9.0 Hazardous Materials

Introduction

This chapter evaluates the Proposed Actions' potential to lead to significant adverse impacts related to hazardous materials. It specifically examines the likelihood of hazardous materials in soil, groundwater, and/or soil vapor being present at the 54 projected and 16 potential development sites outlined in the reasonable worst-case development scenario (RWCDS). Proposed measures aim to address and mitigate contamination issues to reduce exposure risks for future occupants and workers. These measures are integral components of the Proposed Actions, preventing the possibility of significant adverse impacts associated with hazardous materials. An analysis of potential impacts from hazardous materials was conducted for the projected and potential development sites, which are properties where ground disturbance, renovation/conversion, and expansions of existing structures are expected due to the Proposed Actions.

In accordance with the 2021 *CEQR Technical Manual*, hazardous materials are defined as substances posing threats to human health or the environment. Hazardous materials within primarily historical building materials and fixtures may include asbestos-containing materials (ACM), lead-based paint (LBP), and mercury. Subsurface hazardous materials include, but are not limited to, volatile organic compounds (VOCs) commonly found in petroleum products and solvents; semi-volatile organic compounds (SVOCs) typically associated with petroleum products, coal, and ash; coal tar and other non-aqueous phase liquid by-products of historically present manufactured gas plants (MGPs) in the area; heavy metals, including lead; and polychlorinated biphenyls (PCBs), usually associated with electrical transformers.

It is important to note that the mere presence of hazardous materials does not automatically indicate a threat to human health or the environment. An exposure pathway, the presence of a receptor, and an unacceptable dose must also be present to pose a threat. Without proper controls, hazardous materials could be released during the demolition or renovation of existing structures or during excavation or dewatering of a site. Human exposure to hazardous materials, primarily evaluated during construction, is most likely to occur through inhalation of VOCs, ingestion of particulate matter containing SVOCs or metals, or dermal (skin) contact with hazardous materials.

Therefore, a hazardous materials screening assessment was performed following the 2021 *CEQR Technical Manual* guidelines to determine the potential for hazardous materials to have adverse impacts.

Principal Conclusions

The Proposed Actions are anticipated to have no significant adverse impacts related to hazardous materials. An evaluation of potential hazardous materials impacts was conducted for the 54 projected and 16 potential development sites. The assessment revealed environmental concerns associated with each of these sites. Consequently, the proposed zoning map actions incorporate (E) designations for all projected and potential development sites. By implementing the (E) designation across all 70 projected and potential development sites, the potential presence of contaminated materials would be addressed and mitigated. The adoption of preventive and remedial measures outlined in the (E) designation is poised to mitigate or eliminate the potential for significant adverse impacts related to hazardous materials during construction within the rezoning area resulting from the Proposed Actions.

Screening Assessment

According to the 2021 *CEQR Technical Manual*, a hazardous material is any substance that poses a threat to human health or the environment. Substances that may be of concern include, but are not limited to:

- Heavy metals, including lead, cadmium, mercury, arsenic, and chromium that are used in smelters, foundries, platers, and metal works and may be components in paint, ink, petroleum products, and coal ash. Heavy metals may be toxic to humans and cause serious physical impairment.

- VOCs, including benzene, toluene, ethylbenzene, total xylenes, methyl tertiary butyl ether, and hexane, as well as chlorinated compounds, such as trichloroethylene and tetrachloroethylene that are commonly used as solvents and cleaners. VOC vapors may be toxic, and under certain conditions, may result in vapor intrusion and could lead to explosive or ignitable conditions.

- SVOCs, including phenols and other components of creosote and coal tar, as well as polycyclic aromatic hydrocarbons (PAHs), that may be naturally occurring but are more commonly found at higher levels in combustion by-products such as ash. Several PAHs are either known to be or are suspected to be carcinogenic.

- Methane, which is generated by decomposing plants and other organic materials. Methane is often found in or near filled wetland areas; methane trapped beneath foundations may lead to explosions.

- PCBs, which were formerly used in electrical equipment and as a plasticizer. PCBs bioaccumulate in aquatic organisms and humans and may cause a variety of neurological and other adverse effects.

- Pesticides, which are substances or mixtures of substances used to destroy or mitigate insects, rodents, fungi, weeds, or other plant life. Many pesticides are toxic to humans and animals.

- Dioxins, which are or were formed as by-products of combustion or manufacturing and industrial processing.

- Hazardous wastes are defined by regulations promulgated under the federal Resource Conservation and Recovery Act (RCRA) and by the New York State Department of Environmental Conservation (NYSDEC), found at 6 New York Codes, Rules and Regulations (NYCRR) Part 371, as solid wastes that either meet one of the following four characteristics: chemically reactive, ignitable, corrosive, or toxic, or are listed wastes.

- Other less commonly encountered hazardous materials include radionuclides (e.g., radiation sources) and biological wastes (e.g., medical waste). When these materials are managed in accordance with applicable regulatory requirements (e.g., in a hospital or laboratory setting), they are not expected to be associated with adverse effects.

Hazardous materials may be present in the soil, groundwater, soil vapor, or buildings and structures on-site as the residue of past or current activities. Manufacturing processes and commercial activities typically use, and thus require, storage and handling of hazardous materials, and leaking and misuse may release these materials to the environment.

Methodology

As described in the 2021 *CEQR Technical Manual*, the purpose of a hazardous materials assessment is to determine whether a proposed action could lead to potential increased human exposure to hazardous materials and whether the increased exposure could lead to significant public health or environmental impacts. This chapter's objective is to determine which, if any, of the projected and potential development sites identified as part of the RWCDS may have been adversely affected by current or historical uses on-site or in the vicinity. The Atlantic Avenue Mixed Use Plan, Chapter 24 of Title 15 of the Rules of the City of New York outlines the criteria for deciding whether a specific site warrants an (E) designation. Section 24-04 delineates the initial screening process, involving a review of historical documentation to identify past or current uses that may have impacted or continue to affect a planned or potential development site, as well as adjacent sites.

For this assessment, the Study Area includes all projected and potential development sites within the Project Area. Potential hazardous materials in primarily historical building materials and fixtures include mercury, asbestos, and lead-based materials. Subsurface hazardous materials include, but are not limited to, VOCs, commonly found in petroleum products and solvents; SVOCs, typically associated with petroleum products, coal and ash; coal tar, a by-product of the MGPs historically in the area: heavy metals, including lead; and PCBs, usually associated with electrical transformers. Because well-established regulatory

programs address hazardous materials in existing buildings, the analysis in this chapter primarily focuses on subsurface hazardous materials. As part of this assessment, each site was evaluated for potential subsurface hazardous materials by (1) reviewing historical Sanborn fire insurance maps for the site and nearby properties; (2) reviewing environmental regulatory databases for the site and nearby properties; and (3) conducting site reconnaissance (from streets and other public rights-of-way as interior access was not available) to determine current occupants/uses and any indications of historical or current hazardous materials use or storage (e.g., signage or petroleum storage tank fill caps).

Sanborn Fire Insurance Map Review

Sanborn maps from the 1880s to present time were reviewed to assess site and nearby activities and operations, including those listed in Hazardous Materials Appendix 1 of the 2021 *CEQR Technical Manual*. This review included identifying automotive uses (e.g., fueling operations, garages with gasoline tanks, auto-repair shops), industrial uses (e.g., various manufacturing, coal storage, MGPs, smelters, chemical laboratories, metal works, printing facilities, substations, foundries, paint manufacturers, junk yards, rail yards, motor freight stations), and the historical storage of hazardous materials in aboveground or underground storage tanks (ASTs and USTs).

Database Review

A standard list of federal and state regulatory databases (per ASTM E1527-21) related to the potential for hazardous materials was reviewed, including the following:

- The New York State SPILLS database that lists sites where petroleum or chemical releases have been reported to the NYSDEC since April 1, 1986.

- The NYSDEC chemical bulk storage database that contains registered (since July 15, 1998) facilities that store (non-petroleum) hazardous substances—as defined by 6 NYCRR Part 597—in ASTs with capacity equal to or greater than 185 gallons and/or in USTs of any size.

- The NYSDEC Petroleum Bulk Storage database that keeps track of properties that store petroleum products of greater than 1,100 gallons in aggregate.

- The NYSDEC Leaking Storage Tank Incident Reports that records leaking AST or UST incidents reported after April 1, 1986. The causes of releases may be tank test failures, tank failures, or tank overfills.

- The Hazardous Waste Generators database that uses both the NYSDEC manifest system for hazardous waste handlers and U.S. Environmental Protection Agency (EPA) records pursuant to the RCRA, also referred to as the Resource Conservation and Recovery Information System database, and includes information on sites that generate, transport, store, treat, and/or dispose of hazardous waste as defined by RCRA.

- An air discharge facility database for air pollutant sources that are permitted with the EPA, NYSDEC, or New York City Office of Environmental Remediation (OER).

- New York State Brownfield Cleanup Sites for sites on record with NYSDEC as abandoned, idle, or underused industrial and commercial sites where redevelopment is being contemplated under the NYSDEC Brownfield Cleanup Program.

- Solid Waste Facility sites that are included in a NYSDEC database with certain landfills, incinerators, transfer stations, recycling centers, and other sites that manage or managed solid waste.

- State Inactive Hazardous Waste Disposal Site Registry (also known as State Superfund) that lists information regarding a variety of sites likely requiring cleanup.

- An inventory of historical and currently registered dry cleaning facilities compiled by Environmental Data Resources, Inc. (EDR). Typical observations at historical dry cleaning facilities include the nature of the visible operations; evidence of chemical bulk storage tanks from either signs, fill ports, and/or vent pipes; roof or sidewall vents where potential air discharges occur; monitoring wells; discoloration or staining of surfaces; stressed vegetation; and waste disposal practices.

- An inventory of historical and current registered auto-related facilities compiled by EDR that includes, but is not limited to, auto mechanics, auto-body shops, gasoline service stations, and auto-service stations. Typical observations (noted in **Table 9-1**, at the end of this section) include the nature of the visible operations; evidence of petroleum bulk storage tanks from either signs, fill ports, and/or vent pipes; electrical transformers or large capacitors; monitoring wells, automotive and other industrial uses; sheens, discoloration, or staining of surfaces; topographical disturbances, including excavation and filling; stressed vegetation; and petroleum waste disposal practices.

Site Reconnaissance

Each site and nearby properties were observed to verify and potentially supplement literature and database records, identify existing environmental conditions, and note any potential evidence of historical conditions. Exterior site inspections were performed for each projected and potential development site to identify any visible monitoring wells; vent pipes; fill ports; and/or manufacturing, commercial and industrial uses that could indicate environmental impacts. Because the sites' interiors were not accessible, the reconnaissance was performed from public access areas such as streets and sidewalks.

Limitations

While the examinations of the Sanborn map and City directory adhered to the procedures delineated in the ASTM-E1527-21 standard, it is crucial to underscore that, due to the private ownership status of all the projected and potential development sites, the plan's scope was

confined to gathering and analyzing limited information essential for determining a hazardous materials (E) designation. The review of Sanborn maps and City directories specifically focused on properties and their adjacent properties within the rezoning area boundaries. The regulatory database scrutiny also followed the protocols outlined in the ASTM-E1527-21 standard, encompassing the site itself and a 400-foot buffer zone surrounding each site or cluster of sites. However, components of a Phase I Environmental Site Assessment (ESA) and procedures outlined in the 2021 *CEQR Technical Manual* (such as examinations of building department and fire department records, a title deed search, and interviews with current and former employees and owners) were intentionally excluded from the assessment.

Existing Conditions, Topography, and Hydrogeology

The Study Area has been mainly occupied by residential, industrial, and commercial uses for more than 85 years. In the late 19th century, Atlantic Avenue served as a vital transportation route, featuring an at-grade freight and passenger rail that connected Brooklyn's industrial waterfront to the farms of Long Island. This connection played a pivotal role in fueling Brooklyn's rapid development and led to the concentration of industrial and distribution-based businesses along the corridor and surrounding blocks. In the early 1900s, the rail line underwent a transformative shift, moving below grade and transitioning into passenger-only service for the Long Island Rail Road (LIRR). As suburbanization took hold on Long Island, particularly with the rise of automobiles, Atlantic Avenue underwent a significant transformation into an auto-centric corridor, characterized by the presence of gas stations, vehicle repair shops, warehouses, and distribution centers. In 1961, the implementation of M1-1 zoning along the corridor aimed to restrict new housing development and foster suburban-style industrial and commercial uses. This zoning strategy reinforced the prevailing low-rise, auto-oriented character, intentionally devaluing existing rowhouses and apartment buildings by categorizing their use as non-conforming with zoning regulations. Additionally, the zoning restrictions precluded any new residential development, conversions, or expansions in the designated area.

Based on reports compiled by the U.S. Geological Survey, the Study Area ranges from 50 to 90 feet above sea level. Groundwater is expected to be first encountered below grade or at most at a few feet above sea level and flows generally west-northwest, presuming it follows the local surface topography. Based on the proximity to the Gowanus Canal to the west and the Jamaica Bay to the south, groundwater flow could be tidally influenced. Tides, utilities, and other factors may affect actual local groundwater flow.

Overview of Historical Uses General Area History

Project Area

- 1888–1930**:** The Project Area is in the Prospect Hights area of Brooklyn, along Atlantic Avenue. In the late 19th century, Atlantic Avenue had an at-grade freight and passenger rail connecting Brooklyn’s industrial waterfront with eastern Long Island. In the early 1900s, the rail line was moved below grade and began operating as passenger-only service for the LIRR. This rail line is present today and remains

relatively unchanged. In the start of the 20th century, the Project Area was mainly storefronts and private dwellings, with coal sheds, carriage outposts, and garages. Toward the end of the 1920s, small commercial and industrial operations increased, including numerous garages with fueling operations and repair shops, dry cleaning operations, warehouses, and manufacturers on the blocks west of Classon Street. During this time, northern and eastern portions of the Study Area saw an expansion of auto-sales and services facilities (e.g., filling stations, motor freight stations, repair shops, machine shops, and garages with gasoline tanks).

- 1930–1960: In the 1930s, the Project Area was transformed into a mix of commercial, industrial, and residential entities. The Project Area saw an additional increase in automotive and industrial facilities after the 1930s (prior to modern environmental regulations), including new warehouses, manufacturers, armoires, metals/plating works and chemical works, printers, filling stations, motor freight stations, and garages with gasoline tanks. The large industrial properties included U.S Metal Products Co. Inc. Manufacturing, Messing Bakeries Inc., Michaels & Co., Furne Warehouse (auto manufacturer), and Murray MGP.

- 1960–1990**:** By the 1960s, the Project Area had a mixture of commercial and industrial uses, with surrounding areas supporting residential communities. Industrial uses included multiple MGPs (facilities that processed coal and/or oil to make “town gas,” used initially for lighting), lumber yards, machine/metal works, electrical substations, chemical production plants, and other manufacturing facilities. Industrial supporting operations such as warehouses, garages, and storage facilities increased over the previous decades, including numerous garages with fueling operations and repair shops. Unlike the previous decades, the industrial expansion of the area came to a halt, and no significant expansion of the industrial and commercial operations in the Project Area occurred after 1980. The large industrial properties still operating from previous decades included Michaels & Co., Furne Warehouse (auto manufacturer), and Murray MGP. Other commercial and industrial operations during this time included National Biscuit Co., Machy Manufacturing, an LIRR power substation, sheet metal works, auto-paint and truck-body manufacturing, spot-welder manufacturing, and multiple large auto-sales and service stations.

- 1990–2007: Toward the end of the 20th century, the Project Area saw an exodus of heavy industrial and commercial operations. Until the early 2000s, the following industrial entities were present: spot-welder manufacturing, sheet metal works, Michaels & Co., Furne Warehouse (auto manufacturer), an LIRR power substation, and multiple auto-sales and service stations. Over these decades, the Project Area became home to lighter commercial entities, with some industrial operations remaining in the Study Area. During this time, the most common operations revolved around automobiles such as gas stations, garages, parking, auto-repair shops, auto-sales shops, auto-service stations, auto-parts shop and storage facilities, and car washes. By 2007, the Study Area included a mixture of residential, commercial, and

industrial uses, including municipal buildings, churches, auto-service stations, schools, parking garages, and manufacturing plants.

- 2007–Present: After the Project Area became more commercial with light industrial operations remaining in the area, the community saw an increase in redevelopment as evident through construction operation increases. During site reconnaissance performed on February 6, 2024, multiple large-scale mixed use, and residential active construction sites were noted. Auto-related properties remain common in the Project Area. During site reconnaissance, publicly accessible monitoring wells on sidewalks were not observed at identified risk properties.

Projected Development Sites 46, 47, and 52

Before 1900, Bergen Street was present, and Sites 46, 47b, and 52b were private dwellings, storefronts, and churches. On the corner of Bergen Street and 6th Avenue, the 10th Precinct police station was present before 1900 and remains relatively unchanged today. The site is currently occupied by the NYPD's 78th Precinct. From 1906 to 1985, Projected Development Site 46 consisted of private apartments until 1985 when the building was torn down and redeveloped into a parking lot. Commonly, when a building is demolished and redeveloped, fill is used on-site but its source is unknown. Projected Development Site 47 comprised storefronts that varied over the years and included Unicorn Press Publishers, metal works, rug cleaning, and garages. From at least 1965 to 2007, an unknown manufacturing entity operated directly adjacent to the east side of Projected Development Site 47. Since 1888, Projected Development Site 52 has been a church, historically called Olivet Presbyterian Church, which remains today. Directly adjacent to the church to the south, was a basement boiler room established in the early 1900s. The boiler room was used to heat the nearby apartments, and the property was occupied by a gasoline service station from 1969 to 1982.

Projected Development Site 53

In in the early 1900s, three private dwellings and a covered garage occupied Projected Development Site 53. Prior to 1932, the southern-most dwelling was damaged by fire, and the northern-most dwelling was destroyed and Forbel Academy, a school, was constructed in its place. The buildings remained until 1973, when all on-site buildings were demolished, and the Crown Heights Early Childhood Center was constructed on the southern portion of the projected development site; the center remains relatively unchanged today. By 2004, two residential structures were built on the subject property's western border, which remain present. Before the 1950s, the surrounding sites of the Project Area were mainly residential, including schools, apartments, parks, and churches. The surrounding area remains relatively unchanged, and remains primarily residential today.

Projected Development Site 54

Projected Development Site 54 is currently occupied by the Brooklyn Adult Learning Center with a paved parking lot adjacent to the east side of the building. Historical documents indicate the property has included varying types of school-related entities since 1888. The

early form of heating prior to the 1900s consisted of three boilers that appeared to be present in a basement. In the early 1900s, the site was a girls high school, with a large auditorium connected to the main building on the east side. The property remained unchanged until the early 1970s when the auditorium was removed, and the property officially became the Brooklyn Adult Learning Centers that remains today.

Projected Development Site 55

In the early 1900s, the project development site 55 comprised multiple private dwellings, while the surrounding area to the north, east, and west were primarily residential with occasional storefronts. From the 1920s until 1970s, dwellings were demolished or redeveloped into commercial and manufacturing entities that included a large gas station. However, by 1977, Projected Development Site 55 and the surrounding area was demolished and redeveloped into Sterling High School and Atlantic Terminal Houses, respectively. Projected Development Site 55 is now a School of Career Development although the building appears to remain relatively unchanged.

Hazardous Materials Analysis

Table 9-1, at the end of this chapter, identifies sites with on-site, historical, or adjacent concerns, whether within the site itself or within 400 feet of a potential or projected development site, and summarizes the findings of the hazardous materials evaluation for each of the potential or projected development sites. In the final column, the tables includes the recommendation to place hazardous materials (E) designations for all projected and potential development sites, determined by whether they have been adversely affected by current or historical uses on-site, adjacent to, or within 400 feet of the site. In evaluating whether the placement of an (E) designation for hazardous materials was necessary, current site conditions and previous on-site uses were prioritized, followed by the adjacent site use history and conditions within 400 feet.

Figures 9-1 through **9-5** display and identify risk sites revealed through a thorough examination of the EDR regulatory database. The database review and historical documents are included in Appendices A and B.

The evaluation of hazardous materials within this plan's scope has led to the categorization of sites into different risk statuses based on the known or potential presence and potential impact of contamination. High-risk status designations indicate sites with confirmed contamination or those strongly suspected to have varying levels of contamination that could significantly affect either projected or potential development sites. Sites designated with a moderate risk status suggest potential contamination that may impact the Project Area.

The environmental database report identified approximately 2,000 sites within 1 mile of the Project Area. Based on a thorough review of database searches, historical document review, and City directories, risk statuses of sites were assessed based on their ability to affect environmental conditions on a potential or projected development site. The presumed regional groundwater flow is west-northwest; therefore, sites located east-southeast are

presumed to be upgradient, and sites located along the corridor may be cross-gradient because the roadway runs east to west. Local groundwater flow is also mostly away from the Project Area toward the East River.

Hazardous Materials Implications

The Project Area has been developed prior to 1900 and has been redeveloped various times throughout the century. During this time, it was commonplace to use fill material of unknown origin following demolition or during construction/redevelopment. In Brooklyn, this fill is typically from urban fill material, which commonly contained contaminates such as ash, cinder, slag, metals, and general SVOCs. Because the source of fill in the Project Area is unknown, the potential exists for contamination from the use of fill material is possible.

As mentioned previously, the Study Area includes a mix of residential and commercial facilities, with some institutional, educational, and community facility developments as well as interspersed automotive and industrial facilities (some vacant and/or converted to lofts or commercial uses). Based on the age of the majority of structures on the sites (pre-1970), building materials are likely to include ACM, LBP, and/or PCBs. Some of these buildings have active or historical fuel oil tanks, either underground or aboveground. Subsurface contamination in the Study Area is likely to be principally associated with the following: coal tar and other contamination migrating from former MGP facilities; auto-related, transportation, industrial or utility uses (e.g., garages, filling station, auto repair, substations, and other uses noted in Hazardous Materials Appendix 1 of the *CEQR Technical Manual*); and the presence/operation of USTs or ASTs.

The Future Without the Proposed Actions (No-Action Condition)

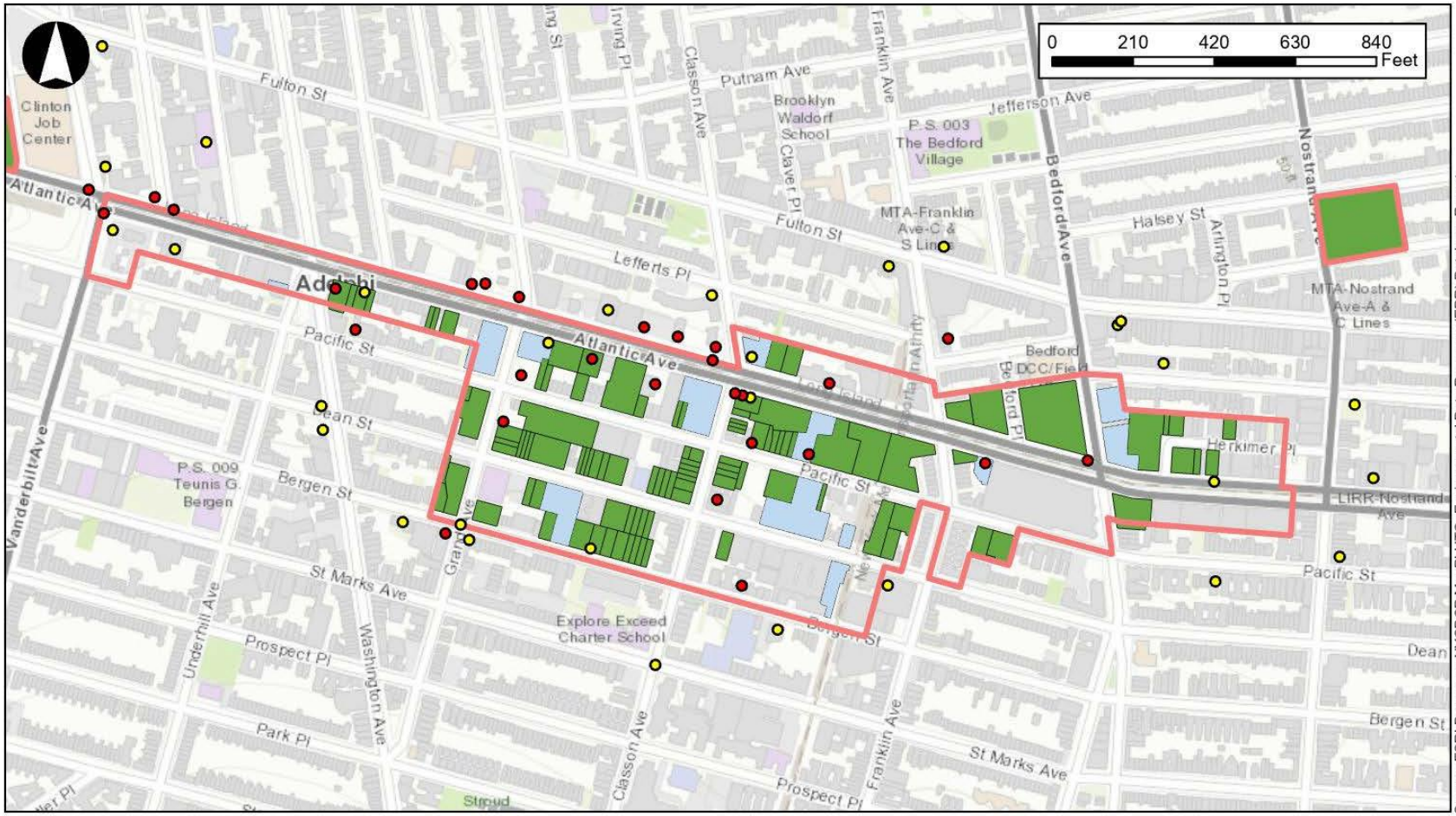
In the future without the Proposed Actions (No-Action condition), some of the sites are assumed to remain unchanged from existing conditions, whereas others are assumed to become occupied by as-of-right residential and non-residential uses under existing zoning (see **Chapter 1, Plan Description).** As discussed in **Chapter 2, Land Use, Zoning and Public Policy,** in the future without the Proposed Actions, the project development sites zoned M1-1 are anticipated to remain unchanged from existing conditions. Some of the sites would become occupied by uses that are as-of-right under existing zoning and reflect current trends if they are vacant, occupied by vacant buildings, or occupied by low-intensity uses that are deemed likely to support more active uses.

Absent the Proposed Actions, development would occur on potentially contaminated sites with no mechanism in place, such as an (E) designation, to require testing and remediation. Any construction involving soil disturbance could create or increase pathways for human exposure to subsurface hazardous materials that may be present. Since no (E) designations (which require the owner of a property to assess potential hazardous material impacts prior to construction) currently exist on any of the potential or projected development sites, such soil disturbance would not necessarily be conducted in accordance with the procedures (e.g., conducting testing before commencing excavation and implementing health and safety plans during construction) described in the following section. Catalyzing redevelopment with the

Proposed Actions, including the placement of (E) designations in connection with the amended zoning, is essential to remediation of contaminated sites. However, the NYSDEC regulatory requirements pertaining to any identified petroleum tanks and/or spills, requirements for disturbance and handling of suspect LBP and ACMs, and requirements for off-site disposal of soil/fill, would need to be followed. As such, without the Proposed Actions, the amount of soil disturbance would be less, but the controls may not be as stringent as under the Proposed Actions, as described below.

The Future with the Proposed Actions (With-Action Condition)

In the future with the Proposed Actions (With-Action condition), 54 projected development sites are considered more likely to be developed by the 2034 analysis year, and 16 potential development sites are considered less likely to be developed over the same period. The development of all projected and potential sites may result in demolition and construction activities that could increase the potential for the exposure of workers and nearby residents to contaminated materials. **Table 9-1** describes the potential presence of contaminated materials on and within 400 feet of each of the projected and potential development sites and identifies the regulatory controls that would be placed on the site to ensure further investigation and remediation (if required).



Atlantic Avenue Mixed-Use Plan

Figure 9-1
Plan Area Risk Sites

Atlantic Avenue Mixed-Use Plan **Figure 9-2**

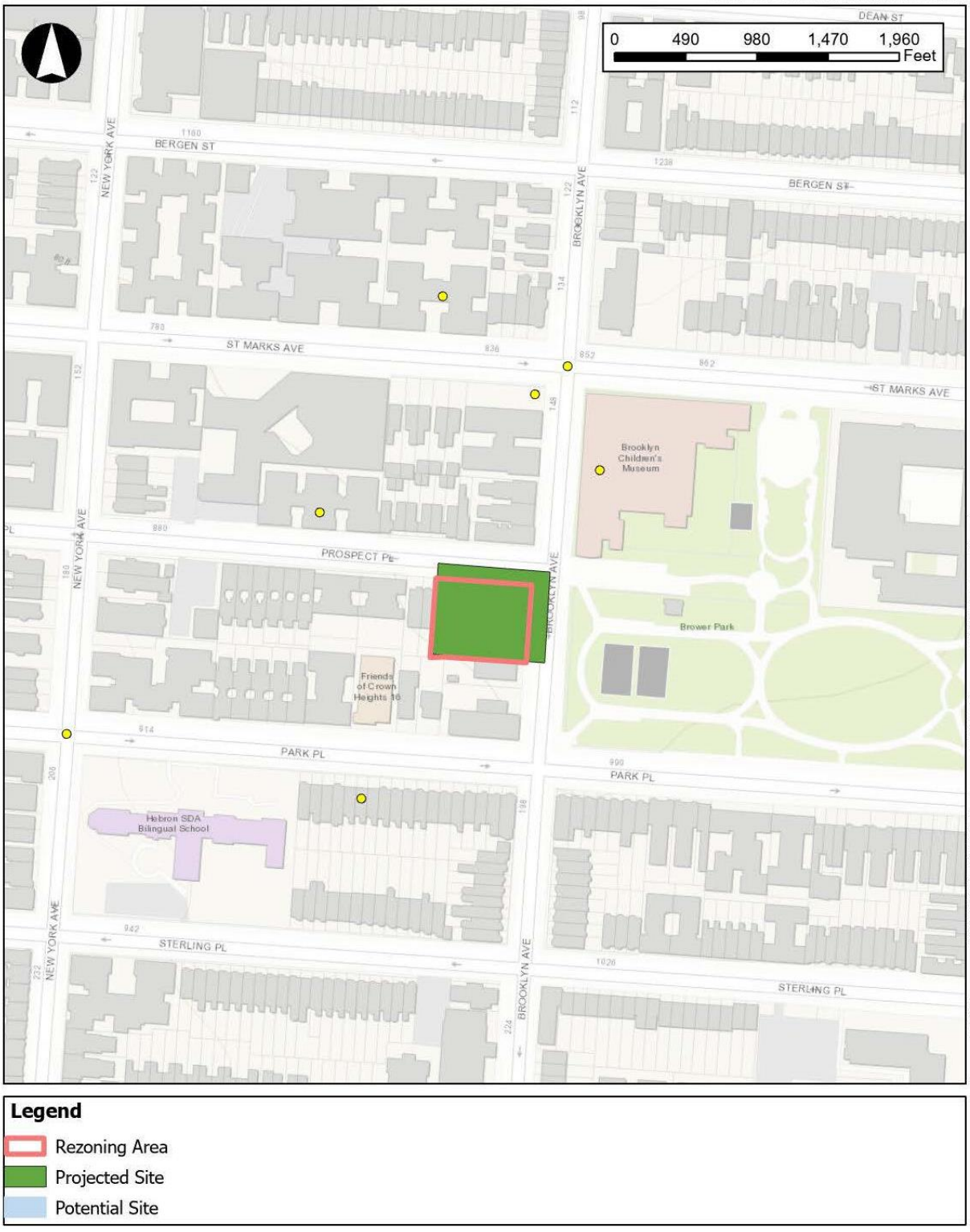
Sites 46, 47, and 52 Identified Risk Sites



Source; ESRI Basemap, NYCDCP MapPLUTO, Environmental Data Resource (EDR) Database Report

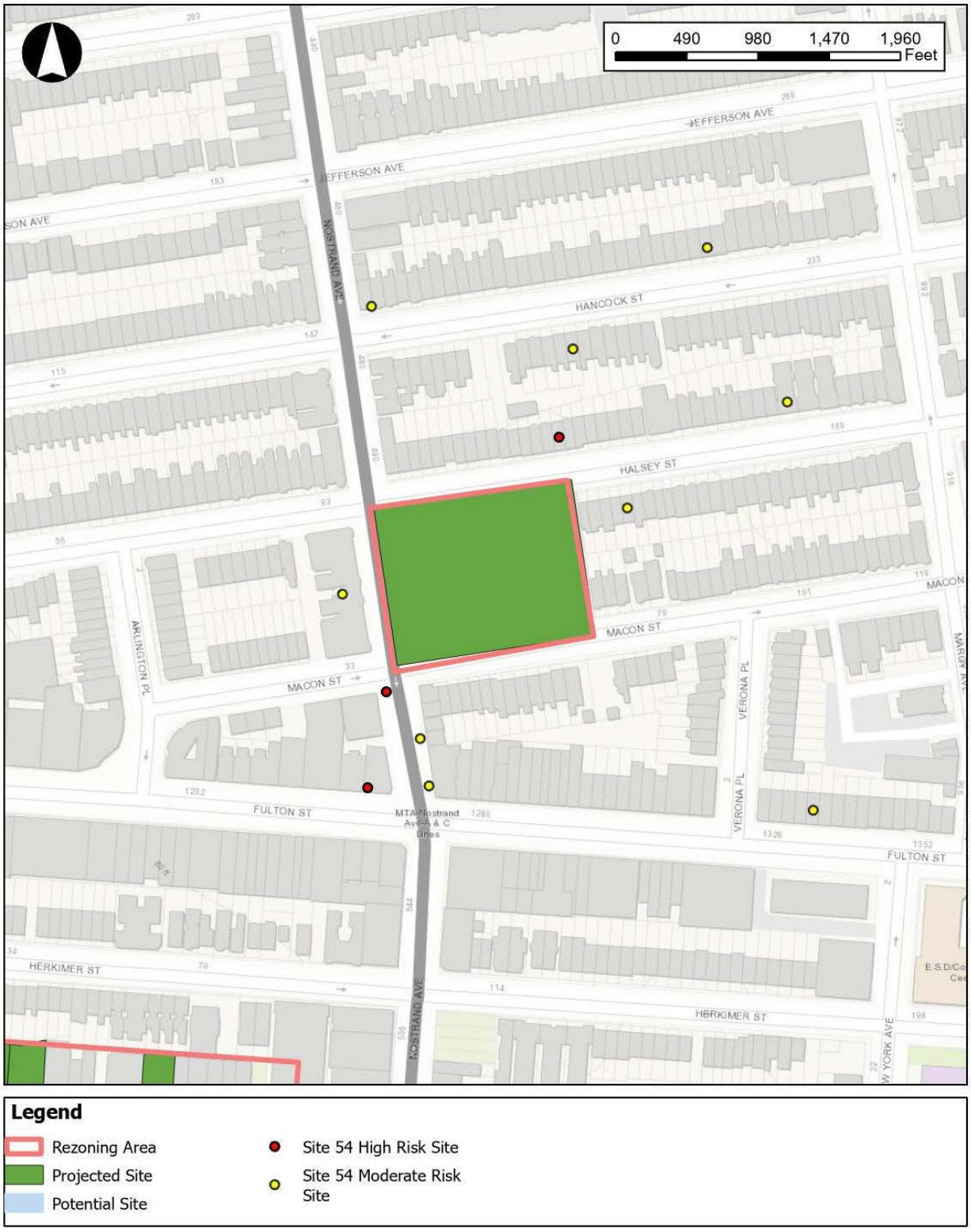
Atlantic Avenue Mixed-Use Plan **Figure 9-4**

Site 54 Identified Risk Sites



Atlantic Avenue Mixed-Use Plan **Figure 9-4**

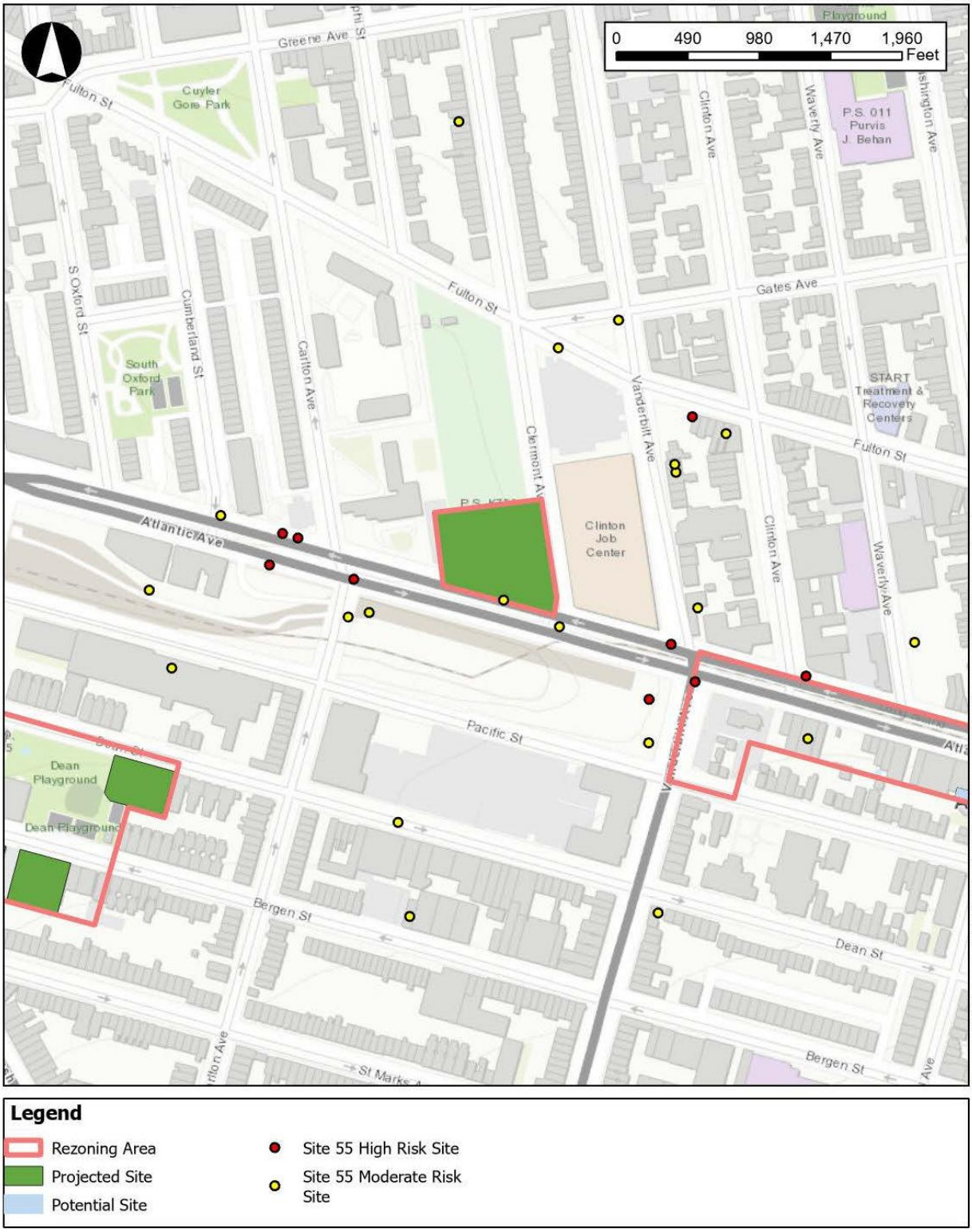
Site 54 Identified Risk Sites



Source; ESRI Basemap, NYCDCP MapPLUTO, Environmental Data Resource (EDR) Database Report

Atlantic Avenue Mixed-Use Plan **Figure 9-5**

Site 55 Identified Risk Sites



The assessment of hazardous materials concludes that each of the projected and potential development sites raises concerns regarding environmental conditions. Consequently, the proposed zoning map amendments encompass (E) designations for all projected and potential sites. This strategic approach aims to address identified or suspected environmental issues and mitigate potential adverse impacts on human health and the environment resulting from the Proposed Actions.

The proposed (E) designations, illustrated in **Table 9-1**, are strategically placed based on a thorough screening process using historical documentation and regulatory databases. Prior to demolition and/or construction, a Phase I ESA would be performed on each site in accordance with all relevant ASTM standards. Phase I ESAs would be followed by Phase II subsurface investigations, if warranted. Any demolition or renovation with the potential to disturb properties with LBP would be performed in accordance with relevant Occupational and Safety Health Administration standards. Any properties that may contain asbestos would be surveyed to confirm the presence of ACM, which subsequently would be stabilized or removed in accordance with relevant state and federal regulations. Soil excavated from construction sites in the Study Area would be managed and transported off-site in accordance with applicable regulatory requirements. On-site ASTs and USTs (including unforeseen tanks discovered on-site during demolition or construction) would be closed and/or removed in accordance with all applicable requirements. The (E) designation would require that the fee owner of such a site conduct a testing and sampling protocol and have an approved remediation plan where appropriate to the satisfaction of the OER. The NYC Department of Buildings will typically issue the foundation permits when OER approves the remedial action work plan—the actual remediation usually is done concurrently with the construction. The remediation plan provided to OER to satisfy the (E) designation also must include a mandatory construction-related health and safety plan, which must also be approved by OER. Regulatory oversight by OER is integral to this process, ensuring compliance with Section 11-15 of the NYC Zoning Resolution. Ultimately, the (E) designation serves as a proactive approach to address and mitigate potential environmental concerns associated with the proposed development.

The (E) designation text related to hazardous materials (E-810), 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 and groundwater testing protocol, including a description of the methods and a site map with all sampling locations clearly and precisely presented.**
>
> **If site sampling is necessary, 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 sampling data. Guidelines and criteria for selecting sampling locations and collection samples are provided by OER upon request.

Task 2 – Remediation Determination and Report

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, a written notice shall be given by OER.

A construction-related health and safety plan must be submitted to OER and implemented during excavation and construction and related 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 prior to implementation.

All demolition or rehabilitation would be conducted in accordance with applicable requirements for disturbance, handling and disposal of suspect lead-paint and asbestos-containing materials.

Through the assignment of (E) designations (E-810) on the projected and potential development sites, the likelihood of adverse effects on human health and the environment would be minimized or prevented. Additionally, the implementation of the Proposed Actions would lead to the cleanup of a greater number of sites compared to the No-Action condition, with the cleanup typically being more rigorous due to the stipulations of the (E) designations. These requirements would reduce the potential for human exposure during development and contribute to reducing contaminants beneath the projected and potential development sites.

Conclusion

By implementing the (E) designation across all 70 projected and potential development sites, the potential presence of contaminated materials would be address and mitigated. The adoption of preventive and remedial measures outlined in the (E) designation is poised to mitigate or eliminate the potential for significant adverse impacts related to hazardous materials during construction resulting from the Proposed Actions in the rezoning area.

Table 9-1: E-Designation Recommendations

Site	Category	Block	Lot	Street Address	Lot Area (sf)	Zoning	On-Site Sanborn Map Concerns	On-Site Database Listing	Concerns Within 400-foot Radius	On-Site Environmental Concern (Historical or Current)	Site Visit Findings	Institutional Control (Hazardous Materials)
1	Projected	1124	10	922 Atlantic Avenue	2500	M1-1			X	X		
	Projected	1124	4	571 Washington Avenue	8282	M1-1		X	X	X (historic)		E
2	Projected	1124	14	930 Atlantic Avenue	2500	M1-1			X			
	Projected	1124	11	924 Atlantic Avenue	5000	M1-1		X	X	X		E
3	Projected	1124	29	960 Atlantic Avenue	6000	M1-1		X	X			E
4	Projected	1125	10	998 Atlantic Avenue	12500	M1-1		X	X	X		
	Projected	1125	80	989 Pacific Street	2500	M1-1			X			
	Projected	1125	81	987 Pacific Street	3000	M1-1			X			E
5	Projected	1125	16	1008 Atlantic Avenue	8275	M1-1	E53	X	X	X		E
6	Projected	1125	25	1026 Atlantic Avenue	26370	M1-1			X			E
7	Projected	1125	72	1001 Pacific Street	5000	M1-1			X			E
8	Projected	1125	52	1041 Pacific Street	2000	M1-1		X	X			
	Projected	1125	53	1039 Pacific Street	2000	M1-1		X	X			E
9	Projected	1126	7	611 Classon Avenue	1779	M1-1			X			
	Projected	1126	13	1072 Atlantic Avenue	22250	M1-1			X			
	Projected	1126	8	1062 Atlantic Avenue	7029	M1-1		X	X	X		E
10	Projected	1126	57	1119 Pacific Street	30230	M1-1			X			E
11	Projected	1126	3	625 Classon Avenue	1161	M1-1			X			
	Projected	1126	4	623 Classon Avenue	1161	M1-1			X			
	Projected	1126	105	621 Classon Avenue	1162	M1-1		X	X			E
12	Projected	1126	81	1083 Pacific Street	2900	M1-1			X			
	Projected	1126	82	1079 Pacific Street	2898	M1-1			X			
	Projected	1126	83	1077 Pacific Street	1834	M1-1		X	X			
	Projected	1126	84	1075 Pacific Street	2129	M1-1			X			
	Projected	1126	86	1067 Pacific Street	2525	M1-1	A187	X	X	X		
	Projected	1126	85	Pacific Street	2258	M1-1			X			E
13	Projected	2020	86	1035 Atlantic Avenue	7969	M1-1			X			
	Projected	2020	89	1029 Atlantic Avenue	7735	M1-1			X			E
14	Projected	2021	20	1095 Atlantic Avenue	21715	M1-1			X	X		
	Projected	2021	1	1087 Atlantic Avenue	7752	M1-1			X	X		E
15	Projected	2022	1	1119 Atlantic Avenue	72873	M1-1	g63, 4	X	X	X		E
16	Projected	1865	95	1163 Atlantic Avenue	28000	M1-1			X			E
17	Projected	1865	87	5 Herkimer Place	5392	M1-1			X			
	Projected	1865	90	3 Herkimer Place	1860	M1-2			X			E
19	Projected	1866	7	1191 Atlantic Avenue	2774	M1-1			X			
	Projected	1866	1	1167 Atlantic Avenue	8719	M1-1			X			E
20	Projected	1200	5	1317 Bedford Avenue	18238	M1-1		X	X			E
21	Projected	1132	34	948 Pacific Street	1375	M1-1			X			
	Projected	1132	37	Grand Avenue	16845	M1-1			X			E
22	Projected	1133	13	962 Pacific Street	33415	M1-1			X			E

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23	Projected	1133	49	616 Classon Avenue	2570	M1-4/R7A		X	X			
	Projected	1133	48	1030 Pacific Street	1320	M1-4/R7A		X	X			E
24	Projected	1133	57	630 Classon Avenue	3892	M1-1			X			
	Projected	1133	55	626 Classon Avenue	3259	M1-1			X			
	Projected	1133	54	624 Classon Avenue	1630	M1-1			X			
	Projected	1133	53	622 Classon Avenue	1630	R7A		X	X			
	Projected	1133	52	620 Classon Avenue	1630	R7A		X	X			
	Projected	1133	51	618 Classon Avenue	1630	R7A		X	X			E
25	Projected	1133	60	931 Dean Street	2750	M1-1			X			
	Projected	1133	61	927 Dean Street	2750	M1-1			X			
	Projected	1133	62	925 Dean Street	2750	M1-1			X			
	Projected	1133	63	Dean Street	2750	M1-1			X			E
26	Projected	1133	67	901 Dean Street	8672	M1-1			X			E
27	Projected	1133	71	897 Dean Street	2959	M1-1		X	X			
	Projected	1133	72	893 Dean Street	4244	M1-1			X			
	Projected	1133	74	Dean Street	1833	M1-1			X			
	Projected	1133	75	Dean Street	1833	M1-1			X			
	Projected	1133	76	Dean Street	1833	M1-1			X			E
28	Projected	1133	89	861 Dean Street	1833	M1-1			X			
	Projected	1133	90	859 Dean Street	1833	M1-1			X			
	Projected	1133	91	857 Dean Street	1833	M1-1			X			
	Projected	1133	80	Dean Street	16500	M1-1			X			E
29	Projected	1133	1	845 Dean Street	3500	M1-1			X	X		
	Projected	1133	3	537 Grand Avenue	2000	M1-1			X			E
30	Projected	1133	4	531 Grand Avenue	5500	M1-1			X			E
31	Projected	1134	5	639 Classon Avenue	4283	M1-4/R7A		X	X	X		
	Projected	1134	7	635 Classon Avenue	2112	M1-4/R7A		X	X			
	Projected	1134	8	633 Classon Avenue	2112	M1-4/R7A		X	X			
	Projected	1134	11	1048 Pacific Street	2750	M1-4/R7A		X	X			
	Projected	1134	9	Classon Avenue	2244	M1-4/R7A						E
32	Projected	1134	17	1058 Pacific Street	12870	M1-1			X			E
33	Projected	1134	64	1029 Dean Street	6360	M1-1			X			
	Projected	1134	67	Dean Street	16500	M1-1			X			E
34	Projected	1140	31	836 Dean Street	2228	M1-1			X	X		
	Projected	1140	44	773 Bergen Street	4635	M1-1		X	X	X		E

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	Projected	1140	35	566 Grand Avenue	11077	M1-1			X	X		
35	Projected	1141	1	567 Grand Avenue	8000	M1-1			X	X		E
36	Projected	1141	40	922 Dean Street	2750	M1-1			X			
	Projected	1141	38	918 Dean Street	2750	M1-1			X			
	Projected	1141	37	916 Dean Street	2750	M1-1			X			
	Projected	1141	33	904 Dean Street	11000	M1-1			X			
	Projected	1141	39	Dean Street	2750	M1-1			X			E
37	Projected	1141	55	845 Bergen Street	2750	M1-1			X			E
	Projected	1141	56	843 Bergen Street	2750	M1-1			X			
	Projected	1141	57	841 Bergen Street	2750	M1-1			X			
	Projected	1141	58	839 Bergen Street	2750	M1-1			X			
38	Projected	1141	62	827 Bergen Street	3300	M1-1	U202	X	X	X		E
	Projected	1141	128	819 Bergen Street	8690	M1-1			X			
39	Projected	1141	73	809 Bergen Street	5500	M1-1			X	X		E
40	Projected	1142	10	956 Dean Street	5280	M1-1			X	X		E
41	Projected	1141	59	837 Bergen Street	5500	M1-1			X			E
	Projected	1141	61	831 Bergen Street	4950	M1-1			X			
42	Projected	1125	61	1025 Pacific Street	3200	R7/C2-4			X			E
43	Projected	1141	19	870 Dean Street	4968	M1-1			X			E
	Projected	1141	18	868 Dean Street	3273	M1-1			X			
44	Projected	1134	44	1104 Pacific Street	10450	M1-1			X			E
45	Projected	1126	0	1110 Atlantic Avenue	0	M1-1			X			E
46	Projected	1136	29	Dean Street	3010	R6B			X	X		E
	Projected	1136	32	Dean Street	3135	R6B						
	Projected	1136	33	Dean Street	3135	R6B						
	Projected	1136	34	Dean Street	3135	R6B						
	Projected	1136	35	542 Dean Street	4730	R6B						
47	Projected	1143	25	512 Bergen Street	17051	R6B		X	X			E
48	Projected	1205	111	Pacific Street	700	R6A			X			E
	Projected	1205	14	1142 Pacific Street	10699	R6A			X			
	Projected	1205	11	1134 Pacific Street	7799	R6A			X			
49	Projected	1126	29	1102 Atlantic Avenue	22365	M1-1		X	X			E
50	Projected	1866	9	1195 Atlantic Avenue	0				X			E
51	Projected	1126	77	27 Herkimer Place	0				X			E
52	Projected	1143	20	506 Bergen Street	0				X			E
53	Projected	1235	37	178 Brooklyn Avenue	0			X				E
54	Projected	1844	1	457 Nostrand Avenue	0			X	X			E
55	Projected	2008	1	510 Clermont Avenue	0		X	X	X			E
A	Potential	1122	37	10 Underhill Avenue	2400	M1-1			X			E
B	Potential	1124	26	954 Atlantic Avenue	2037	M1-1			X			E
	Potential	1124	27	956 Atlantic Avenue	2071	M1-1			X			
C	Potential	1124	37	984 Atlantic Avenue	20172	M1-1			X	X		E

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	Potential	1124	47	971 Pacific Street	1328	M1-1			X	X		
	Potential	1124	46	534 Grand Avenue	900	M1-1			X	X		
D	Potential	1125	6	990 Atlantic Avenue	1600	M1-1		X	X			E
	Potential	1125	5	988 Atlantic Avenue	1600	M1-1			X	X		
	Potential	1125	4	986 Atlantic Avenue	1600	M1-1			X			
	Potential	1125	2	Grand Avenue	2000	M1-1			X			
E	Potential	1125	9	996 Atlantic Avenue	2000	M1-1		X	X	X		E
	Potential	1125	8	994 Atlantic Avenue	1600	M1-1			X			
	Potential	1125	7	992 Atlantic Avenue	1600	M1-1			X			
F	Potential	1125	40	1050 Atlantic Avenue	26450	M1-1		X	X			E
G	Potential	2020	92	1027 Atlantic Avenue	2975	M1-1		X	X			E
	Potential	2020	1	1025 Atlantic Avenue	7286	M1-1		X	X			
H	Potential	1199	0	569 Franklin Avenue	3892					X		E
I	Potential	1199	12	1154 Atlantic Avenue	5587	M1-1	Q119	X	X	X		E
J	Potential	1142	34	1010 Dean Street	12500	M1-1			X	X		E
K	Potential	1134	73	1011 Dean Street	2145	M1-1			X			E
	Potential	1134	74	1009 Dean Street	2160	M1-1			X			
L	Potential	1126	78	1089 Pacific Street	2881	M1-1	P90	X	X	X		E
	Potential	1126	79	1087 Pacific Street	10446	M1-1			X			
	Potential	1126	80	1085 Pacific Street	2605	M1-1			X			
M	Potential	1865	10	1275 Bedford Avenue	12732	M1-1			X			E
N	Potential	1865	3	1283 Bedford Avenue	9478	M1-1			X	X		E
O	Potential	1134	81	971 Dean Street	37620	M1-1			X			E
	Potential	1134	78	Dean Street	2200	M1-1			X			
	Potential	1134	81	971 Dean Street	38424	M1-1			X			
P	Potential	1141	21	876 Dean Street	5500	M1-1			X			E
	Potential	1141	69	813 Bergen Street	19250	M1-1			X			