill material between the northern end of Reach 3 through Reach 7 between 1967 and 1992, when land was reclaimed by extending the bulkhead westward and filling the Hudson River. The placement of historic fill is also expected throughout Reaches 1 and 2, as coastal and low-lying areas of the City were commonly filled or graded. Historic fill in New York City is typically characterized by contaminated soil and/or groundwater including heavy metals, semi-volatile organic compounds (SVOCs), pesticides, and PCBs.

Several dry cleaners were operating in the Study Area at the time of the Corridor ESA (i.e., at 225 South End Avenue, 21 South End Avenue, and 2 South End Avenue). These buildings would not be disturbed as part of the Proposed Project but were evaluated to assess any potential impacts to soil or groundwater given their proximity to the Project Area. Historical dry-cleaning operations were also identified in the Corridor ESA located at 22 River Terrace, 370 Greenwich Street, 111 Hudson Street, 34 Harrison Street, 331 Greenwich Street, 325 South End Avenue, 245 South End Avenue, and 300 Rector Place. Contamination associated with dry-cleaning activities may include chlorinated solvents, which may be used in the dry-cleaning process and may impact soil, groundwater, and/or soil vapor conditions.

3.6.3.2 Phase II ESI

A geophysical survey of the Project Area did not identify any potential underground storage tanks (USTs). Soil and groundwater testing was also performed in the Project Area to investigate for the presence of soil and groundwater contamination, possibly linked to the above-described RECs, including the investigation of geotechnical borings for signs of possible contamination (figures depicting the soil and groundwater sampling locations are provided in the ESI; see **Appendix F**). Discrete soil and groundwater samples were collected for laboratory analysis from environmental and select geotechnical soil borings. In addition, composite soil samples were collected for laboratory analysis for waste characterization. The results of this investigation identified soil contamination consistent with the presence of historic fill. Obvious signs of fill were also observed in the soil samples, including wood, brick fragments, and polystyrene foam. Finally, laboratory analysis detected elevated concentrations of select volatile organic compounds (VOCs), SVOCs, PCBs, pesticides and metals exceeding New York State Soil Cleanup Objectives (SCOs) for unrestricted use and/or restricted-residential use in soil samples.

Additional evidence of contamination was observed in two geotechnical borings in Reach 6 (BH-05A from 8-22 feet below grade, and BH-08 from 8-10 feet below grade in the South Esplanade). Obvious signs of contamination included creosote-treated wood at sample location BH-05A; a tar-like substance and staining at sample location BH-08; elevated photoionization detection (PID) readings; and odors at both locations. Soil sampled from BH-05A⁶ contained naphthalene above its unrestricted use SCO and its restricted residential SCO, which is consistent with contamination from creosote-treated wood. Soil sampled from BH-08 contained metals exceeding unrestricted use SCOs; no exceedances of organic compounds were detected, suggesting the tar-like material was a historical release that naturally degraded over time.

Groundwater was encountered approximately 8.5 to 14.1 feet below grade in the upland locations, as was contamination associated with the surrounding historic fill, which included elevated concentrations of SVOCs exceeding their New York State Technical Operational Guidance Series (TOGS) 1.1.1 ambient groundwater quality standards. Dissolved metals that are naturally present in the region's groundwater (e.g., iron, magnesium, manganese) were also detected above New York State ambient groundwater quality standards. Several additional metals were detected above state ambient groundwater quality standards in the total metals analysis from temporary well point TWP-07 located on Route 9A/West Street in Reach 1; however, the absence of these chemicals in the dissolved metals analysis suggests these exceedances are associated with soil particles suspended in the groundwater sample. One VOC (vinyl chloride) was detected above its state ambient groundwater quality standard in one groundwater sample (collected from TWP-07, in Reach 1) and may be associated with contamination migrating from upgradient sources.

The results of the subsurface investigation did not identify evidence of a petroleum or hazardous substances release requiring spill reporting to the NYSDEC. No significant contamination associated with dry cleaning was detected in the soil and groundwater samples. No waste characterization samples exceeded U.S. Environmental Protection Agency (USEPA) hazardous waste criteria.

3.6.3.3 2024 Environmental Sampling Report Summary

Supplemental soil and groundwater sampling was performed in the Project Area to investigate for the presence of soil, sediment and groundwater contamination and to evaluate waste management and disposal options (figures depicting the soil and groundwater sampling locations are provided in the 2024 Environmental Sampling Report; see **Appendix F**). In addition to soil and groundwater samples, sediment samples were collected from in-river geotechnical borings to provide information on potential contaminants in river sediment. Geotechnical soil borings were screened for evidence of contamination, and discrete and composite soil samples were collected for laboratory analysis. Groundwater samples were collected from six monitoring wells.

⁶ In the ESI report, the soil sample collected from BH-05A was designated "SB-05A."

During the investigation, obvious signs of fill including brick, wood, and rubber fragments were observed in Reach 1 (B-39, B-39A, and B-44) up to 37 feet below grade, Reach 2 up to 32 feet below grade (B-22) and up to 42 feet below grade (B-33), and Reach 6 (B-9) up to 37 feet below grade. Other evidence of contamination included dark staining in Reach 4 (B-19) from 8 to 10 feet below grade, and evidence of petroleum contamination (stain, odors, and/or sheen) was observed in Reach 2 (B-33) from 15-17 and 25-27 feet below grade, Reach 3 (B-22) from 59-61 feet below grade, and Reach 7 (B-5) from 40-52 feet below grade. Laboratory analysis detected SVOCs and metals exceeding their SCOs for unrestricted use in soil samples across the Project Area. Pesticides were detected exceeding their SCOs for unrestricted use in three soil borings, located in Reach 1, Reach 4, and Reach 6. One soil sample collected from Reach 7 detected PCBs above unrestricted use SCOs. Lastly, the VOC acetone was detected above its unrestricted use SCO across the Project Area. Acetone may be present in urban fill soils. Acetone is also a common laboratory artifact which may be detected at low levels due to laboratory cross-contamination; however, it was not detected in method or field blanks. Acetone in soil readily leaches into groundwater; however, acetone was not detected in any of the groundwater samples collected (discussed below). No other organic or inorganic contaminants were detected in soil samples. In general, these exceedances are indicative of urban fill, and are consistent with the findings of the Phase II ESI. Based on the Toxic Characteristic Leaching Procedure (TCLP) analytical results, no solid waste from the Project Area is expected to require disposal as hazardous material.

Groundwater was encountered approximately 10.7 to 13.3 feet below the top of the monitoring well casings. Analytical results identified total and dissolved metals that are naturally occurring in the region's groundwater (e.g., iron, magnesium, manganese, and sodium) exceeding their New York State TOGS 1.1.1 ambient groundwater quality standards. One VOC (chloroform) was detected above its state ambient groundwater quality standard in one groundwater sample (collected from SB-21, in Reach 3).

Sediment samples were collected from three geotechnical borings, one located in Reach 4 and two in Reach 6. In Reach 4, sediment was sampled to a depth of 2 feet below the mudline. In Reach 6, sediment was sampled to a depth of approximately 11 feet below the mudline. Sediment samples contained elevated metals above their TOGS 5.1.9 Class C sediment quality thresholds (acute toxicity to aquatic life) in Reaches 4 and 6. Metals in sediment samples results were also compared to New York State SCOs, and the results exceeded both unrestricted use SCOs and restricted-residential use SCOs in Reaches 4 and 6. Mercury and arsenic were consistently detected in exceedance of Restricted Residential SCOs in the sediment samples. Mercury was detected at concentrations up to ten times the Restricted Residential SCO. A TCLP sample collected from Reach 6 did not indicate hazardous levels of contamination in sampled sediment.

3.6.3.4 Hazardous Materials Investigation Report Summary

The Limited Hazardous Materials Investigation described the identification and characterization of accessible suspect ACM, LCP, LBP, PCBs in caulking/sealant material(s), and other universal/regulated wastes in the Project Area that may require the need for special handling, disposal, and/or recycling requirements.

An asbestos investigation and sampling program was performed in accordance with the requirements and standard procedures outlined in the OSHA 29 CFR 1926.1101, the USEPA 40 CFR Part 763 Asbestos Hazard Emergency Response Act (AHERA), NYSDOL Industrial Code Rule (ICR) Part 56 Asbestos, and NYCDEP Title 15 – Chapter 1. 48. As part of this assessment, a limited investigation with samples of suspected ACM were collected including various mortars, caulks, and expansion joint materials. Although no ACM (>1% asbestos content) was identified in the Project Area during the limited investigation; should any suspect materials be encountered during demolition activities, it will be assumed to contain asbestos and treated as such unless further sampling and lab analysis demonstrates otherwise.

The LCP/LBP investigation consisted of a visual inspection for painted surfaces within the Project Area by a qualified USEPA-Certified Lead Risk Assessor and was performed in general accordance with the U.S. Department of Housing and Urban Development (HUD) Title X requirements (surface-by-surface); however, no painted surfaces were identified in the Project Area during the investigation, no paint chip samples were collected and therefore no structural components were tested for lead content.

Additional information concerning the exact materials sampled, location and additional methodologies can be found within the Limited Hazardous Materials Investigation Report dated February 23, 2022 (in **Appendix F**).

3.6.4 No Action Conditions

In the No Action condition, it is assumed that there would be no construction-related subsurface disturbance or excavation that would substantively affect conditions in the Project Area with respect to contaminated and hazardous materials.

3.6.5 Proposed Action Conditions—During Construction

3.6.5.1 Exposure from Existing Site Contamination

Construction of the Proposed Project would temporarily create potential pathways for exposure to contaminated soil, groundwater, and/or sediment associated with construction activities that would include, but are not limited to, demolition, excavation, stockpiling, sampling, dewatering, and temporary storage and transport for off-site disposal. In the absence of appropriate control and management measures, these potential exposures can include direct contact, inhalation of vapor or particles in the air, or ingestion of contaminated soil and groundwater by construction workers and/or the general public. The effect of these materials on human health is dependent on the nature and toxicity of the contaminant, the duration and intensity of exposure, and the management measures that are implemented to avoid such impacts during construction.

Therefore, to avoid impacts, the procedures outlined in the project-specific NYCDEP-approved RAP and CHASP will be followed to address the handling of contaminated or hazardous materials that may be disturbed during construction. A draft, project-specific RAP and CHASP have been prepared, and are included in **Appendix F**. These documents outline procedures for the proper handling and management of soil, groundwater, vapors, and other potentially contaminated hazardous materials to reduce the risks of human exposure both during construction and upon project completion. If any additional remedial

measures are necessary based on the analytical results of the sediment sampling that will be implemented prior to performing any dredging activities, the RAP and CHASP would be updated accordingly and submitted for DEP review and approval prior to the start of construction. The RAP and CHASP are to be implemented during construction.

As part of the construction protocol, soil lacking evidence of contamination (visual, olfactory, or elevated PID readings) that is excavated from areas where soil sample results did not exceed restricted-residential use SCOs could be re-used as backfill in the same locations/depths from which it was removed, or placed in other locations confirmed to have similar physical and chemical properties. Excavated soil with evidence of contamination (i.e., staining, odors, and/or elevated PID readings) would be removed and disposed of off-site in accordance with the RAP. Although not anticipated to be encountered based on the above summarized site investigations, any soil that is determined to contain hazardous or grossly contaminated materials would be disposed of off-site in accordance with NYSDEC Parts 370-374 and the soil handling and reuse requirements of the RAP. Should any hazardous waste be encountered, including but not limited to contaminated soil exceeding USEPA hazardous waste criteria, it will be stored in accordance with all applicable laws and regulations with all appropriate spill prevention practices in place. Any hazardous waste or grossly contaminated material encountered would be removed from the Project Area for proper off-site disposal within 90 days of discovery.

As outlined in the RAP, all stockpiled material would be stored in accordance with city and state requirements, and a soil erosion and sediment control plan would also be implemented to prevent and minimize runoff, nuisance dust, and waterway (Hudson River) pollutants due to runoff. All construction debris and potentially contaminated soil will be segregated from clean reusable soil. On-site stockpiling of contaminated material would only occur when absolutely necessary, would be temporary, and would only be performed with the proper management precautions in-place. Such soil would also be prioritized for removal from the construction area as soon as practicable for proper off-site disposal at a licensed and approved facility. Should dewatering be needed during construction, the extracted groundwater would be handled in accordance with all applicable laws and regulations. BMPs during construction would also include erosion and sediment control measures such as silt fences and hay bales, truck washing, and regular inspections of the construction work zones and staging areas to avoid off-site impacts.

In construction areas where soil samples exceed restricted-residential SCOs, areas with VOC exceedances in groundwater samples, and/or areas where there is visual/olfactory evidence of contamination, a Community Air Monitoring Program (CAMP) would also be implemented to monitor vapors and airborne particulates typically generated by the excavation and transport of soil. The CAMP is a component in the RAP and describes the air monitoring equipment, action levels, and appropriate responses to recorded exceedances of action levels for the purposes of minimizing exposure of construction workers and the community to airborne vapors and particulates.

Excavated materials requiring off-site disposal will be sampled for laboratory analysis for waste characterization purposes, as needed. Waste characterization sampling protocols for soil and groundwater would be undertaken in accordance with the requirements of the selected disposal facility's individual Part 360 permit. Such sampling would also be performed in accordance with applicable city,

state, and federal requirements and guidance documents and in accordance with facility-specific requirements at the receiving site.

If lead paint surfaces are identified during construction, these materials would also have to be handled and disposed of in accordance with the applicable regulations and procedures. Many of these materials can be disposed of as construction debris through the NYSDEC C7 Exemption form (when paint is adhered to the substrate). Analysis of paint chips debris is also subject to TCLP analysis to fulfill waste profiling and manifesting requirements. Worker exposure, medical surveillance, personal protective equipment, and engineering controls must also conform to the OSHA Lead in Construction Standard (29 CFR 1926.62).

During the limited hazardous materials investigation described above in “Existing Conditions,” samples were collected of caulking materials identified along the Project Area that were suspected of containing PCBs. These samples were analyzed for PCB content using USEPA Method 3540C 8082A and all sample results were below the TSCA PCB-containing materials classification criteria of 50 parts per million (ppm), or milligrams per kilograms (mg/kg). Therefore, in accordance with USEPA regulation 40 CFR Part 761, none of these caulking materials would need special handling or disposal.

Structural elements that, if demolished during construction, may be classified as hazardous material and/or universal waste for disposal purposes were also noted during the field investigations. These materials include, but are not limited to, light fixtures (i.e., potential mercury-containing bulbs and PCB-containing ballasts), electrical equipment, and batteries observed in the Project Area. Although not anticipated, should suspected hazardous materials and/or universal waste be disturbed during construction, these materials may require special handling and/or disposal. The handling of these materials will be described as part of a waste management plan, to include waste handling, recycling, and disposal requirements in accordance with all applicable federal, state, and local regulations. Universal waste must also be recycled in accordance with 40 CFR Part 273 and 6 NYCRR Part 360. Materials and components that cannot be identified by product labels must be characterized through laboratory analysis and all testing and profiling must be performed in accordance with the USEPA RCRA requirements.

In addition, if universal waste, potentially hazardous waste (including those potentially containing ACM, LCP, LBP, and/or PCBs) and other regulated waste are encountered during project construction, these must be profiled/segregated and then handled, transported, and properly disposed of in accordance with all applicable federal, state, and local regulations.

With the above measures in place, it is concluded that the Proposed Project would not result in any significant adverse impacts with respect to contaminated or hazardous materials encountered during construction.

3.6.5.2 Solid Waste

Construction of the Proposed Project would generate solid waste from construction demolition and residual debris that would include pavement, piping, and concrete. These solid wastes would be recycled to the extent feasible including asphalt millings, masonry, metals, plastics, lumber, plywood, cardboard, and paper. Unrecyclable waste would be transported and disposed of off-site at a facility licensed to

accept such waste in accordance with all applicable city, state, and federal regulations and it is not expected that the Proposed Project would not result in any significant adverse impacts related to solid waste.

3.6.5.3 Construction-Related Chemicals

Construction for the Proposed Project would include the short-term use of hazardous and non-hazardous construction materials, including petroleum hydrocarbon-based fuels, lubricants, oils, paints, and cleaning solvents typically used during the operation and/or maintenance of construction equipment. Any potential risks associated with the handling, transport, or disposal of hazardous construction-related materials would be minimized by using, storing, transporting, and disposing of such materials in accordance with manufacturer instructions and in compliance with applicable all city, state, and federal laws and regulations. Management procedures (including but not limited to proper storage, inspections, and spill response) would be implemented to prevent these chemicals from impacting soil, sediment, surface water, or groundwater. By complying with these procedures and regulations, it is concluded that the Proposed Project would not result in any significant adverse impacts due to construction-related chemicals.

3.6.5.4 Pollution Prevention

Construction activities have the potential to result in releases of construction-related chemicals to the environment that, if left uncontrolled, could adversely impact soil and groundwater conditions. To avoid these impacts, BMPs would be implemented during construction to prevent accidental releases and spills, including, but not limited to, those associated with appropriate chemical storage, chemical inventories, fueling techniques, and spill prevention inspections. To that end, the CHASP includes spill prevention procedures so that, if an accidental release occurs, the release would be identified, remedied, and contained to minimize its impact. Cleanup of the release would also be performed promptly, emergency clean-up crews would be contacted if conditions are unsafe, and the release would be reported to the regulatory authority in accordance with city, state, and federal laws and regulations. Spill prevention BMPs will ensure that, should a spill or release of construction-related chemicals occur, it would be short-term and localized, short-term on predominantly impervious surfaces, which would limit any potential soil or groundwater impacts. Spill prevention BMPs would also include daily and weekly inspections of chemical/petroleum storage areas and liquid containing systems and training on spill-reporting and clean-up procedures. With these pollution prevention procedures in-place, it is concluded that the Proposed Project would not result in any significant adverse impacts during construction.

3.6.6 Proposed Action Conditions—Operational Phase

The flood barrier system and related grading and/or an engineered composite cover proposed under the Proposed Project would preclude human contact with residual soil/fill materials. Landscaped areas will be covered with a “soil cap” of imported clean soil. A demarcation barrier will also be installed at the bottom and slopes of the excavation, which would identify the boundary between remaining subsurface materials and imported clean fill.

Groundwater is not used in the area for potable purposes; therefore, exposure to groundwater during the Proposed Project's operational phase is not anticipated. No storage of hazardous chemicals or petroleum products which may cause a spill or release is anticipated during the operational phase.

Therefore, it is concluded that the Proposed Project would not result in any impacts related to contaminated or hazardous materials during its operational phase.