PARK AVENUE BROOKLYN REZONING
Chapter 6: Hazardous Materials

A. INTRODUCTION

This chapter provides an evaluation of the potential presence of hazardous materials in soil, groundwater, and/or soil vapor that could be encountered as a result of the Proposed Actions. As indicated in the 2025 *City Environmental Quality Review (CEQR) Technical Manual*, the primary goal of a hazardous materials assessment is to determine whether a proposed action would lead to a potential increased exposure of hazardous materials to people or the environment, and furthermore whether the increased exposure would lead to significant public health impacts or environmental damage.

As described in **Chapter 1, "Project Description,"** the Proposed Actions include a proposed zoning map amendment to rezone portions of existing M1-1 and M1-2 zoning districts to M1-4/R7D and M1-4/R6-1 Special Mixed-Use MX-4 (Flushing/Bedford) districts. A zoning text amendment to Appendix F of the Zoning Resolution is requested to establish the Project Area as a Mandatory Inclusionary Housing (MIH) Area. The Proposed Actions are intended to promote economic growth, facilitate the development of housing, including affordable housing, and development of three (3) new private education institutions.

The Proposed Actions would affect an approximately 3-block area along Park Avenue in Brooklyn Community District 3 (the "Project Area"). The Project Area is bounded by a depth of 250 feet from Park Avenue on the eastern side of Block 1715 and the western side of Block 1716, a depth of 225 feet from Park Avenue on Block 1735, a depth of 100 feet from Park Avenue on the eastern side of Block 1716 and on Block 1717, and a depth of 325 feet from Park Avenue on Block 1736.

Within the Project Area, the reasonable worst case development scenario (RWCDS) identified a total of twelve (12) Projected Development Sites (nine of which are Applicant-controlled) and two (2) Potential Development Sites. This hazardous materials assessment will determine which, if any, of these Projected and Potential Development Sites may contain contaminated materials due to current or historical uses on- or off-site. The assessment is based on:

- An evaluation conducted by Fleming Lee Shue (FLS) in Paril 2023 of the Project Area that included a comprehensive review of regulatory databases, historic Sanborn Fire Insurance Maps, City directories, and a street-level site reconnaissance; and
- Three May 2025 Phase I ESAs prepared by FLS for the Applicant-controlled projected development sites: *Phase I ESA – Park Avenue Rezoning – Northern Sector, Phase I ESA – Park Avenue Rezoning – Central Sector,* and *Phase I ESA – Park Avenue Rezoning – Eastern Sector*.

B. PRINCIPAL CONCLUSIONS

The Proposed Actions would not result in significant adverse impacts related to hazardous materials. A preliminary analysis of potential hazardous materials impacts was performed for each of the twelve (12) Projected and two (2) Potential Development Sites. The hazardous materials assessment identified that all of the Projected and Potential Development Sites have some

associated concern regarding hazardous materials conditions (as indicated in **Table 6-1** at the end of this chapter).

Throughout its developed history, the Project Area has been composed of a mix of residential, commercial and industrial properties. By the early 1900s commercial and industrial operations were heavily developed along Park Avenue. The majority of the Projected and Potential Development Sites were either historically used or had neighboring properties used for automotive and/or manufacturing operations including fur and felt operations, foundries, plastic goods manufacturing, gasoline filling stations, automobile repair and junkyards.

The Proposed Actions would entail demolition of the existing structures and excavation for new construction. To avoid any potential for hazardous materials exposure on the nine (9) Applicant-controlled Projected Development Sites, and the three (3) Projected Development and two (2) Potential Development Sites not controlled by the Applicant, an (E) Designation (E-898) for hazardous materials would be placed on the tax lots to ensure that the applicant completes the remediation in accordance with the requirements of the New York City Mayor's Office of Environmental Remediation (OER). A hazardous materials (E) Designation is an institutional control that can be placed on a property as a result of CEQR review of a zoning action. An (E) designation is a mechanism to ensure that testing for and mitigation and/or remediation of hazardous materials are completed prior to or as a part of the future development of a site, thereby limiting or eliminating the potential for a hazardous materials impact and to ensure for the protection of human health and the environment. Generally, redevelopment of a site with an (E) Designation for hazardous materials will require review from the OER and documentation of hazardous materials exposure mitigation prior to the issuance of New York City Department of Buildings (DOB) development permits.

In summary, due to various environmental conditions, the Proposed Actions may increase exposure pathways for hazardous materials. However, the implementation of these procedures/controls would ensure that investigation, mitigation, and remediation of any hazardous materials under the Proposed Actions would be completed in a safe, and comprehensive manner.

C. EXISTING CONDITIONS

Topography and Subsurface Conditions

Based on the United States Geological Survey (USGS) topographic maps, the Project Area is approximately 40 to 50 feet above the North American Vertical Datum (NAVD) of 1988 (an approximation of mean sea level). Groundwater depth is thought to be variable throughout the Project Area, but based on topography it is likely approximately 20 to 30 feet below ground surface (bgs). Based on historic groundwater sampling data from historical remediation sites within the vicinity of the Project Area, groundwater flow direction is generally thought to flow to the northwest towards Wallabout Bay, the Brooklyn Navy Yards and, ultimately, the East River.

Hazardous Materials Assessment

Project Area Conditions

The comprehensive environmental review conducted by FLS in 2023 was in general accordance with ASTM Standard E1527-13, *Standard Practice for Environmental Site Assessments: Phase I*

Environmental Site Assessment Practice. However, the Sanborn Map and City Directory review was limited to the target properties and adjacent properties within the boundaries of the Project Area. The regulatory database review was also conducted in accordance with the protocols outlined in the ASTM-E-1527-21 standard and encompassed each of the development sites and a 400-foot radius around each site or cluster of sites. Sites were inspected from the surrounding sidewalks and streets.

Based on the review by FLS, throughout its developed history, the Project Area has been composed of a mix of residential, commercial and industrial uses. According to Sanborn Fire Insurance Maps the majority of the Project Area was densely developed as a mixed-use residential, commercial and industrial neighborhood as early as 1887. At this time, industrial and mixed-use commercial operations were primarily concentrated along Park Avenue, while the northern and southern boundaries of the Project Area remained primarily residential.

By the early 1900s the Project Area experienced increased industrial and automotive development along Park Avenue. In several areas smaller commercial lots were merged and developed with various manufacturing and commercial operations including metal foundries, a fur and felt hat manufacturing, chocolate manufacturing, parking garages and gasoline filling stations. Throughout the majority of the 20th Century the Project Area remained largely an industrial manufacturing and commercial corridor with small shrinking pockets of residential developments at the northern and southern boundaries. Various new manufacturing and commercial operations came and went in this time including a plastic products manufacturer, metal bed manufacturing, raw materials storage, leather tannery, auto repair, and several unspecified manufacturing operations. Beginning in the 1970s, many manufacturing developments were demolished and redeveloped with commercial developments, including parking lots and storage warehouses. The Project Area has remained largely unchanged to the present day.

The current and former uses of the Project Area, including uses listed within Appendix A of Title 15, Chapter 24, indicate the potential presence of several environmental contaminants of concern. Chlorinated solvents and heavy metals are contaminants of concern due to certain historic manufacturing operations within the Project Area. Similarly, auto repair and filling stations that currently and formerly operated in the Project Area, are associated with subsurface impacts from petroleum and solvent related compounds.

Projected and Potential Development Site(s) Conditions

Similar to the general development of the Project Area, the majority of Projected and Potential Development Sites were either historically utilized or had a neighboring property historically utilized for industrial, commercial and/or automotive services. In particular, Projected and Potential Development Sites located along the primary thoroughfare, Park Avenue, were either historically developed as commercial and/or manufacturing operations, including fill stations, automobile repair, parking garages, plastic manufacturing, metal foundries, tannery, felt and fur hat manufacturing and other unspecified manufacturing uses.

The majority of Projected and Potential Development Sites have historic site-use or environmental conditions listed within Appendix A of Title 15, Chapter 24. Historic hazardous materials use at these sites, likely included petroleum and chlorinated solvent-related compounds, and metals, which may have affected subsurface conditions at the development site(s), including soil, groundwater, and/or soil vapor. Similarly, the majority of Projected and Potential Development Sites have historic neighboring Site-use associated with hazardous materials, including those uses listed in Appendix A of Title 15, Chapter 24. Given the unconfirmed and potentially variable nature of the flow direction of groundwater throughout the Project Area, contaminant fate and transport are not fully known at this time. However, it is inferred that Projected and Potential

Development Sites within a reasonable distance (allowing for potential migration through groundwater flow) and downgradient or cross-gradient from neighboring properties with a history of contaminant exposure could have been impacted by hazardous materials, including impacts to soil, groundwater, and/or soil vapor.

Phase I ESAs

Three May 2025 Phase I ESAs were prepared by FLS for the Applicant-controlled Projected Development Sites: Phase I ESA – Park Avenue Rezoning – Northern Sector, Phase I ESA – Park Avenue Rezoning – Central Sector, and Phase I ESA – Park Avenue Rezoning – Eastern Sector (refer to **Appendix B**). The ESAs were conducted in accordance with ASTM Standard E1527-21.

The FLS assessments identified Recognized Environmental Concerns (RECs) in association with historic usage of the Applicant-controlled Projected Development Sites, as well as surrounding properties, including the following:

- Projected Development Site 1 (517 Park Avenue): Historic use included a brass foundry, a parking garage, a cocoa and chocolate manufacturer, a plastic products manufacturer, automotive repair, and a warehouse. The 1935 Sanborn Fire Insurance Map depicted an underground gasoline tank of unknown volume within the northeastern portion.
- Projected Development Site 2 (41-49 Spencer Street): Historic use was generally limited to residential buildings, storefronts, and a warehouse, and has been utilized for outdoor storage since at least 2016.
- Projected Development Site 3 (525-535 Park Avenue): Historic use included residential and commercial development, an automotive junkyard, building supplies storage, and an appliance storefront.
- Projected Development Site 4 (547 Park Avenue): Historic use included manufacturing operations, gasoline filling stations, a machine shop, a foundry, a lumber yard, a parking lot and commercial uses.
- Projected Development Site 5 (528 Park Avenue): Historic use included a warehouse for fur cutting and manufacturing, wooden toy manufacturing, leather tanneries, plastics manufacturing, a parking lot, a tire repair facility, a pallet construction and sale operation, and commercial uses.
- Projected Development Site 6 (76-82, and 96 Sandford Street; 79-89 Walworth Street): Historic use included commercial, unspecified manufacturing and industrial uses, a silk oiling operation, a charcoal storage area, a metal sheeting manufacturer, and automotive repair. A gasoline tank of unknown volume was depicted on the Sanborn Fire Insurance maps until circa 1950.
- Projected Development Site 8 (86-88 Walworth Street): Historic use included residential properties, delivery service buildings, a warehouse, and a parochial school/yeshiva.
- Projected Development Site 9 (520 Park Avenue and 82-84 Walworth Street): Historic use included storefronts, residences, an automotive garage, and a paper manufacturing facility. The Sanborn Fire Insurance Maps depicted an underground gasoline tank near the northern site boundary until circa 1986. The site is identified as Petroleum Bulk Storage (PBS) site No. 2-483265, with a closed in-place 2,000-gallon steel gasoline storage tank with no secondary containment.

- Projected Development Site 10 (514 Park Avenue): Historic uses included a bakery, a residential dwelling, wood working operations, warehouse operations, and a parking lot.
- Historic Fill: Historic fill material may be present within the projected development sites.
- Surrounding Properties: Surrounding property uses of concern included the presence of gasoline service stations, automotive repair facilities, and various manufacturing and industrial uses.

D. THE FUTURE WITHOUT THE PROPOSED ACTIONS (NO-ACTION CONDITION)

Under the No-Action condition, two (2) sites within the Project Area are expected to be redeveloped on an as-of-right basis pursuant to existing zoning. Projected Development Site 2 (49 Spencer Street) is a currently vacant site expected to be redeveloped with a mixed-use building with commercial office, retail, and medical office space. Similarly, Projected Development Site 12 is a currently vacant site that is expected to be redeveloped with a one-story commercial building that would allow the property owner to incorporate all required parking on the lot without the increased cost of excavation to put parking below grade. All other Projected and Potential Development Sites are assumed to remain unchanged from existing conditions. As such, in the future without the Proposed Actions, 10 of the 12 Projected Development Sites would remain as in the existing condition, while 2 of the 12 Projected Development Sites are expected to be redeveloped or undergo conversion/re-occupation. The two Potential Development Sites would remain the same as under existing conditions.

Without the Proposed Actions, any subsurface contamination at previously developed sites would remain largely in place, and any hazardous source material would generally migrate with groundwater flow. Vacant properties would remain vulnerable to illegal dumping of unknown materials that could expose development sites to additional contaminants.

Should vacant Projected and Potential Development Sites be redeveloped as-of-right under existing zoning, any construction activity involving soil disturbance could potentially create or increase pathways for human exposure to any subsurface hazardous materials present. New York State Department of Environmental Conservation (NYSDEC) regulatory requirements pertaining to any identified petroleum tanks and/or spills, requirements for disturbance and handling of suspect lead-based paint, asbestos-containing material and PCB-containing material, and requirements for off-site disposal of soil/fill, would need to be followed.

However, under the No-Action Condition, regulatory oversight or institutional controls would not be applied to any of the Projected or Potential Development Sites and as such, construction activity involving soil disturbance, should any occur, may not be conducted in accordance with the best practices and procedures of OER. These procedures include preparation of a Phase I ESA, a Phase II ESA/Remedial Investigation Report (RIR), Remedial Action Work Plan (RAWP), Construction Health and Safety Plan (CHASP) and site remediation conducted with the regulatory oversight of OER. As such, absent the Proposed Actions, investigation, mitigation and remediation of any potential hazardous materials may be less stringent, comprehensive and protective of human health and the environment.

E. THE FUTURE WITH THE PROPOSED ACTIONS (WITH-ACTION CONDITION)

The Proposed Actions would not result in significant adverse impacts related to hazardous materials. The hazardous materials assessment identified environmental conditions at certain Projected and Potential Development Sites and neighboring sites consistent with the listed uses and environmental conditions provided in Appendix A of Title 15, Chapter 24, and are generally considered the equivalent of RECs as defined under ASTM E1527-21 for the presence or likely presence of hazardous materials. The hazardous materials analyses summary provided in **Table 6-1** provides a list of environmental conditions and associated recommendations for both Projected and Potential Development Sites.

The Proposed Actions would entail demolition of the existing structures and excavation for new construction, which could increase the possibility of exposure to hazardous materials resulting from the associated RWCDS. However, to avoid the potential for these impacts on the nine (9) Applicant-controlled Projected Development Sites as well as the three (3) Projected Development and two (2) Potential Development Sites not controlled by the Applicant, an (E) Designation (E-898) for hazardous materials would be placed on all tax lots to ensure that the applicant completes the remediation in accordance with the requirements of OER.

Generally, applying an (E) Designation to a development site provides a mechanism for regulatory oversight for future remedial action as a pre-construction requirement that would reduce or eliminate the potential for future risk or exposure as it relates to hazardous materials to the maximum extent practicable. Compliance in association with the hazardous materials (E) Designation on the development site would be conducted under the administration of OER.

The (E) Designation process generally begins with the evaluation of RECs and/or areas of concern (AOCs) that may require additional investigation. Any potential RECs or AOCs identified would follow the (E) Designation protocol for additional investigation and potential remedial action. The applicable text for the (E) Designation to be applied to all Projected and Potential Development Sites would be as follows:

Task 1: Sampling Protocol

Prior to construction, the applicant submits to OER, for review and approval, a Phase II Investigation protocol, including a description of methods and a site map with all sampling locations clearly and precisely represented.

No sampling should begin until written approval of a protocol is received from OER. The number and location of sample sites should be selected to adequately characterize the site, the specific source 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 the 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 the test results, a proposed Remedial Action Work Plan (RAWP) must be submitted to OER for review and approval. The applicant must complete such remediation as determined necessary by OER in accordance with the approved RAWP. The applicant should then provide proper documentation that remedial action has been satisfactorily completed.

An OER-approved construction-related Health and Safety Plan (CHASP) would be implemented during excavation and construction activities to protect workers and the community from potentially significant adverse impacts associated with contaminated soil and/or groundwater. This plan would be submitted to OER for review and approval prior to implementation.

In addition to the measures outlined in this chapter for the development sites, regulatory requirements relating to asbestos, lead-based paint and PCBs in building materials would be followed as part of standard demolition practices. Overall, under the Proposed Actions, the majority of the twelve (12) Projected and two (2) Potential Development Sites would be expected to be redeveloped. At sites identified with potential subsurface contamination from hazardous materials, construction activity involving soil disturbance may create or increase pathways for exposure to potential subsurface impacts. However, as previously stated, by implementing the measures outlined above on these sites, the potential for an adverse impact to human health and the environment resulting from the Proposed Actions would be largely mitigated or avoided altogether. These measures would ensure investigation, mitigation, and remediation of any hazardous materials under the Proposed Actions would be completed in a safe, and comprehensive manner. Given these procedures, the With-Action condition would not result in any significant adverse impacts with respect to hazardous materials for the identified Projected and Potential Development Sites.

TABLE 6-1
Projected and Potential Development Site Environmental Conditions and Recommendations

Site No.	Site Lot	Tax Block	Tax Lot	Existing Zoning	Sanborn Maps	City Directory	Environmental Databases	Site Inspection	Onsite Environmental Concern	Offsite Environmental Concern	Institutional Control
1	a	1715	3	M1-2	x	x	x		I, M, G, Tk	VCP, Gs, Tk, Sp	E
2	a	1716	3	M1-2	x		x	x	I	I, M, G, A	E
3	a	1716	61	M1-2	x	x	x		A	G, I, M, Gs, Tk	E
4	a	1717	60	M1-2	x	x	x		Gs, I, M	I, M, A, Tk	E
5	a	1736	1	M1-1	x	x	x		I, M	I, M, G, Tk, A	E
6	a	1736	10[1]	M1-1	x	x	x		I, M, Cy, G	I, M, Fm, A	E
	b	1736	18	M1-1	x	x	x		I, M, Cy, G	I, M, Fm, A	E
	c	1736	61	M1-1	x	x	x		I, M, Cy, G	I, M, Fm, A	E
	d	1736	62	M1-1	x	x	x		I, M, Cy, G	I, M, Fm, A	E
	e	1736	63	M1-1	x	x	x		I, M, Cy, G	I, M, Fm, A	E
7	a	1716	59	M1-2	x	x	x		A	G, I, M, GS, Tk, A	E
	b	1716	60	M1-2	x	x	x		A	G, I, M, GS, Tk, A	E
8	a	1735	13	M1-1	x				I, M	I, M, C, Fm, A, Tk	E
	b	1735	14	M1-1	x				I, M	I, M, C, Fm, A, Tk	E
9	a	1735	5	M1-1	x	x	x		G, Tk	I, M, A, G, Tk	E
	b	1735	11	M1-1	x	x	x		G, Tk	I, M, A, G, Tk	E

Site No.	Site Lot	Tax Block	Tax Lot	Existing Zoning	Sanborn Maps	City Directory	Environmental Databases	Site Inspection	Onsite Environmental Concern	Offsite Environmental Concern	Institutional Control
	c	1735	12	M1-1	x	x	x		G, Tk	I, M, A, G, Tk	E
10	a	1735	3	M1-1	x		x		Fm	G, Tk, I, M, A	E
11	a	1735	61	M1-1	x		x		I, M	G, Tk, I, M, A	E
	b	1735	62	M1-1	x		x		I, M	G, Tk, I, M, A	E
12	a	1717	2	M1-1	x	x	x		I, M	I, M, Gs, A	E
A	a	1736	68	M1-2	x	x			A, I, M	A, I, M	E
B	a	1735	59[2]	M1-2	x				A		E

Notes:
[1] Lot 10 consists of former Lots 10, 11 and 13. A lot merger became effective between scoping and the completion of the Draft Environmental Impact Statement (DEIS).
[2] Lot 59 consists of former Lots 56, 57, 58, 59, and 60. A lot merger became effective between scoping and the completion of the DEIS.

Legend:
x = Potential Environmental Hazard Identified During Review
E = E-Designation
M = Manufacturing
G = Garage/parking
I = Industrial
A = Auto repair/service/sales/towing
Tk = Bulk Storage Tank
Sp = Spill
Gs = Gas station, Filling station
VCP = Voluntary Cleanup Program Site
Fm = Furniture Manufacture
Cy = Coal Yard