

A. INTRODUCTION

This chapter presents the findings of the hazardous materials assessment and identifies potential issues of concern that could pose a hazard to workers, the community, and/or the environment during or after implementation of the proposed actions. The potential for hazardous material conditions within the rezoning area was evaluated based on a Phase I Environmental Site Assessment (ESA) of the proposed development site (AKRF, September 2018), and a hazardous materials screening for the projected future development site and the potential development site, performed by AKRF in May and June 2018. The Phase I ESA and hazmat screening were reviewed by the New York City Department of Environmental Protection (DEP), which concurred with the recommendations below (see Principal Conclusions) in a letter dated October 12, 2018 (see **Appendix D**).

The Phase I ESA, conducted in accordance with the American Society of Testing Materials (ASTM) Standard E1523-13, and the hazardous materials screening included: a visual inspection of each site¹ and surrounding area; review of available records and historical maps; and an evaluation of federal and state environmental regulatory databases. A list of the study sites is included as **Table 9-1**, and their locations are shown in **Figure 1-1**.

The proposed actions would result in demolition of the existing commercial structures on the proposed development site, and construction of five buildings with residential, commercial, and community facility uses on the proposed development site. The rezoning associated with the proposed actions would also be anticipated to result in redevelopment of the projected future development site. This analysis also considers that redevelopment of the potential development site could occur as a result of the proposed rezoning.

The proposed actions would result in demolition of existing structures and soil disturbance associated with future construction at the proposed development site. Due to the increased potential for development, the proposed actions also would increase the potential for future demolition and soil disturbance at the projected future development site and the potential development site.

Table 9-1
Study Site Tax Block and Lot Numbers

Site Name	Block & Lot
Proposed Development Site	Block 1730, Lots 1,7,9,25,33,36,40,45,50,52,64,68, and 75
Projected Future Development Site	Block 1730, Lot 65
Potential Development Site	Block 1730, Lots 16 and 19

¹ For the projected future development site and potential development site, the inspection was limited to public rights-of-way.

PRINCIPAL CONCLUSIONS

The hazardous materials assessment identified various potential sources of contamination on, or in close proximity to, the rezoning area. Potential sources of contamination may include: past and present petroleum storage, reported spills (all closed), and hazardous waste generation on the proposed development site; historical uses of the proposed development site (including paint shops, manufacturing, printing, an electrical substation, and dry cleaning); historical petroleum storage on the projected future development site; past and present uses of the surrounding area (including dry cleaners and undertakers); and reported petroleum storage facilities, spills, and hazardous waste generators in close proximity to the rezoning area. To reduce the potential for adverse impacts associated with new construction resulting from the proposed actions, further environmental investigations will be required as follows:

- Prior to any subsurface disturbance, a Subsurface (Phase II) Investigation, including the collection of samples for laboratory analysis, would be conducted, with sampling locations biased toward the proposed areas of disturbance. It is anticipated that due to access considerations, it will not be possible to conduct a Phase II on the proposed development site prior to the completion of the CEQR process.
- For the projected future development site, potential development site, and proposed development site, a hazardous materials (E) designation (E-547) would be assigned to ensure that soil testing and any necessary remedial activities would be undertaken prior to and/or, as necessary, during redevelopment. The (E) designation would ensure that appropriate procedures for any necessary subsurface disturbance would be followed prior to, during, and following construction. The following actions would be required by the (E) designation prior to obtaining New York City Department of Buildings (DOB) permits for each new development entailing soil disturbance or change to a more sensitive building use (since development of each site would likely occur independently, this process would apply to each site separately):
 - Prior to subsurface investigation, the (E) designation for that site would require the preparation of a Phase I ESA in accordance with ASTM Standard E1527-13 (a Phase I ESA has already been prepared for the proposed development site).
 - Based on Phase I ESA findings, a subsurface investigation of the area to be redeveloped would be performed in accordance with a New York City Office of Environmental Remediation (OER)-approved sampling protocol.
 - Based on the findings of the investigation, a site-specific Remedial Action Plan and Construction Health and Safety Plan (RAP and CHASP) would be prepared for implementation during construction at that site, and submitted to OER for review and approval. The RAP and CHASP would address requirements for items such as: soil stockpiling, soil disposal and transportation; dust control; quality assurance; and contingency measures should petroleum storage tanks or contamination be unexpectedly encountered. The CHASP would include measures for worker and community protection, including personal protective equipment and dust control. OER approval of the RAP and CHASP would be required prior to obtaining construction permits for that site from DOB.
 - Following the completion of soil disturbance, the (E) designation would require the submission of a Remedial Closure Report (RCR) to OER for review and approval to obtain a Notice of Satisfaction and Certificates of Occupancy for each newly constructed structure. The RCR would document proper performance of all procedures required by the RAP and CHASP.

The hazardous materials assessment also identified the potential for hazardous materials in existing buildings (such as asbestos-containing materials [ACM], lead-based paint [LBP], and polychlorinated biphenyl [PCB]-containing equipment and lighting fixtures). Regulatory requirements for maintenance and (if necessary) disposal of such materials prior to or during demolition would continue to be followed.

With the implementation of the above measures, the proposed actions would not result in any significant adverse impacts with respect to hazardous materials.

B. POTENTIAL CONTAMINANTS OF CONCERN

Soil and groundwater can become contaminated as a result of past or current activities either at a site or nearby. Such contamination can remain undetected for many years without posing a threat to health or the environment. Excavation, earthmoving, dewatering, and other construction or demolition activities can, however, expose the contaminants, provide a pathway of exposure and, if such contaminants are not properly managed, introduce potential risk to construction workers and others.

Demolition of existing structures that have ACM, LBP, or equipment containing PCBs also has the potential to release contaminants if these materials are not properly managed.

Based on the types of contaminants that are typically found in New York City and past and present uses in the rezoning area, some of the potential contaminants of concern are described below. The list provides a summary of categories of contaminants but is not a comprehensive list of all contaminants that could be encountered:

- ***Volatile organic compounds (VOCs):*** These include aromatic compounds—such as benzene, toluene, ethylbenzene, xylene (BTEX), and methyl tertiary butyl ether (MTBE), which are found in petroleum products (especially gasoline)—and chlorinated compounds, such as tetrachloroethene (also known as PCE, perchloroethylene or “perc”) and trichloroethene, which are common ingredients in solvents, degreasers, and cleansers. VOCs represent the greatest potential for concern since, in addition to contaminating soil and groundwater, they can generate vapors that migrate into buildings.
- ***Semivolatile organic compounds (SVOCs):*** The most common SVOCs in urban areas are polycyclic aromatic hydrocarbons (PAHs), which are constituents of partially combusted coal- or petroleum-derived products, such as coal ash and fuel oil. PAHs are commonly present in New York City urban fill materials. In addition, petroleum-related SVOCs could be associated with petroleum storage tanks currently or formerly located on-site.
- ***PCBs:*** Historically used in electrical transformers (as a dielectric fluid), some underground high-voltage electric lines, hydraulically operated machinery, and fluorescent lighting ballasts. PCBs tend to travel only short distances in soil.
- ***Pesticides, herbicides, and rodenticides:*** These are commonly used to control rodents, insects, and vegetation in vacant structures or in vegetated areas.
- ***Metals (including lead, arsenic, cadmium, chromium, and mercury):*** Metals are often used in smelters, foundries, and metal works and are found as components in paint, ink, petroleum products, and coal ash. Metals are frequently present in fill material throughout the New York metropolitan area. However, metals tend not to migrate far in soil; therefore, they would be of greatest concern near the location where they were generated. In addition, the age of many buildings in the rezoning area indicates that they may contain lead-based paint, which was

allowed for use in New York City residential buildings until 1960, and restricted for use in commercial buildings by the Consumer Products Safety Commission in 1977.

- **Fuel oil and gasoline from storage tanks:** The previous studies identified known and/or potential petroleum-containing storage tanks for the proposed development site and both projected future development site, and closed-status petroleum spill listings for the proposed development site.
- **Fill materials of unknown origin:** In the past, waste materials, including coal and incinerator ash, demolition debris, and industrial wastes, were commonly used as fill in urban areas. Even fill material consisting primarily of soil may exhibit elevated levels of PAHs, metals, PCBs, or other contaminants.
- **Asbestos:** Asbestos is a generic name for a group of naturally occurring minerals. Before 1990, these minerals were commonly used in various building materials, such as insulation, fireproofing, roofing, plaster, and floor and ceiling tiles, due to their excellent fire resistance and insulating properties. ACM are classified as friable or non-friable. Friable ACM, such as spray-applied fireproofing and thermal system insulation, are those which when dry can be crumbled, pulverized, or reduced to powder by hand or other mechanical pressure and present a greater health concern than non-friable ACM (such as vinyl floor tiles and some asphaltic roofing materials), as they more readily release asbestos fibers. In 1990, use of most ACM, except some non-friable ACM, was banned by the federal Clean Air Act, but buildings on the study sites are likely to contain them because they were built before 1990. In addition to materials within existing structures, subsurface utility lines may be coated with asbestos or encased in ACM “transite.”

C. EXISTING CONDITIONS

SUBSURFACE CONDITIONS

The rezoning area is approximately 15 to 20 feet above mean sea level, with surface topography sloping slightly down toward the northeast. Based on USGS mapping and previous studies of the proposed development site, bedrock is anticipated to be approximately 20 to 95 feet below grade, sloping steeply down toward the northeast, and groundwater is anticipated to be approximately 15 feet below grade. Based on surface topography, groundwater likely flows in a generally northeasterly direction toward the Harlem River, approximately 1,000 feet away. Actual groundwater depth and flow direction may be influenced by nearby subway tunnels, including the 2/3 Line tunnels beneath west-adjacent Lenox Avenue, and other factors. Groundwater in Manhattan is not used as a source of potable water.

HAZARDOUS MATERIALS ASSESSMENT

The Phase I ESAs and the hazardous materials screening included: a visual inspection of each site and surrounding area (for the projected future development site and the potential development site, the inspection was conducted from public rights-of-way); a review of available records and historical maps; and an evaluation of federal and state environmental regulatory databases. The Phase I ESA also included interviews with personnel knowledgeable about the proposed development site.

PROPOSED DEVELOPMENT SITE

At the time of the reconnaissance (April 19 and 20, 2018), the proposed development site was occupied by: six 16-story residential buildings with basements; five one-story commercial

buildings with basements; two vacant lots on Lot 7 and part of Lot 68; and paved parking lots and landscaping. The commercial building on Lot 33 was vacant. The Phase I ESA identified the following, including Recognized Environmental Conditions (RECs) (findings No. 1 through 5):

- 1) Each of the on-site residential buildings was heated historically by a 20,000- to 25,000-gallon No. 6 fuel oil underground storage tank (UST). These tanks were registered with the New York State Department of Environmental Conservation (DEC) as closed-in-place; however, no closure documents were provided, and there were some discrepancies between DEC and DOB records regarding the USTs' closure dates and sizes. Documents associated with Spill No. 0100589, reported for Lot 45 in 2001, indicated that a historical UST on either this lot or Lot 36 had leaked, and was removed in 2002 along with contaminated soil. Some residual contamination reportedly remained along the adjacent building's foundation. The DEC registrations for Lots 36 and 45 had not been updated to reflect removal.
- 2) During the reconnaissance, two 275-gallon No. 2 fuel oil aboveground storage tanks (ASTs) were observed on-site in the basement of the commercial building on Lot 1, at 458 Lenox Avenue. Fuel oil staining and spill cleanup materials were noted on the concrete floor beneath the tanks, but did not appear likely to have affected the subsurface. The leak was reportedly due to overfill during tank fueling two days before the reconnaissance.
- 3) The proposed development site historically included an electrical substation on Lot 7 and dry cleaners (registered as hazardous waste generators) on Lots 33 and Lot 68. In addition, AKRF's reconnaissance identified a dry cleaner on Lot 1; although no dry cleaning operations were reportedly conducted on premises at the time, the facility may have utilized chlorinated solvents in the past. A 2005 subsurface investigation conducted by AKRF in the vicinity of the former electrical substation identified SVOCs commonly associated with fill materials in soil samples. In addition, the investigation detected low levels in soil and groundwater of the VOC PCE, which is used in dry cleaning.
- 4) Based on historical Sanborn maps and City Directories (telephone listings), historical uses of the proposed development site included paint shops, a factory, a printer, a funeral home, gasoline USTs, and a trucking company. These historical uses may have affected subsurface conditions. Historical structures may have been heated by fuel oil tanks, which may have been removed, or remain beneath the proposed development site.
- 5) The surrounding area historically included dry cleaners, undertakers, a furrier, a paint shop, and garages with gasoline USTs. Dry cleaners and an undertaker were observed on adjacent blocks during the reconnaissance. The regulatory database identified reported petroleum spills, petroleum storage facilities, a chemical storage facility, and hazardous waste generators in close proximity to the proposed development site.
- 6) In addition to Spill No. 0100589, 20 closed-status petroleum spills were reported to DEC in connection with on-site petroleum storage tanks. Based on listing details, no significant potential for subsurface contamination is associated with these spills.
- 7) At the time of the reconnaissance, each of the on-site residential buildings was heated by two 10,000-gallon No. 4 fuel oil ASTs located in a concrete vault in the basement. The ASTs were observed to be in good condition, with no odors or staining noted in the tank vaults. A slight sheen was noted on water in sumps in the boiler rooms of 25 West 132nd Street (Lot 25) and 470 Lenox Avenue (Lot 75), but no odors or floor staining were noted in the boiler rooms. The ASTs were registered with DEC; however, some registrations had not been updated to reflect a change in contents from No. 6 to No. 4 fuel oil after the tanks' installation.

Lenox Terrace

- 8) The subsurface investigation of Lot 7 indicated the presence of fill materials beneath this portion of the proposed development site. Similarly, fill materials may be present beneath other portions of the proposed development site, potentially including those which will be redeveloped as part of the proposed project.
- 9) During the reconnaissance, two apparent groundwater monitoring wells were noted in the Fifth Avenue and West 135th Street sidewalks adjacent to the proposed development site. Apparent monitoring wells were also noted in previous studies on Lots 36 and 64, but were not observed during AKRF's recent reconnaissance. Site representatives were not aware of the wells' purpose; these wells may have been installed in connection with past spill investigations at the proposed development site.
- 10) Based on the age of the buildings, the potential for ACM, lead-based paint, and/or PCB-containing equipment and lighting fixtures has been identified. Observed interior building materials were in good condition with the exception of the interiors of the vacant building on Lot 33, where damaged suspect ACM and painted surfaces were observed. In addition, electrical transformer vaults (which may contain PCBs and/or lead-based paint) were located on and adjacent to the proposed development site.
- 11) Chemical storage in occupied on-site buildings included paint and cleaning and maintenance chemicals in containers up to 55 gallons (generally 5 gallons or smaller). The chemicals were observed to be neatly stored and labeled, with no evidence of a release. Stored chemicals were observed in the vacant building on Lot 33. Although these chemicals were neatly stored and no spills or leaks were evident, the building has been vacant for approximately 15 years. The chemicals appeared unused and would be considered abandoned.
- 12) Electrical transformer vaults were noted on and adjacent to the proposed development site. Although spills and hazardous waste generation were reported for the vaults, these releases appeared likely to be contained within the structures, with no impact to the subsurface.

PROJECTED FUTURE DEVELOPMENT SITE

At the time of the reconnaissance (April 19, 2018), this site was occupied by a two-story church building with a basement. The following potential sources of contamination on or adjacent to the site were identified:

- A 1968 oil burner application was identified in New York City Buildings Department records. No information regarding tank status or configuration (AST or UST) was available.
- Past and present site uses were identified in the surrounding area, including paint shops, a printer, dry cleaners, undertakers, and registered petroleum bulk storage facilities (some with reported spills) and hazardous waste generators. A dry cleaner was historically located on Lot 68 of the proposed development site, west-adjacent to the projected future development site.
- Based on the building's age (built in 1915), the potential for ACM, lead-based paint, and/or PCB-containing equipment and lighting fixtures has been identified.

POTENTIAL DEVELOPMENT SITE

At the time of the reconnaissance (April 19, 2018), this site was occupied by a three-story (plus basement) community center (the Catholic Charities Lt. Joseph P. Kennedy Center), a three-story (plus basement) accessory building for the Kennedy Center, and an asphalt-paved area containing parking and a playground. A small outdoor swimming pool was observed at the rear (south) of

the Kennedy Center. The following potential sources of contamination on or adjacent to the site were identified:

- The regulatory database indicated that an active 5,000-gallon No. 2 fuel oil UST was present at the Kennedy Center, and was installed in 1959. A vent pipe and a fill port, presumably associated with this UST, were observed on the northern building façade. DOB records indicated fuel oil use at the Kennedy Center as early as 1940, possibly indicating that an older tank pre-dated the existing UST.
- Past and present site uses identified in the surrounding area included paint shops, a printer, dry cleaners, undertakers, and registered petroleum bulk storage facilities (some with reported spills) and hazardous waste generators.
- Based on the buildings' age (built between 1939 and 1950), the potential for ACM, lead-based paint, and/or PCB-containing equipment and lighting fixtures has been identified.

D. FUTURE WITHOUT THE PROPOSED PROJECT

In the future without the proposed actions (the “No Action scenario”), no change in use is anticipated within the rezoning area (including within the proposed development site, the projected future development site, and the potential development site). Legal requirements, such as those relating to petroleum storage tank maintenance and handling and disposal of ACM, LBP and PCBs, would continue to be applicable.

E. FUTURE WITH THE PROPOSED PROJECT

The proposed actions would involve: demolition of existing buildings on the proposed development site; new development on the proposed development site; and the potential for building demolition and new development on the projected future development site and the potential development site. The proposed actions would thus entail soil disturbance and demolition of existing buildings.

As noted above, the potential for subsurface contamination has been identified for the proposed development site and the projected future development site. Although the demolition and construction activities associated with the proposed actions could increase pathways for human exposure, impacts would be avoided by performing site development activities in accordance with the following measures:

- Prior to any subsurface disturbance, a Subsurface (Phase II) Investigation, including the collection of samples for laboratory analysis, would be conducted, with sampling locations biased toward the proposed areas of disturbance. It is anticipated that due to access considerations, it will not be possible to conduct a Phase II on the proposed development site prior to the completion of the CEQR process.
- For the projected future development site, potential development site, and the proposed development site, a hazardous materials (E) designation (E-547) would be assigned to ensure that soil testing and any necessary remedial activities would be undertaken prior to and/or, as necessary, during redevelopment. The (E) designation would ensure that appropriate procedures for any necessary subsurface disturbance would be followed prior to, during, and following construction. The four numbered items below would be required by the (E) designation prior to obtaining DOB permits for each new development entailing soil disturbance or, in the unlikely event, that an existing building is changed to residential use.

Since development of each site would likely occur independently, this process would apply to each site separately.

1. Prior to subsurface investigation, the (E) designation for that site would require the preparation of a current Phase I ESA in accordance with ASTM Standard E1527-13 (a Phase I ESA has already been prepared for the proposed development site).
 2. Based on Phase I ESA findings, a subsurface investigation of the area to be redeveloped would be performed in accordance with an OER-approved sampling protocol.
 3. Based on the findings of the investigation, a site-specific RAP and CHASP would be prepared for implementation during construction at that site, and submitted to OER for review and approval. The RAP and CHASP would address requirements for items such as: soil stockpiling, soil disposal and transportation; dust control; quality assurance; and contingency measures should petroleum storage tanks or contamination be unexpectedly encountered. The CHASP would include measures for worker and community protection, including personal protective equipment and dust control. OER approval of the RAP and CHASP would be required prior to obtaining construction permits for that site from DOB.
 4. Following the completion of soil disturbance (or before allowing residential use of an existing building), the (E) designation would require the submission of an RCR to OER for review and approval to obtain a Notice of Satisfaction and Certificates of Occupancy for the new (or existing) structure. The RCR would document proper performance of all procedures required by the RAP and CHASP.
- If dewatering is necessary as part of the proposed construction activities, water would be discharged to sewers in accordance with DEP requirements.
 - The ASTs on Lot 1 of the proposed development site should be re-inspected to verify that the fuel oil leak was properly cleaned up, and any remaining staining should be properly cleaned. The sumps of the residential buildings on Lots 25 and 75 of the proposed development site should be cleaned to remove the observed sheen.
 - All active petroleum storage tanks on the proposed development site, potential future development site, and potential development site should be properly maintained to prevent future releases. Any petroleum storage tanks that may be disturbed by the proposed actions should be properly closed and removed, along with any contaminated soil, in accordance with applicable regulations. DEC registrations for the tanks should be updated as needed (e.g., to reflect the correct tank contents, status, etc.)
 - The reported removal of a UST on Lot 36 or 45 of the proposed development site should be confirmed using available records; if one of these USTs has been removed, its DEC registration should be updated accordingly. Any USTs encountered during the proposed actions should be properly assessed, closed, and removed, along with any contaminated soil, in accordance with the applicable regulations, which may include DEC registration and/or spill reporting regulations.
 - Similarly to the No Action scenario, disturbance or removal of suspect ACM, lead-based paint, PCB-containing materials, and/or mercury-containing fluorescent lighting fixtures should be in accordance with the applicable regulations. Additional lead based paint-related requirements even if no disturbance is planned (e.g., tenant notification, inspections and abatement) apply to residential buildings and certain other sensitive uses.
 - Any chemicals requiring disposal, including the abandoned chemicals in the building on Lot 33 of the proposed development site, should be disposed of off-site in accordance with the applicable regulations.

The text for the (E) designations related to hazardous materials for: the proposed development site; the projected future development site; and the potential development site is as follows:

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 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 this (E) designation in place and the above measures set out above, no significant adverse impacts related to hazardous materials are expected, and no further analysis is warranted. *