Chapter 8: Hazardous Materials

A. INTRODUCTION

This chapter presents the findings of the hazardous materials assessment and identifies potential areas of concern that could pose a hazard to workers, the community, and/or the environment during or after the proposed Lenox Hill Hospital (LHH) Redevelopment project (the Proposed Project).

As described in Chapter 1, "Project Description," Lenox Hill Hospital (the Applicant) is requesting a series of discretionary actions from the City Planning Commission (CPC) to facilitate the enlargement and modernization of the existing LHH on Block 1411, Lots 1 and 113 (Projected Development Site 1), bounded by Park and Lexington Avenues and East 76th and East 77th Streets in Manhattan. The Proposed Project would include a new building fronting on Lexington Avenue, as well as additions and modifications to portions of the existing hospital complex on Projected Development Site 1 and connections between the new hospital building and the renovated buildings. Two building envelopes are proposed, each of which would accommodate the Proposed Project's program. Envelope 1 would include a new approximately 771,000-gross-square-foot (gsf) building on Lexington Avenue and 56,000 gsf of additions to the existing hospital. Envelope 2 would include a new approximately 867,000-gsf building and 8,000 gsf of additions to the existing hospital. With the existing buildings to remain, the overall gross floor area of the Proposed Project on Projected Development Site 1 would be approximately 1.4 million gsf with either envelope. The program, project population (staff, patients, visitors), site access, zoning actions, and construction duration would be the same for both Envelope 1 and Envelope 2.

This Environmental Impact Statement (EIS) also considers the as-of-right development of a building with hospital support functions at 111-115 East 77th Street between Lexington and Park Avenues (Block 1412, Lots 9, 10, and 11) (Projected Development Site 1a) as part of the Proposed Project. It would be connected to Projected Development Site 1 by a utility tunnel under East 77th Street. In addition, the Applicant proposes to provide improvements to the 77th Street subway station of the Lexington Avenue (No. 6) line, providing Americans with Disabilities Act (ADA) access to the downtown platform and improving sidewalk conditions in the immediate area.

The Proposed Project would entail demolition of portions of the existing hospital, followed by excavation for new construction and renovations of existing structures. AKRF performed a Phase I Environmental Site Assessment (ESA) of the Project Site in June 2022 in accordance with the American Society for Testing and Materials (ASTM) Standard E1527-13, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Practice,* and a subsequent Subsurface (Phase II) Investigation in November 2023 (see **Appendix C**). The Phase I ESA included a visual inspection; a review of historical land use maps and local records; and a review of state and federal regulatory databases relating to use, generation, storage, treatment, and/or disposal of hazardous materials. The Phase II Investigation included the collection of soil, groundwater, and soil vapor samples for laboratory analysis.

PRINCIPAL CONCLUSIONS

The Proposed Project would entail demolition of portions of the existing hospital, followed by excavation for new construction and renovations of existing structures to allow the enlargement and modernization of the existing LHH and the creation of a purpose-built hospital complex to address critical infrastructure challenges and space needs. To avoid any potential for hazardous materials exposure, all federal, state, and local requirements and regulations would be followed, and the following procedures would be, or have been, implemented:

- The results of the Phase I ESA and Subsurface Investigation (described below) have been summarized in reports for agency review as part of the EIS.
- Based on the findings of the Subsurface Investigation, an (E) Designation (E-777) for hazardous materials will be placed on the site to ensure that, regardless of whether Envelope 1 or Envelope 2 is implemented, the Applicant completes the remediation in accordance with the requirements of the New York City Mayor's Office of Environmental Remediation (OER). OER's (E) Designation process, described in greater detail in the sections below, includes: 1) conducting thorough environmental testing of the site, and 2) the preparation of a remedial plan for implementation during construction that specifies procedures for identifying and managing any anticipated or unanticipated contamination, imposes appropriate construction health and safety procedures, and includes the installation of any necessary engineering controls to ensure the protection of future site inhabitants, the surrounding community, and the environment following construction.
- Prior to demolition, a comprehensive asbestos survey of the existing building would be conducted, and any asbestos-containing materials (ACM) would be removed and disposed of in accordance with applicable requirements.
- Suspect mercury-containing or suspect polychlorinated biphenyl (PCB)-containing equipment and materials would be disposed of in accordance with applicable regulatory requirements.
- Any demolition activities with the potential to disturb lead-based paint (LBP) materials would be performed in accordance with the applicable regulatory requirements.
- Prior to any building renovation or demolition activities, all remaining chemical, medical/biological, and radioactive materials would be removed and disposed of in accordance with applicable regulations.
- All on-site petroleum storage tanks would be closed and removed prior to redevelopment in accordance with applicable requirements.
- Transportation of material leaving the Project Site for off-site disposal would be performed in accordance with all applicable requirements covering licensing of haulers and trucks, placarding, truck routes, manifesting, etc.
- If dewatering activities are required, such activities would be performed in accordance with local requirements for discharge to sanitary/combined sewers. Pretreatment would be performed if necessary to meet the New York City Department of Environmental Protection (DEP) requirements.

With the implementation of these procedures, no significant adverse impacts related to hazardous materials would result from the Proposed Project.

B. EXISTING CONDITIONS

TOPOGRAPHY AND SUBSURFACE CONDITIONS

Topography at the Project Site is relatively level, with a slight downward slope to the east. Based on the United States Geological Survey, Central Park, NY Quadrangle (2013) map, the Project Site is approximately 65 feet above the National Geodetic Vertical Datum of 1988 (an approximation of mean sea level).

A geotechnical investigation conducted by RA Consultants LLC in 2018 measured the depth to groundwater between approximately 17 and 18.5 feet below sidewalk grade (roughly 5 to 7 feet below basement level) and noted it to be perched on bedrock. During AKRF's Phase II Investigation, groundwater was encountered at approximately 17 feet below sidewalk grade in an existing geotechnical monitoring well located within the East 76th Street sidewalk, immediately south of the hospital building. Groundwater is anticipated to flow in an easterly direction toward the East River, located approximately 3,400 feet away. However, actual flow can be affected by many factors including subway tunnels (including the adjacent No. 4, 5, and 6 subways beneath Lexington Avenue), underground utilities, and other factors beyond the scope of the study. Groundwater in Manhattan is not used as a source of drinking water.

PHASE I ESA FINDINGS

The following potential hazardous materials issues were identified by the June 2022 Phase I ESA (see **Appendix C**):

- Block 1411 of the Project Site (Projected Development Site 1) is registered with the New York State Department of Environmental Conservation (DEC) Petroleum Bulk Storage (PBS) Program (PBS# 2-606498) with one in-service 20,000-gallon diesel aboveground storage tank (AST) located within a basement-level concrete tank room, two (2) 317-gallon day tanks within a sub-basement-level emergency generator room, and an ancillary 330-gallon diesel AST (also supplied by the 20,000-gallon AST) located on the roof of the Uris Building. The tanks are used to fuel the LHH emergency generator systems. No spills were listed in the regulatory databases in connection with the ASTs; however, undocumented releases from historic bulk petroleum storage operations may have affected environmental conditions at the Project Site.
- Block 1411 of the Project Site (Projected Development Site 1) was registered as a small quantity generator (SQG) and historic Large Quantity Generator (LQG) of hazardous wastes typically associated with medical facilities—including formaldehyde, xylenes, chromium, spent non-halogenated solvents, corrosive wastes, ignitable wastes, pharmaceutical wastes, silver, mercury, and chloroform—between approximately 1992 and 2018.
- Historical land use maps and city directories indicated that the current ancillary hospital buildings on the north-adjacent Block 1412 (Projected Development Site 1a) contained three dwellings since at least 1898 and were noted to include several commercial and automotive uses between circa (ca.) 1911 and 2005. Auto storage houses, offices, and a farrier (subsequently a garage) were located at 113 East 77th Street. Historical garage uses were also noted at the 111 and 115 East 77th Street buildings. Such uses may have included petroleum and/or solvents and mercury (associated with the former farrier).
- Historical land use maps, city directories, and the regulatory database review identified nearby uses between ca. 1896 and 2005, including automotive garages on blocks south, northeast,

and west of the Project Site, and several drycleaners on the surrounding blocks. The regulatory database information identified two closed-status spills documenting petroleum-contaminated soil and groundwater at 122 East 78th Street (immediately north of Projected Development Site 1a). Nearby off-site facilities may have affected regional subsurface conditions.

- Building components within the structures could include PCBs, LBP, and/or ACM. Potential buried structures and debris in the subsurface could include underground storage tanks (USTs), PCBs, LBP, and/or ACM.

SUBSURFACE (PHASE II) INVESTIGATION

A June 2023 Work Plan for this investigation was prepared by AKRF and submitted to DEP for review (see **Appendix C**). The investigation, which was performed in November 2023, included a geophysical survey; the advancement of nine borings using manual methods (hand tools consisting of a core drill and a hand auger) with the collection and laboratory analysis of two soil samples; collection and laboratory analysis of one groundwater sample from an existing geotechnical monitoring well previously installed in the East 76th Street sidewalk immediately south of the hospital building; and collection and laboratory analysis of nine soil vapor samples.

Due to physical limitations encountered during the field investigation, including intervening subsurface utilities, active electrical systems for critical hospital care systems, and ongoing hospital operations, the advancement of soil borings with a Geoprobe® direct-push drill rig was not possible as hospital operations prohibited the use of fuel-powered drilling equipment with exhaust inside the building and limited the use of electrical power to standard outlets. As such, borings were advanced manually with hand tools consisting of a core drill and a hand auger, which precluded the installation of soil borings to significant depths below the sub-basement and basement floor slabs and limited subsurface sample collection.

SOIL ANALYTICAL RESULTS

Laboratory analytical results from the two soil samples were compared to the Unrestricted Use Soil Cleanup Objectives (UUSCOs) and Restricted Residential Soil Cleanup Objectives (RRSCOs) contained in Sections 6.8(a) and 6.8(b) of 6 New York Codes, Rules, and Regulations (NYCRR) Part 375.

- No volatile organic compounds (VOCs) were detected above laboratory detection limits.
- No semivolatile organic compounds (SVOCs) exceeded UUSCOs or RRSCOs.
- Metals were detected in both samples, with some concentrations (including cadmium, copper, lead, mercury, nickel, and zinc) above UUSCOs and/or RRSCOs that were attributable to fill materials. However, the level of total lead in one sample indicated the potential for the levels of leachable lead to exceed hazardous waste thresholds in some soils that might be excavated during future construction. Therefore, additional soil waste characterization data would be needed prior to soil disposal.
- PCBs were detected in the samples below UUSCOs and RRSCOs.
- One pesticide (4,4'-DDT) was detected in one sample above its UUSCO but below its RRSCO.

The detections were typical of urban fill material and not indicative of a material release.

GROUNDWATER ANALYTICAL RESULTS

Analytical results from the groundwater sample were compared to the DEC Class GA Ambient Water Quality Standards and Guidance Values (AWQSGVs) contained in the DEC Division of Water Technical Operational and Guidance Series (TOGS) 1.1.1. The AWQSGVs were developed for drinking water; because groundwater at the Project Site is not used for drinking water, the AWQSGVs are referenced for comparison purposes but not applicable to the groundwater at the Project Site.

- No VOCs or SVOCs were detected above laboratory detection limits in the groundwater sample.
- Three metals (iron, manganese, and sodium) exceeded AWQSGVs in the unfiltered groundwater sample. In the dissolved (filtered) analysis, only one metal (sodium) was detected above its AWQSGV. The AWQSGV exceedances in the unfiltered and filtered samples are most likely attributable to urban fill material and/or regional conditions and do not indicate any evidence of a release.
- PCBs were not detected in the groundwater sample.
- One pesticide (endrin) was detected above its AWQSGV at an estimated concentration (below laboratory quantitation limits).

The detections were typical of urban fill material and not indicative of a material release.

SOIL VAPOR ANALYTICAL RESULTS

Soil vapor sample analytical results were compared to the New York State Department of Health (NYSDOH) Indoor Air Guideline Values (AGVs) and Matrix Values contained in the *Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York*, dated October 2006 (and subsequently updated).

- Low-level detections of methylene chloride, tetrachloroethene (PCE), and trichloroethene (TCE) were detected in one or more soil vapor samples, below their respective AGVs or Matrix Values.
- Several petroleum-related compounds, for which there are no AGVs, were detected in the samples.

The detections appeared typical to those encountered in industrial/commercial areas of New York City (NYC). Given that the same compounds were not detected at appreciable levels in the soil at the Project Site, the soil vapor results were not indicative of an on-site release.

C. THE FUTURE WITHOUT THE PROPOSED PROJECT

In the No Action condition, the main hospital complex on Projected Development Site 1 will remain in its current form, with most ambulatory uses relocating to other LHH facilities (including Projected Development Site 1a). Some smaller renovations and space repurposing projects are planned for the existing hospital and will occur independently of the Proposed Project. Under the No Action condition, the Applicant may redevelop Projected Development Site 1a.

The No Action condition may entail demolition of certain existing buildings/foundations and limited excavation. Demolition could disturb hazardous materials within buildings and excavation could increase pathways for human exposure if performed without appropriate controls. However,

the potential for adverse impacts associated with these activities would be minimized by adhering to the following regulatory requirements:

- Prior to demolition, a comprehensive asbestos survey of the existing building would be conducted, including sampling of all suspect ACM. Based on its findings, all identified ACM would be removed and disposed of in accordance with appropriate federal, state, and local requirements.
- Disposal of suspect mercury-containing or suspect PCB-containing equipment would be performed in accordance with applicable regulatory requirements. Any aboveground tanks, drums, or containers of petroleum, chemical, medical/biological, and radiological wastes would be properly disposed of in accordance with federal, state, and local regulations.
- Demolition activities with the potential to disturb LBP would be performed in accordance with the applicable Occupational Safety and Health Administration regulation (OSHA 29 CFR 1926.62 – Lead Exposure in Construction).
- Prior to any building renovation or demolition activities, all remaining chemical, medical/biological, and radioactive materials would be removed from those areas of the site and disposed of in accordance with all applicable regulations.
- Prior to redevelopment, all on-site petroleum storage tanks would be properly closed and removed in accordance with DEC and/or New York City Fire Department requirements. Contaminated soil (and all other materials requiring off-site disposal) would be disposed of in accordance with applicable federal, state, and local requirements. During excavation, any unforeseen USTs would be properly assessed, closed, and removed in accordance with state and local requirements (including those relating to spill reporting and tank registration). Soil intended for off-site disposal would be tested in accordance with the requirements of the receiving facility. Transportation of material leaving the Project Site for off-site disposal would be in accordance with federal, state, and local requirements covering licensing of haulers and trucks, placarding, truck routes, manifesting, etc.
- If dewatering activities are required, they would be performed in accordance with DEP requirements for discharge to sanitary/combined sewers. Pretreatment would be performed if necessary to meet the DEP requirements.

D. THE FUTURE WITH THE PROPOSED PROJECT

As described in Chapter 1, "Project Description," the Proposed Project would entail demolition of portions of the existing hospital, followed by excavation to allow the enlargement and modernization of LHH and the creation of a purpose-built hospital complex to address critical infrastructure challenges and space needs.

The potential for significant adverse impacts would be avoided by following the requirements described above in "The Future without the Proposed Project." However, in addition to those requirements, and since the Proposed Project would include the installation of engineering controls to mitigate the potential for vapor intrusion into the future building, an (E) Designation would be placed on Projected Development Site 1 and Projected Development Site 1a. The Applicant would be required to complete remediation in accordance with the requirements of OER, which would ensure that the appropriate remediation is completed and the engineering controls are properly monitored and maintained regardless of whether Envelope 1 or Envelope 2 is constructed. The (E) Designation (E-777) requirements for hazardous materials are as follows:

TASK 1: SAMPLING PROTOCOL

The applicant submits to OER, for review and approval, a Phase I ESA 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, as part of the (E) Designation requirements, a Remedial Action Work Plan (RAWP) and Construction Health and Safety Plan (CHASP) must be prepared for implementation during construction. The plans will outline procedures for the remediation of known and unforeseen conditions, including: excavation of any identified contaminated soil; environmental oversight, air monitoring and other health and safety measures to protect workers and the surrounding community during remediation/excavation; daily reporting of construction and remedial activities to OER; and post remediation engineering and/or institutional controls, including capping, installation of a sub-slab depressurization system (SSDS), and groundwater monitoring, as appropriate. These plans~~a proposed remediation plan~~ must be submitted to OER for review and approval prior to any soil disturbance. The applicant must complete such remediation as determined necessary by OER. The applicant ~~should~~ must then ~~and provide~~ submit a Remedial Action Report (RAR) with proper documentation that the work has been satisfactorily completed, which must be approved by OER in order to obtain occupancy permits from the Department of Buildings (DOB).

~~A construction related Health and Safety Plan should be submitted to OER and would be 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 the implementation of these procedures, no significant adverse impacts related to hazardous materials would result from the Proposed Project. ✷