

A. INTRODUCTION

This chapter presents the findings of the hazardous materials assessment by identifying potential issues of concern with respect to workers, the community, and/or the environment during construction and after implementation of the Proposed Project. As described in greater detail in Chapter 1, “Projection Description,” the Proposed Project is a commercial center with associated parking, open space, street and infrastructure improvements.

The upland portion of the Project Site includes a two-story residential building in the southeastern portion as well as vacant, undeveloped, wooded land with evidence of past filling and areas of freshwater and tidal wetlands. The Project Site is adjacent to the Outerbridge Crossing to the north.

The Proposed Project would require subsurface disturbance (e.g., for grading, building foundations, below-grade parking lot construction, subsurface utilities and wetland creation and enhancement). Therefore, as required by the *City Environmental Quality Review (CEQR) Technical Manual*, a Phase I Environmental Site Assessment (ESA) and Phase II Soil and Groundwater Sampling were performed at the Project Site to identify any potential issues related to hazardous materials. The potential for the presence of hazardous materials was evaluated based on a September 2013 *Phase I ESA* conducted in accordance with *ASTM Standard E1527-05, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Practice*, and a September 2016 *Subsurface (Phase II) Investigation*, both prepared by AKRF, Inc. While the ASTM Standard has been updated since the completion of the Phase I ESA, a review of the report indicates that the conclusions and recommendations in relation to the Proposed Project would remain unchanged.

PRINCIPAL CONCLUSIONS

The Proposed Project would not result in significant adverse impacts to hazardous materials. As noted below, the Proposed Actions include an (E) designation (E-443) for the Project Site related to hazardous materials to ensure that no significant adverse impacts related to hazardous materials occur.

Based on the potential hazardous materials concerns identified by the Phase I ESA, a Subsurface (Phase II) Investigation was conducted in accordance with a Sampling Protocol approved by the NYC Department of Environmental Protection (DEP). Based on the results of the Phase II Investigation, a Remedial Action Plan (RAP) and associated Construction Health and Safety Plan (CHASP) would need to be implemented during the subsurface disturbance associated with the Proposed Project to reduce the potential for human or environmental exposure to any identified (by the Phase II Investigation) or unexpectedly encountered contamination. To ensure this would occur, hazardous materials (E) designations would be administratively placed on the parcels comprising the Proposed Project and documented on an updated Zoning Map. The hazardous materials (E) designations would require review and approval of the RAP and

CHASP by the New York City Office of Environmental Remediation (OER). The RAP would address requirements for soil stockpiling, soil disposal and transportation; dust control; dewatering procedures; quality assurance; and procedures for the closure and removal of any encountered petroleum storage tanks. The CHASP would identify potential hazards that may be encountered during construction and specify appropriate health and safety measures to be undertaken to ensure that subsurface disturbance is performed in a manner protective of workers, the community, and the environment (such as personal protective equipment, air monitoring including community air monitoring, and emergency response procedures). Following construction, a Remedial Closure Report (RCR), documenting compliance with the RAP and CHASP, would need to be submitted to and by approved by OER, before occupancy permits could be issued by the NYC Department of Buildings. In addition, renovation and reuse of the existing Cole House would follow, insofar as may be relevant, regulatory requirements pertaining to asbestos-containing materials (ACM), lead-based paint (LBP), polychlorinated biphenyls (PCBs) and chemical use and storage. With the implementation of these measures, the Proposed Project would not result in any significant adverse impacts related to hazardous materials.

B. EXISTING CONDITIONS

TOPOGRAPHY AND SUBSURFACE CONDITIONS

The Project Site is approximately 20 feet above mean sea level in the northeastern portion and slopes gently down to the west and southwest towards the Arthur Kill. There is evidence of bermed soil (up to approximately 10 feet above surrounding grades) and historical filling in a cleared area located in the central and southwestern portions of Block 7620, Lot 1. A stream flows through the northern portion of the Project Site toward the Arthur Kill.

Fill materials (including sand, silt, gravel, clay, and brick) were observed during the Phase II Investigation (borings and test pits) to depths of approximately 2 to 12 feet below grade. In the historical filling area on Block 7620, Lot 1, fill materials (including sand, silt, clay, gravel, cobbles, brick, concrete, and wood) were observed to depths of 8 to 12 feet below the top of the berm, or approximately 0 to 2 feet below the surrounding grade of the Project Site. Native clay and sand with varying amounts of silt, sand, gravel, and cobbles was observed beneath the fill.

Freshwater and tidal wetlands exist throughout the Project Site. Groundwater was first encountered during the Phase II Investigation at approximately 9 feet below grade on the southwestern portion of the Project Site and at approximately 16 feet below grade on the eastern side. Groundwater flow is expected to generally follow surface topography, i.e., primarily to the west and south towards the Arthur Kill, but could be affected by the stream, wetlands, filling activities, current or historical bulkheads, tidal fluctuations, or other factors. Groundwater in Staten Island is not used as a potable source.

HAZARDOUS MATERIALS ASSESSMENT

PHASE I ENVIRONMENTAL SITE ASSESSMENT

The scope of the Phase I ESA included a reconnaissance of the Project Site and surrounding area and review of a variety of information sources, including recent and historical Sanborn fire insurance maps, environmental regulatory agency databases identifying state and federally listed sites, engineering site plans, and geotechnical data. The Phase I ESA identified the following Recognized Environmental Conditions:

- The southern portion of the Project Site (Block 7632, Lot 150) was formerly occupied by the M.J. Dady Company from before 1914 until after 1917 and is known to have used several structures for storage, offices, and a scale house. The use of other structures associated with M.J. Dady is unknown, but the company was associated with contracting and shipyards. The northwestern and southeastern portions of the Project Site were formerly occupied by suspected residences (shown on the 1917 Sanborn map for Block 7620, Lot 1 and Block 7632, Lot 6). Petroleum-related products or other potentially hazardous chemicals may have been stored or used by M.J. Dady Company, e.g., as part of ship building, and fuel oil tanks may have been utilized to heat residences. In addition, current and former heating of the existing residence are unknown and the building may have or may have had a fuel oil tank.
- Historical filling is suspected to have occurred at the Project Site based on a review of aerial photographs between 1966 and 1994, and the soil berms observed in the area of the large clearing on the southwestern portion of Block 7632, Lot 150. The origin and composition of this fill is unknown.
- Evidence of dumping and debris piles was apparent during the site reconnaissance and on the aerial photographs on the southern and southwestern portions of the Project Site.
- Lucent Technologies Electroplating (aka Nassau Metals Corp. and Tottenville Copper Company), located at 236 Richmond Valley Road, approximately 670 feet southeast of the Project Site, was listed in numerous federal and state databases which documented the storage and disposal of hazardous waste, civil enforcement penalties, and a federally funded environmental investigation that led to cleanup in 2011 under the New York State Department of Environmental Conservation's (NYSDEC's) Voluntary Cleanup Program. Due to the proximity of this facility to Mill Creek, which formerly discharged to the Arthur Kill directly south of the Project Site, documented spills at Lucent may have affected subsurface conditions at the southern portion of the Project Site.
- Stormwater runoff from the Outerbridge Crossing and a pipe suspected to be a stormwater drain from Arthur Kill Road and east-adjacent properties was noted to discharge on the Project Site. No evidence of stressed vegetation was observed in the vicinity of the discharge areas.
- Buildings Department records and observations during the site reconnaissance indicated the likely presence of a septic tank which formerly served the existing residence. No additional records were available regarding its integrity or discharge location.
- Based on the age of the existing residence, ACM, lead-based paint, and/or PCB-containing materials may be present within the structure.

SUBSURFACE (PHASE II) INVESTIGATION

The scope of the Phase II Investigation was based on the findings of the Phase I ESA and was pre-approved by the New York City Department of Environmental Protection (DEP). It consisted of a geophysical survey, the drilling of eight soil borings, the digging of six test pits, the installation of four temporary wells, the installation of four temporary soil vapor points, and the collection of soil, groundwater, and soil vapor samples for laboratory analysis. It identified the following:

- Based on a geophysical anomaly, an abandoned fuel tank was discovered in the area of historical filling on the southwestern portion of the Project Site. The tank was empty with no associated piping or evidence of contamination in the surrounding soil. The tank was removed and covered with plastic sheeting pending disposal.

- The concentration of arsenic in one soil sample (collected from 10 to 12 feet below grade) exceeded its NYSDEC 6 NYCRR Part 375 Commercial Soil Cleanup Objective (CSCO). Concentrations of certain metals (arsenic, copper, lead, mercury, selenium, and zinc) and pesticides in up to six soil samples exceeded their respective NYSDEC Part 375 Unrestricted Use Soil Cleanup Objectives (UUSCOs) at levels consistent with the presence of historical fill material. Comparison to the UUSCOs is to provide guidance with regard to off-site disposal of any surplus of excavated soil.
- Concentrations of total metals (lead, magnesium, manganese, selenium, and sodium) exceeded NYSDEC 1.1.1 Technical and Operational Guidance Series (TOGS) health-based Class GA Ambient Water Quality Standards (AWQS) in one or more groundwater samples. Dissolved metals concentrations were significantly lower, with only manganese and sodium exceeding AWQS, suggesting that many of the detections are attributable to the turbidity in the samples. The detected metals are likely naturally occurring or reflective of regional groundwater quality and are not indicative of a release. It should be noted that this is a very conservative comparison as these criteria assume use as a drinking water source, whereas Project Site groundwater is not and would not be used as a drinking water source.
- Several volatile organic compounds (VOCs) were identified in soil vapor, including tetrachloroethylene (PCE) and trichloroethylene (TCE), above NYSDOH indoor Air Guideline Values (AGVs). AGVs assume future long-term residential exposure, and so are significantly over-conservative for comparison criteria, given both potential future commercial use and the attenuation which would occur from soil vapor to indoor air inside the future building.

C. THE FUTURE WITHOUT THE PROPOSED PROJECT

In the future without the Proposed Project, or No Action condition, the Project Site would remain undisturbed and undeveloped. Applicable regulatory requirements would need to continue to be followed by the owner/occupant of the residence, including but not limited to, disposal of chemicals or other wastes, NYSDEC regulations relating to closure or removal of unused petroleum tanks along with any associated contaminated soil, and proper maintenance of ACM or lead-based paint. Local regulations may also apply to the closure of the former septic system.

D. THE FUTURE WITH THE PROPOSED PROJECT

The future with the Proposed Project, or With Action condition, would involve reuse of the existing residence located on Block 7632, Lot 6 and soil disturbance for the construction of the Proposed Project. As noted above, former uses of the Project Site and filling activities may have impacted subsurface conditions; and the existing residence may have used and stored oil for heating purposes and may contain ACM, LBP, or PCB-containing materials, and have a former septic tank. Renovation of the residence and excavation elsewhere on the Project Site could disturb these hazardous materials and potentially increase pathways for human or environmental exposure. Impacts would be avoided by implementing the following measures:

- Based on the results of the Phase II Investigation, a Remedial Action Plan (RAP) and associated Construction Health and Safety Plan (CHASP) would be implemented during the subsurface disturbance associated with the Proposed Project. To ensure this would occur, hazardous materials “E” designations would be administratively placed on the parcels comprising the Proposed Project and documented on an updated Zoning Map. The “E”

designations would require review and approval of the RAP and CHASP by the New York City Office of Environmental Remediation (OER). The RAP would address requirements such as potentially capping certain existing soils with imported clean soil as a “site cap” in new landscaped/unpaved areas; soil reuse criteria; soil testing, stockpiling, disposal and transportation; dust control; dewatering procedures; procedures for closure and removal of the septic tank and any encountered petroleum storage tanks; and contingency measures should unexpected contamination be encountered. The CHASP would identify potential hazards that may be encountered during construction and specify appropriate health and safety measures to be undertaken to ensure that subsurface disturbance is performed in a manner protective of workers, the community, and the environment (such as personal protective equipment, air monitoring requirements including community air monitoring, and emergency response procedures).

- Unless information exists to indicate that the existing residence does not contain asbestos, an asbestos survey would be completed and all ACM that would be disturbed by renovation would be removed and disposed of prior to renovation, in accordance with applicable regulatory requirements.
- Any renovation activities with the potential to disturb lead-based paint would be performed in accordance with the applicable Occupational Safety and Health Administration regulation (OSHA 29 CFR 1926.62—Lead Exposure in Construction).
- Unless labeling or laboratory testing data indicates that suspect PCB-containing electrical equipment (including underground transformers) and fluorescent lighting fixtures do not contain PCBs, and that fluorescent lights do not contain mercury, any required disposal would be performed in accordance with applicable regulatory requirements.
- Any petroleum storage tanks for the new buildings (e.g., for emergency generators) would be installed and maintained in accordance with applicable regulations, including NYSDEC tank maintenance requirements.
- The abandoned fuel tank encountered in the historical filling area and any unexpectedly encountered USTs would be properly removed and disposed of in accordance with applicable regulations, including any applicable NYSDEC tank registration and spill reporting requirements.
- Excess soil and fill materials to be disposed of and/or reused off site as part of construction would be sampled for waste classification purposes. Excavated soil and fill materials would be handled and managed in accordance with applicable regulations and the RAP/CHASP. Transportation of material leaving the Project Site would be in accordance with federal, state, and local regulatory requirements covering licensing of haulers and trucks, placarding, truck routes, manifesting, etc.
- If dewatering is required, it would be performed in accordance with DEP requirements for discharge to sanitary/combined sewers or NYSDEC requirements for discharge to surface waters (either directly or via storm sewer outfalls). Additional groundwater testing and pre-treatment (unlikely but dependent upon the testing results) may be necessary to comply with these requirements.
- Following construction, a Professional Engineer (P.E.)-certified Remedial Closure Report (RCR) would be submitted to and approved by OER to document compliance with the RAP and CHASP, and allow for occupancy permits to be issued by the NYC Department of Buildings.

With respect to implementing the (E) designation for hazardous materials (E-443), the following tasks would be performed:

Task 1-Sampling Protocol

The applicant submits to OER, for review and approval, a Phase I of the site along with a soil, groundwater and soil vapor testing protocol, including a description of methods and a site map with all sampling locations clearly and precisely represented. If site sampling is necessary, no sampling should begin until written approval of a protocol is received from OER. The number and location of samples should be selected to adequately characterize the site, specific sources of suspected contamination (i.e., petroleum based contamination and non-petroleum based contamination), and the remainder of the site's condition. The characterization should be complete enough to determine what remediation strategy (if any) is necessary after review of sampling data. Guidelines and criteria for selecting sampling locations and collecting samples are provided by OER upon request.

Task 2-Remediation Determination and Protocol

A written report with findings and a summary of the data must be submitted to OER after completion of the testing phase and laboratory analysis for review and approval. After receiving such results, a determination is made by OER if the results indicate that remediation is necessary. If OER determines that no remediation is necessary, written notice shall be given by OER.

If remediation is indicated from test results, a proposed remediation plan must be submitted to OER for review and approval. The applicant must complete such remediation as determined necessary by OER. The applicant should then provide proper documentation that the work has been satisfactorily completed.

A CHASP would be submitted to OER and implemented during excavation and construction activities to protect workers and the community from potentially significant adverse impacts associated with contaminated soil, groundwater and/or soil vapor. This plan would be submitted to OER prior to implementation.

With this (E) designation in place, no significant adverse project impacts related to hazardous materials are expected.

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