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Chapter 14: Hazardous Materials

A. INTRODUCTION AND PRINCIPAL ISSUES

This chapter assesses the potential presence of subsurface contamination (soil, soil gas, groundwater, bedrock) and the potential presence of hazardous materials in surface structures containing contaminated materials that could be affected by the construction and operation of the elements of the Proposed Action as described in Chapter 2, “Description of the Proposed Action.” It also addresses the potential impacts on worker safety, public health, and the environment from potential contaminants/hazardous materials and identifies management practices that would be incorporated into the Proposed Action to preclude significant adverse impacts during construction. The potential for operational impacts from hazardous materials following construction is also considered in this chapter.

Contamination conditions were assessed for all of the components of the Proposed Action where construction activities would occur, to determine if hazardous materials are present. Depending upon the nature of construction activities that would occur at or near a project element, one or more different types of hazardous materials assessment methods were performed in order to further evaluate the potential for hazardous materials. These assessment methods included: an Area Hazardous Materials Screening Study; No. 7 Line Extension (Alignment) Geotechnical Boring Screening; Phase I Environmental Site Assessments; Phase II Environmental Site Assessments or other appropriate site investigations. For all projected and potential development sites identified within the proposed area to be rezoned, a preliminary screening assessment pursuant to Title 15 of the Rules of the City of New York, Chapter 24, Section 4 was done.

The CEQR Technical Manual defines a hazardous material (contamination) as any substance that poses a threat to human health or to the environment. Such substances include but are not limited to: metals; volatile organic compounds (VOCs), commonly found in petroleum products, solvents; semi-volatile organic compounds (SVOCs), typically associated with fuel oil, coal, and ash; and polychlorinated biphenyls (PCBs), usually associated with transformers and utilities. Hazardous materials also include substances used in building materials and fixtures, such as asbestos-containing material (ACM), lead-based paint (LBP), and mercury. The presence of hazardous materials does not necessarily indicate a threat to human health and/or the environment; a means of an exposure pathway, a receptor, and an unacceptable dose must also be present to cause a threat.

During construction, hazardous materials could be disturbed through excavation of soil and consolidated rock, extraction of groundwater, or the demolition/renovation of ancillary structures. The most likely routes of human exposure from the hazardous materials evaluated are the inhalation of VOCs, the ingestion of particulate matter containing SVOCs or metals, or dermal (skin) contact with hazardous materials that can be released during soil-disturbing activities. Chapter 23, “Construction Impacts,” describes likely construction methods, sequencing, and impacts that could be generated by the Proposed Action.

1. Principal Conclusions

The Proposed Action is not anticipated to result in any significant adverse impacts with respect to hazardous materials.

The initial evaluation of hazardous materials was completed through performance of an Area Hazardous Materials Screening Study (AHMSS). This broad screening method identified potentially contaminated sites (PCSs) that may affect implementation of the Proposed Action. Subsequent to this evaluation, further screening and assessment methods were employed on a project element basis to

determine the likely presence of hazardous materials. Hazardous materials within soil, soil gas, groundwater, and building materials resulting from historical construction, manufacturing, and industrial operations may be encountered during construction or demolition associated with the Proposed Action. Since the late 1800s, the Project Area has been occupied by factories, foundries, rail yards, filling stations, and other facilities that used, stored, or disposed of hazardous materials. Hazardous materials that have been released into the subsurface environment include VOCs, SVOCs, PCBs, metals, coal tars and cyanide. Naturally Occurring Asbestos (NOA) is present in bedrock that would be excavated. Additionally, hazardous building materials, including ACM, LBP, and PCB-containing equipment are expected to be present in structures that would be deconstructed as a result of the Proposed Action.

Phase I ESAs were performed at properties owned by or that would be acquired by the public agencies as a result of the Proposed Action. Phase II ESAs or other appropriate site investigations were performed at sites owned by the Project Sponsors and at two acquisition properties. Phase II ESAs will be performed prior to construction for other acquisition properties where the AHMSS, Phase I ESAs, or the Geotechnical Boring Screening have revealed the potential presence of hazardous materials. Properties to be developed by others as a result of the Proposed Action were screened for the potential presence of hazardous materials and will undergo further investigation by the property owners, prior to construction, to more fully characterize possible contamination in the area and to identify any further action, investigation, or management that would be required. Section H of this chapter includes preventative and management procedures that would be followed in order to minimize exposure pathways to contaminants. In order to avoid adverse impacts to human health or to the environment, any such required action, investigation or management would be conducted in accordance with applicable law, and any additional regulatory requirements of NYSDEC or the DEP, as appropriate.

The Phase II ESAs or other appropriate site investigations have identified site-specific conditions that are either consistent with or less severe than the conditions suggested in the Phase I ESAs. Table 14-1 a summary of these investigations.

TABLE 14-1
INVESTIGATION FINDINGS

Location	AHMSS and Phase I ESA Findings	Phase II ESA or Other Appropriate Investigation Findings	Management Measures
No. 7 Subway Extension			
Alignment (including Intermediate and Terminal Stations)	Petroleum releases, historical uses (e.g., foundries and coal yards) and the presence of Serpentine in bedrock	Field screening of over 100 geotechnical soil borings and laboratory results for three (3) environmental soil borings revealed isolated petroleum impacts to soil and groundwater. Serpentine bedrock present between West 26th Street and West 29th Street beneath Eleventh Avenue.	Isolated petroleum impacts to soil and groundwater would require management.
Site A	On-site: petroleum contamination, historical uses (e.g., iron works, junkyard), historic placement of fill. Off-site: petroleum releases and historical uses (e.g., iron foundries, oil storage and charcoal works).	Five (5) soil borings were taken and one (1) temporary monitoring well was installed. Four (4) soil samples and one (1) groundwater sample revealed concentrations of SVOC and metals, consistent with urban fill.	Fill material underlying the site contains concentrations of SVOCs and metals that require management.
Site L	On-site: petroleum releases, historical uses (e.g., iron works, paint shop, coal yard and bus terminal), historic placement of fill. Suspect LBP, ACM and PCB-containing material present in existing building. Off-site: petroleum spills and historical uses (e.g., coal yards, print shop and gas stations)	Twelve (12) soil borings were taken and three (3) temporary monitoring wells were installed. Twenty-four (24) soil samples and three (3) groundwater samples revealed concentrations of SVOCs and metals, consistent with urban fill.	Fill material underlying the site contains concentrations of SVOCs and metals that require management.
Corona Yard	On-site: The site is above an EPA-designated sole-source aquifer (Lloyd Sand Member). Historical use as a railyard and historic placement of fill. Off-site: automotive repair and wreckage facilities, filling stations and automobile scrap yards) and petroleum releases.	Review of logs for six (6) geotechnical soil borings advanced at the site and a published reference revealed that the Lloyd Sand Member does not underlie Corona Yard. LIRR soil investigation revealed presence of localized petroleum impacts and the fill containing SVOCs that are indicative of urban fill.	LIRR will manage petroleum impacts, consistent with NYSDEC requirements. SVOCs in fill would require management.

**TABLE 14-1 (CONTINUED)
INVESTIGATION FINDINGS**

Location	AHMSS and Phase I ESA Findings	Phase II ESA or Other Appropriate Investigation Findings	Comments
Convention Center Expansion Parcels			
Existing Convention Center	On-site: historical use as a railyard and historic placement of fill Off-site: Petroleum releases, historical uses (e.g., coal house, coal yard, railyard, freight station, USTs, auto repair shops)	Seven (7) soil borings were taken and four (4) monitoring wells were installed. Fourteen (14) soil and four (4) groundwater samples revealed concentrations of SVOCs and metals that are indicative of urban fill.	Fill material underlying the site contains concentrations of SVOCs and metals that require management.
Block 685	On-site: Historic use as a railyard; potential petroleum release(s) associated with USTs; previous testing identified groundwater contamination at the site. Off-site: Reported petroleum releases at adjacent Quill Bus Depot.	Eleven (11) soil borings were taken and five (5) monitoring wells were installed. Twenty (20) soil and six (6) groundwater samples revealed concentrations of SVOCs and metals that are consistent with urban fill. Groundwater contamination noted in previous studies was confirmed and determined to be isolated.	Fill material underlying the site contains concentrations of SVOCs and metals that require management. Groundwater contamination requires management.
Existing Quill Bus Depot	On-site: historical use as a leather tanning company, coal houses, iron yard, Greyhound bus depot, current use as a bus depot and fueling facility, and reported petroleum releases. Suspect LBP, ACM and PCB-containing material present in existing building. Off-site: Former MGP site adjacent to the north	NYCT and Greyhound investigations of petroleum releases included the installation of over eighty (80) soil borings and seventeen (17) monitoring wells and revealed the presence petroleum contamination in soil and groundwater. Groundwater also contaminated from adjacent Manufactured Gas Plant (MGP) site. Extent of contamination has been determined.	The Consent Order between NYCT and NYSDEC will specify management of petroleum impacted soil and groundwater. NYSDEC-approved remedial plan is currently being implemented.
Hotel Site	On-site: Historically a MGP site, (including coal storage, gas manufacturing and purification operations, large gas holding tanks located up to twenty feet below grade), gasoline service station including USTs and fueling and trucking terminal.	Investigation performed by Con Edison included testing of soil, soil gas, and groundwater. Investigation results revealed the presence of MGP wastes at the site and groundwater has been contaminated by MGP wastes and a petroleum release from a nearby service station. Soil gas testing revealed no vapors are entering existing building.	Contamination is being managed by Con Edison in accordance with a NYSDEC-approved Voluntary Cleanup Agreement (VCA).

TABLE 14-1 (CONTINUED)
INVESTIGATION FINDINGS

Location	AHMSS and Phase I ESA Findings	Phase II ESA or Other Appropriate Investigation Findings	Comments
Truck Marshalling Route	On-site: Historical use as a coal yard and presence of railroad tracks. Off-site: Petroleum releases, historical uses (e.g., consolidated gas works, iron yard, a coal house, machine shop and coal yard).	Six (6) soil borings were taken and four (4) monitoring wells were installed. Fourteen soil (14) and four (4) groundwater samples revealed concentrations of SVOCs and metals that are consistent with urban fill.	Fill material underlying the site contains concentrations of SVOCs and metals that require management.
Convention Center Marshalling Yard	On-site: Historical uses (e.g., railroad operations, machine shops and trailer storage). Suspect ACM, LBP and PCB-containing equipment present in buildings. Off-site: Releases of gasoline and dielectric fluid, historical uses (e.g., railyard, garages with USTs, auto repair shops and machine shops).	Six (6) soil borings were taken and four (4) monitoring wells were installed. Fourteen (14) soil and four (4) groundwater samples revealed concentrations of SVOCs and metals that are consistent with urban fill.	Fill material underlying the site contains concentrations of SVOCs and metals that require management.
Intervening Streets	Historical uses (e.g., railroad, freight operations, manufacturing gas, storage of hazardous materials and documented petroleum releases)	Eight (8) soil borings were taken and six (6) monitoring wells were installed. Eighteen (18) soil and twelve (12) groundwater samples revealed concentrations of SVOCs and metals that are consistent with urban fill.	Fill material underlying the site contains concentrations of SVOCs and metals that require management.
Caemmerer Yard			
Caemmerer Yard West	On-site: Historical and current use as a railyard may have resulted in releases of petroleum, metals, PCBs, and applications of pesticides or herbicides. A statistical sampling program is required to characterize hazardous materials from anthropogenic activities, which are random. Off-site: historical uses (lumber yard, motor freight storage and garage with gasoline tanks)	Fifty-seven (57) soil borings were taken and twenty-two (22) monitoring wells were installed. Two-hundred soil (200) and twenty-two (22) groundwater samples revealed localized petroleum contamination in soil and groundwater. Concentrations of SVOCs and metals, consistent with urban fill, were detected. The results of the Phase II ESA validate the statistical sampling approach applied to the site.	Isolated petroleum impacts to soil and groundwater require management. Fill material underlying the site contains concentrations of SVOCs and metals that require management.
Caemmerer Yard East	On-site: Historical and current use as a railyard may have resulted in releases of petroleum, metals, PCBs, and applications of pesticides or herbicides. A statistical sampling program is required to characterize hazardous materials from anthropogenic activities, which are random. Off-site: historical uses (metal works, junk yard, auto repair shop, gasoline station railroad operations)	Thirty-four (34) soil borings were taken and four (4) monitoring wells were installed. One-hundred seven (107) soil and four (4) groundwater samples revealed concentrations of SVOCs and metals, consistent with urban fill in soil and groundwater. The results of the Phase II ESA validate the statistical sampling approach applied to the site.	Fill material underlying the site contains concentrations of SVOCs and metals that require management.

Any hazardous materials which may be encountered during construction would be managed, isolated and/or removed in accordance with the Construction Environmental Protection Program (CEPP) described below and reflective of the Phase I ESA and Phase II investigation results. The CEPP measures will also eliminate the potential for any potential adverse hazardous materials impacts during the operational phase of the Proposed Action.

A CEPP will be developed and implemented for the construction of each of the major public project elements of the Proposed Action, such as the Multi-Use Facility, the Convention Center Expansion, and the No. 7 Subway Extension. Each CEPP would have provisions to prevent or minimize hazardous materials exposures to workers and the general public as well as define the handling, storage, transportation, and disposal of any hazardous materials, which may be discovered during construction. The CEPP would also identify measures to be taken to address any contaminated material that would not be removed as part of construction and therefore would remain in place. Such measures could include the implementation of impermeable barriers to achieve isolation from contaminants such as SVOCs. Elements of each CEPP will address: Health and Safety Plans (HASPs); management plans for Soil, Soil Gas, Spoils, Groundwater, Petroleum Storage Tanks, Asbestos-Containing Building Materials, Lead-Based Paint, and PCB-Containing Equipment. The HASPs would be prepared to protect both project workers and the public during the construction phase. The provisions of the HASPs would be mandatory for contractors and subcontractors engaged in on-site construction activities.

The proposed Zoning Amendments also would not result in significant adverse impacts on development sites identified with the potential to contain hazardous materials. No significant adverse hazardous materials impacts are anticipated as a result of the zoning map amendments because (E) Designations would be placed on the Zoning Map for all tax lots containing the potential to result in hazardous materials contamination. Refer to Table 14-7 below for a complete list of tax lots which would be mapped with an (E) Designation for hazardous materials. The (E) Designation would require that the fee owner of an (E) designated site conduct a testing and sampling protocol, and management where appropriate, to the satisfaction of the DEP before the issuance of a building permit by the Department of Buildings (pursuant to Section 11-15 of the Zoning Resolution-Environmental Requirements). The (E) Designation also includes mandatory construction-related health and safety plans which must also be approved by the DEP. The results of the preliminary screening assessment for the rezoning area are discussed in Section C, “Existing Conditions.”

B. METHODOLOGY

1. Impact Analysis Years

As described in Chapter 3, “Analytical Framework,” two analysis years, 2010 and 2025, are considered in this document. For analytical purposes, reasonable worst-case development scenarios (RWCDs) have been identified for both analysis years. Conditions in each analysis year With the Proposed Action have been evaluated against conditions in the analysis year Without the Proposed Action. Construction impacts are assessed in this document in the two analysis years, 2010 and 2025. Construction activities for the proposed No. 7 Subway Extension and the Multi-Use Facility, would be completed between 2005 and 2010. Their potential impacts are discussed in the 2010 Future With the Proposed Action. The Convention Center Expansion would be constructed in two phases, with the first phase consisting of an expansion to West 40th Street and the second phase consisting of the expansion north to West 41st Street and the demolition and relocation of the Quill Bus Depot under the southern portion of Caemmerer Yard. For the purpose of this assessment, a RWCDs was used, assuming the completion of Phase II of the Convention Center Expansion by 2010. A second assessment is included for 2025, when substantial development, generated as a result of the Proposed Action, would be completed. Construction that would occur between 2010 and 2025 is discussed in

the 2025 analysis year. Refer to Chapter 23, “Construction Impacts,” for a detailed description of the construction activities.

Hazardous materials are often encountered and are of the greatest concern during construction. Construction activities of the following Proposed Action elements are expected to occur prior to 2010 and were evaluated for potential hazardous material impacts during the construction and operational periods:

- No. 7 Subway Extension, including the subway alignment, two stations, ancillary facilities to support the operation, and a storage area at Corona Yard;
- Development generated as a result of the proposed zoning map and text amendments;
- Construction of the Multi-Use Facility over the western portion of the Caemmerer Yard;
- The Convention Center Expansion, including the hotel and the demolition of the existing Quill Bus Depot and relocation of the facility to the southern portion of the Caemmerer Yard, the construction of the Marshalling Yard between West 33rd Street and West 34th Street, and the potential construction of the truck tunnel connecting between the Marshalling Yard and the expanded Convention Center;
- Construction of the southern portion of the Midblock Park and Boulevard System (Block 705 Lot 53 and 54) and the 950-space underground parking garage; and
- Relocation and consolidation of the NYPD Tow Pound and Department of Sanitation New York (DSNY) Facility to within the Hudson Yards Project area (Block 675) (not a project element, but would be accommodated by the Proposed Action).

The 2025 analysis year includes the following elements:

- Remaining development generated as a result of the proposed zoning map and text amendments; and
- Construction of the remaining portion of the Midblock Park and Boulevard System sites.

2. Environmental Assessment Methods

Depending upon the nature of the project element, one or more of the following hazardous materials assessments was performed to properly evaluate the potential for hazardous materials:

- Area Hazardous Materials Screening Survey (AHMSS);
- Phase I Environmental Site Assessments (ESAs) or other appropriate non-intrusive inquiry and investigation;
- Phase II ESAs or other appropriate site investigations;
- Preliminary Assessment (Projected and Potential Development Sites); and
- No. 7 Line Extension (Alignment) Geotechnical Boring Screening.

3. Determining Whether a Hazardous Materials Assessment is Appropriate

The potential for impacts related to hazardous materials can occur when: elevated (i.e., above regulatory guidance values) levels of hazardous materials exist on a site and an action would create pathways for exposure, to either humans or the environment; or an action would introduce new activities or processes using hazardous materials and the risk of human or environmental exposure would be increased. In general, however, it can be difficult to ascertain if a site contains elevated

levels of hazardous materials, and, if suspected to contain elevated levels of hazardous materials, the extent of the potential contamination. Therefore, for any sites with the potential to contain hazardous materials, an assessment of hazardous materials is considered to be appropriate, unless construction of the Proposed Action would not create a public health concern or introduce any new contaminants into the environment. Based on the scope and nature of the Proposed Action, it has been determined that a hazardous materials assessment would be appropriate. In addition, a site assessment for hazardous materials would also be appropriate if any future redevelopment of the property is an action included in Section 200 of the CEQR Technical Manual (e.g., rezoning from commercial to residential, development where underground and/or aboveground storage tanks are on or adjacent to the site). Selection of the types of assessment performed was dependent on the characteristics of the project element. The different types of hazardous materials assessments performed as part of this evaluation are described below.

a) Area Hazardous Materials Screening Survey (AHMSS)

The AHMSS was used as an initial step to identify environmental conditions in the Project Area and was performed to identify PCSs that could affect implementation of the Proposed Action. This review evaluated the overall area from West 28th Street to West 42nd Street, from the Eighth Avenue to Twelfth Avenue, as well as, West 31st to West 33rd Streets between Seventh and Eighth Avenues and West 40th Street to West 42nd Street between Seventh and Eighth Avenues. The evaluation consisted of the review of available historic Sanborn Maps dating from 1890 to 1996, regulatory agency databases (identical to those reviewed for the Phase I ESAs), and a field reconnaissance. These sources were reviewed to develop prior use histories and identify sites whose occupants might have used, stored, generated, or disposed of hazardous materials. Field reconnaissance was performed to confirm the findings of the regulatory agency database report and to identify current land uses that could have the potential to result in the presence of hazardous materials. The results of the AHMSS were subsequently applied to the proposed alignment of the No. 7 Subway Extension to determine whether further investigation (e.g., sampling or other environmental surveys) would be required, and are included in Appendix O.1.

b) Phase I ESA

The objective of a Phase I ESA is to identify the presence or likely presence, use, or release of hazardous substances or petroleum products, defined in the American Society of Testing and Materials (ASTM) Standard Practice E 1527-00 as Recognized Environmental Conditions (RECs). The Phase I ESAs included preliminary evaluations of other potential environmental issues or conditions that are not required by ASTM E 1527-00, such as radon, ACM, LBP and polychlorinated biphenyl (PCB)-containing equipment. The Phase I ESA was performed on properties proposed for acquisition and development or already owned by the Project Sponsors as a result of the Proposed Action. Where access was not possible, reviews of historical sources and regulatory agency databases were conducted, and inspection was limited to a modified site inspection, whereby the site was inspected from the sidewalk. This type of inspection can yield information regarding the presence of underground storage tanks (USTs), because vent pipes and fill ports are visibly evident from the sidewalk.

The Phase I ESAs were conducted to determine past and present uses of properties and to identify potential sources of contamination based on historic and/or current land usage and/or as a result of incidents such as prior release events. This information was obtained through the review of historical maps, regulatory agency databases, records review, reconnaissance of the site and adjoining properties, and interviews with persons familiar with property history and usage. Historical information sources for the Phase I ESAs included Sanborn Real Estate Atlases and Fire Insurance Maps (Sanborn Maps) from 1890 to 1996, City Directories, U.S. Geological Survey (USGS) topographic maps dating from 1943 to 1995, and aerial photographs dating from 1943 to 1984. The

U.S. Environmental Protection Agency (EPA) and New York State Department of Environmental Conservation (NYSDEC) databases reviewed for these assessments included the following:

- National Priority List (NPL)
- Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) list
- Resource Conservation and Recovery Act (RCRA) hazardous waste treatment, storage, and disposal facilities list
- Inactive Hazardous Waste Disposal Sites list
- Major Oil Storage Facilities list (sites storing more than 400,000 gallons of petroleum products)
- Hazardous Waste Generators and Transporters list
- Historic Utility Facilities
- Chemical and Petroleum Bulk Storage Facilities list (under 400,000 gallons storage capacity)
- Hazardous Material Spills database
- Toxic Release Inventory Sites list
- Air and Toxic Wastewater Discharge Sites
- Civil Enforcement Docket sites (sites involved in environmental litigation).

ASTM E 1527-00 is the industry standard for environmental site assessments. The ASTM standard specifies the radial distances from each site for which database searches are performed.

The site reconnaissance included an assessment of the following elements: current use of building; type of heating system; current water and sanitary connections; the presence of vent pipes and fill caps associated with petroleum storage tanks; electrical transformers; areas of dumping or filling; potential ACM; potential LBP; chemical storage; groundwater monitoring wells; and fluorescent light fixtures. Reasonable efforts were made to inspect each property; however, many property owners have not granted site access.

Some properties in which temporary and/or permanent easements would be acquired were not assessed through a Phase I ESA, either because the easements would not be effected by construction, would be insignificant in size or would not likely have surface penetration. For example, the easement that would be required for the portion of the alignment on the curve from West 41st Street to Eleventh Avenue is below private property, approximately 100 feet below grade, and surface penetration would not occur; there is limited potential for encountering hazardous materials in this and comparable situations.

c) Phase II ESA

Phase II ESAs or other appropriate site investigations were performed as appropriate for sites where the AHMSS, Phase I ESAs, or other non-intrusive efforts revealed situations requiring intrusive confirmations of the potential presence of hazardous materials. Phase II ESAs typically include the collection of soil, soil gas, and/or groundwater samples and subsequent laboratory analyses for parameters of concern (e.g., VOCs, SVOCs, PCBs, and metals). The results of the laboratory analysis and on-site observations are used to: confirm the presence or absence of subsurface contamination that was suspected as a result of the identified REC; identify the physical and chemical characteristics of the subsurface; assist in determining requirements for the HASP which would help ensure adequate community and worker health and safety; and evaluate handling, management, and disposal requirements of, as examples, excavated soil and dewatering water.

Phase II ESAs or other appropriate site investigations have been completed for properties owned by the Project Sponsors (e.g., Caemmerer and Corona Yards, existing Convention Center, existing Quill Bus Depot, Truck Marshalling Route, Convention Center Marshalling Yard, along the Alignment) and at two acquisition properties (Site A, Site L). In the case of properties not owned by or accessible

to the Project Sponsors, Phase II ESAs or other appropriate investigations will be completed, as appropriate, prior to construction. The results of all currently available Phase II ESAs are discussed in Section C, Existing Conditions, and the appropriate management measures to be taken will be developed prior to the construction phase of the Proposed Action, including, but not limited to, any site disturbance. For sites where no Phase II ESAs have been completed to date (e.g., properties not owned by the Project Sponsors), this FGEIS assumes, for the purpose of identifying the potential presence of hazardous materials and any proposed management of such materials, a reasonable worst case assessment of hazardous material conditions, as recommended in the CEQR Technical Manual.

The testing required for each Phase II investigation was determined through an evaluation of the environmental conditions identified in the Phase I ESAs and the AHMSS, which focused on potential sources of contamination that could result in impacts as a result of the Proposed Action (e.g., petroleum storage tanks, areas where hazardous materials were used or stored, locations of fill that was historically placed at the site). The evaluation resulted in the development of site-specific work plans that identified the source of the suspected contamination, the methods of investigation to be used, and laboratory testing required to determine whether suspected contamination is present, and if so, what management measures would be required. The Phase II ESAs consisted of the advancement of soil borings, installation of temporary and permanent monitoring wells, and the collection and analysis of soil and groundwater samples and field screening of soil and groundwater.

Depending on the suspected source, type of contaminant, and anticipated contaminant distribution, targeted and/or random soil sampling strategies were implemented. Targeted sampling includes the identification of the potential contaminant source and collection of soil, soil gas, and/or groundwater samples from that source. Targeted sampling is an effective technique when the source of contamination is fixed (e.g., a UST) or if site usage exhibits a definable pattern. Targeted sampling was done for example on the alignment and transit facility equipment insertion and retrieval sites.

Random sampling consists of the development of a statistically based sampling scheme that takes into consideration the spatial aspects of the site and the proposed disturbance (e.g., installation of caissons, excavation, etc.). Random sampling is useful at sites where any suspected potential contamination does not have a specific source (e.g., fill material) or a definable pattern. A random sampling strategy was applied to the investigations performed at Caemmerer Yard in order to permit statistical analysis of the resultant data. This approach was selected because historical fill and use features of the site are the result of random anthropogenic activities over approximately 200 years. A statistically based sampling approach permits an unbiased determination of what testing is required (e.g., number of samples, locations for soil borings) to evaluate potential environmental conditions at the site. The statistical analysis determines the representative environmental conditions at the site based on a 95% confidence interval.

Soil samples were collected from multiple boring locations and depth intervals (within each boring) to develop a horizontal and vertical assessment of contamination. The soil samples were logged, field screened for evidence of contamination, and then submitted to a NYSDOH-certified laboratory for analysis determined by the potential contaminants identified in the Phase I ESA or AHMSS. The analysis included VOCs, SVOCs, metals, PCBs, pesticides, herbicides, and RCRA hazardous waste characteristics.

Groundwater monitoring wells were installed in selected soil borings advanced at the sites. The monitoring well locations were determined through the evaluation of potential contaminant sources and the anticipated groundwater flow direction. Groundwater samples were collected from the monitoring wells and were submitted to a NYSDOH-certified laboratory for analysis determined by the potential contaminants identified in the Phase I ESAs or AHMSS. The analysis included VOCs, SVOCs, metals, PCBs, pesticides, herbicides, and DEP sewer discharge criteria.

The results of the investigation were compared to Phase I expectations and standards and reference values published by the EPA, NYSDEC and DEP, as appropriate. This comparison was used to draw conclusions on the type of management measures that would be required during the construction and operational phases of the Proposed Action. Preliminary Screening Assessment (Rezoning Area)

For all projected and potential development sites identified within the rezoning area, a preliminary screening assessment was conducted pursuant to Title 15, Rules of the City of New York, Chapter 24, Section 4. The conclusion of the preliminary screening assessment is that (E) Designations are warranted for properties expected to experience redevelopment as a result of the proposed rezoning and which may contain the potential for hazardous materials contamination. For these sites, a Phase I Environmental Site Assessment (ESA), pursuant to Section 24-05, would not be required. The (E) Designation ensures that no significant adverse impact would result from the proposed rezoning, because the City requires appropriate measures be undertaken to mitigate potential hazardous materials impacts prior to construction activity. The preliminary screening assessment conducted for the Proposed Action included a review of historical and current land uses of the tax lot(s) included within the projected and potential development sites; adjacent (within 400 feet) lots were assessed as well. Regulatory agency databases were also reviewed for the listing of the aforementioned tax lots listings within the databases.

d) Geotechnical Boring Screening (Along No. 7 Subway Extension Alignment)

Geotechnical borings were advanced along the proposed alignment of the No. 7 Subway Extension in order to assess subsurface conditions that could affect the engineering, design, and construction of the proposed subway extension. Samples of soil and bedrock were collected for assessment of physical properties, including the presence of asbestos fibers found naturally in serpentine rock. During this effort, soil samples from the alignment borings were field screened for hazardous materials such as VOCs, using direct-read instruments such as a photoionization detector (PID). Additionally, information obtained from the screening of the borings aided in the evaluation of PCSs identified in the AHMSS and helped to determine whether further environmental investigation (e.g., Phase II ESIs) is necessary.

4. Application of Assessment Methods

The assessment methodology used to evaluate the potential presence of hazardous materials was specific to the project element; the following paragraphs discuss the assessments implemented for each of the project elements.

a) Acquisition Properties

Acquisition properties are those that would be acquired by the City and other Project Sponsors as part of the Proposed Action and include: properties proposed for the Midblock Park and Boulevard System; Site A (site for Tunnel Boring Machine (TBM) access); Site L (Tenth Avenue Station); those properties proposed for supportive uses (e.g., laydown areas, Sites J, M, N) for the No. 7 Subway Extension; and, those properties to be acquired as part of the Convention Center Expansion. Each of these properties was assessed through a Phase I ESA. Site L and a portion of Site A were also assessed through Phase II ESAs, which further investigated the RECs identified through the Phase I ESAs. The area beneath the Midblock Park and Boulevard System properties to be used for the underground parking facility was included among the properties assessed. Properties to be acquired as part of the Convention Center Expansion were also assessed through a Phase I ESA and Phase II ESAs.

Site access for Phase I ESAs was initiated at each of the proposed acquisition properties through letters to property owners requesting permission to visit the property. The letters were sent via United States Postal Service (USPS) certified mail, with return receipt requested. The property owner

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addresses were obtained from the NYC Department of Finance, the NYC Department of Buildings, the Real Estate Directory of Manhattan, or the DCP. Up to three attempts were made to contact the property owner. When contact was made, site visits were scheduled. If contact with the property owner could not be made, visual investigations, to the extent possible, were performed.

A total of 55 acquisition sites were assessed; these properties and their associated project element are presented in Table 14-2. Where necessary, Phase II ESAs would be performed prior to construction.

**TABLE 14-2
PROPOSED PROPERTY ACQUISITION SITES**

Midblock Park and Boulevard System		No. 7 Subway Extension (Alignment)	
Block / Lot	Street Address	Block / Lot	Street Address
0705/053	524-526 W. 34th St.	0697/001	220 Eleventh Ave. – Site A
0705/054	528-556 W. 34th St.	0697/060	554 W. 26th St. – Site A
0706/001	400 Eleventh Ave.	0705/001	380-386 Eleventh Ave. – Site J
0706/010	539-545 W. 34th St.	0705/005	553-557 W. 33rd St. - – Site J
0706/015	533-535 W. 34th St.	0705/053	524-526 W. 34th St. – Site J
0706/017	527-531 W. 34th St.	1051/001	562-574 Tenth Ave. – Site L
0706/048	534-536 W. 35th St.	1069/029	537-541 Tenth Ave. – Site M
0706/050	538 W. 35th St.	1069/034	543-551 Tenth Ave. – Site M
0706/052	544 W. 35th St.	0763/047	310-312 W. 40th St. – Site N
0706/055	550 W. 35th St.	0706/001	400 Eleventh Ave. – Site P
0707/013	537-541 W. 35th St.	1032/029	641 Eighth Ave. - Station Connections
0707/016	529-535 W. 35th St.	1050/013	441 W. 40th St. - Lay down Area
0707/020	517-527 W. 35th St.	*0707/001	418 Eleventh Ave. – Lay down Area
0707/051	524-526 W. 36th St.	NYPD Tow Pound/DSNY Garage/Park	
0707/054	530-534 W. 36th St.	Block / Lot	Street Address
0707/056	542-546 W. 36th St.	0675/001	260 West Side Highway
0708/001	438-444 Eleventh Ave.	0675/012	613 W. 29th St.
0708/017	527-531 W. 36th St.	0675/024	609 W. 29th St.
0708/020	525 W. 36th St.	0675/026	603 W. 29th St.
0708/046	518 W. 37th St.	0675/029	301 Eleventh Ave.
0708/048	522-524 W. 37th St.	0675/036	309 Eleventh Ave.
0709/017	525-539 W. 37th St.	0675/038	604 W. 30th St.
0709/023	521-523 W. 37th St.	0675/039	606 W. 30th St.
0709/025	513-519 W. 37th St.	Convention Center Expansion Acquisition Sites	
0709/046	510-520 W. 38th St.	Block / Lot	Street Address
0709/052	522-524 W. 38th St.	685	39th to 40th Streets between Eleventh to Twelfth Avenues
0710/011	535 W. 38th St.	1088	40th to 41st Streets Between Eleventh and Twelfth Avenues
0710/015	520 W. 39th St.	1089/003	600 W. 42nd St.
0710/020	519 W. 38th St.	0676/003	280 Twelfth Ave.
1070/020	515 W. 41st St.	0702/050	513 W. 30th St.
		*0707/001	550 W. 36th St.

Note: * This property will be utilized by both NYCT and the Convention Center Expansion as part of the proposed action.

b) Projected and Potential Development Sites

For all projected and potential development sites identified within the rezoning area, a preliminary screening assessment was conducted pursuant to Title 15, Rules of the City of New York, Chapter 24, Section 4. The conclusion of the preliminary screening assessment is that (E) Designations are warranted for lots where development sites were identified to contain the potential for hazardous materials contamination. These sites would require a Phase I ESA, pursuant to Section 24-05 by the developer or owner in coordination with DEP, and manage this site if necessary prior to development.

c) Properties Owned by the Project Sponsors

The Quill Bus Depot, the Convention Center, the site of the proposed Convention Center Marshalling Yard, and both Caemmerer and Corona Yards are existing properties owned by the Project Sponsors. The current and historical land uses of these sites were researched in order to assess the potential

presence of hazardous materials. Sanborn Maps were used to acquire this type of historical information. The Convention Center, the Yale trucking property (Block 685), the site of the proposed Convention Center Marshalling Yard, and Caemmerer and Corona Yards were assessed through Phase I ESAs. Phase II ESAs or other appropriate investigations were carried out for portions of the existing Convention Center, the site of the Proposed Convention Center Marshalling Yard, the existing Quill Bus Depot site, and the MTA Caemmerer and Corona yards. Section H, “Summary of Management Measures” includes information regarding the proposed management approach for hazardous material situations.

d) Alignment Conditions (No. 7 Subway Extension)

The proposed alignment for the No. 7 Subway Extension was initially evaluated through the AHMSS, which provided a broad view of the environmental conditions within the area of the alignment, and which aided in the identification of PCSs. To further investigate conditions along the alignment, a 200-foot buffer (measured outward from the centerline of the proposed alignment) was established to ascertain whether PCSs were within the 200-foot buffer. PCSs that were within this buffer were further evaluated by reviewing the information provided in the regulatory agency database and/or by reviewing subsurface data obtained through environmental screening of geotechnical borings performed in the area of the PCS of concern. In addition, areas along the alignment where extensive subsurface intrusion is proposed (e.g., station locations) were evaluated to determine whether, and to what extent, investigations could be required along the proposed alignment.

Based on the AHMSS and information from the Phase I ESAs, three environmental alignment borings were advanced to evaluate potential contaminants (e.g., VOCs, PCBs, and metals). The results of the investigation are included in Section C, “Existing Conditions”. Potential Contaminants of Concern

The contaminants described in this section are commonly found in urban settings, and for certain materials (e.g., metals), background concentrations can be expected from both natural and anthropogenic sources. Where concentrations exceed regulatory thresholds, an analysis of potential environmental and health effects is required; the need for management could be necessary.

In order to determine such concentrations, environmental sampling and laboratory analysis are required. Laboratory analytical results are used to determine whether the media tested (e.g., soil, soil gas, groundwater, building materials) are considered hazardous and the proper handling and disposal procedures. During construction, hazardous materials would be managed or isolated to protect public health and the environment. Construction measures, including the implementation of site-specific HASPs, dust control measures, contaminated soil and groundwater management plans, and abatement of hazardous building materials prior to construction, would aid in the avoidance of adverse health impacts to workers and the general public. Management measures, including the means for handling specific types of contaminated material, are discussed further in Section H.

The locations of potential contaminants that could be encountered through the Proposed Action can be categorized as being either subsurface (e.g., soil, soil gas, groundwater, consolidated rock) or above grade (e.g., building materials) contaminants. Subsurface contaminants include but are not limited to VOCs; SVOCs; metals; PCBs in soil and groundwater; and asbestos, which can occur naturally in serpentine rock. Above grade contaminants include, but are not limited to ACM, LBP, PCB-containing equipment, and mercury.

e) Subsurface Contaminants (Soil, Soil Gas, Groundwater and Consolidated Rock)

The subsurface could contain contaminants associated with historical uses and prior releases. Certain contaminants, such as petroleum products, could have been released from surface spills or from leaking petroleum storage tanks. Other contaminants, such as VOCs, SVOCs, metals, and PCBs could have resulted from spills at former rail yards and other types of industrial or commercial

facilities. Pesticides and herbicides could have been applied to undeveloped properties or along railroad lines. Manufactured gas plants (MGPs) could have contaminated subsurface soils and groundwater with heavy metals, cyanide, and coal tar (process wastes and byproducts), and petroleum products associated with operation and maintenance activities. Underground electrical substations have the potential to contaminate soil and/or groundwater, with releases of petroleum-containing PCBs.

When contaminants migrate to adjacent properties, it is typically via groundwater flow. Proximity to a particular project element that will require subsurface disturbance is the primary factor when determining the potential for impacts from hazardous materials. The closer a known or suspected contaminated site is to a construction area, the greater the potential is for encountering the subsurface contamination. Sites located hydraulically upgradient to groundwater flow have a greater potential to cause impacts when disturbed, since groundwater may act as a conduit for the transport of subsurface contaminants. While groundwater throughout the Project Area typically flows west toward the Hudson River, local variations are possible due to intervening subsurface structures and nearby dewatering operations that could alter groundwater flow patterns. The characteristics of these contaminants are discussed below.

Volatile Organic Compounds (VOCs)

VOCs include petroleum-associated compounds such as benzene, toluene, ethylbenzene, and xylenes (BTEX); methyl-tertiary-butyl-ether (MTBE); and chlorinated compounds such as tetrachloroethene and trichloroethene, which are found in solvents, degreasers, and cleaners. Methane, produced by the decomposition of organic matter from natural and anthropogenic sources, could also be present as a result of landfilling areas that were formerly inundated. Methane, in itself, is not considered toxic; however, it can be potentially explosive when present in significant concentrations. When present with other VOCs, methane can pose a health and safety risk.

VOCs in soil gas have the potential to affect worker and public health and safety when inhaled. Exposure to VOC vapors can be as harmful as direct contact with, or ingestion of, VOC-contaminated soil or groundwater. Dry cleaning operations, properties with petroleum storage tanks, and former MGP sites are the potential sources for VOC contamination.

Semi-Volatile Organic Compounds (SVOCs)

SVOCs can include naphthalene, anthracene, fluorene and pyrene, which are constituents of diesel fuel. The most commonly encountered SVOC compounds are polyaromatic hydrocarbons (PAHs), which are constituents of partially combusted coal, petroleum, and petroleum-based products such as asphalt. These compounds are commonly found throughout New York City, particularly in areas where historic fill material is present. SVOCs are generally not readily soluble in water and therefore are not likely to migrate far from their source. In most instances, they do not pose a significant threat to human health unless there is direct contact (e.g., dermal contact).

Metals (including Arsenic, Barium, Cadmium, Chromium, Mercury, Nickel, Lead and Selenium)

Metals were used in foundries, smelters, and metalwork facilities, and can be found in paints, inks, petroleum product additives, and coal ash. Although many metals are naturally occurring, elevated metal concentrations are often found in areas primarily comprised of fill material. Metals generally do not migrate significantly in the subsurface environment, and therefore would usually only be of concern on sites where the contaminant was generated. Metals can remain undisturbed in subsurface soils if the ground surface is covered by an impervious surface (i.e., asphalt, concrete, etc.), and the metal concentrations and characteristics present are not such that groundwater could be contaminated.

Polychlorinated Biphenyls (PCBs)

Commonly present in dielectric fluid from transformers and feeder cables, PCBs are of concern at rail yards, train maintenance facilities, and electric transformer locations where leakage into soil could have occurred. Occasionally, PCB-containing waste oils were applied in rail yards to limit vegetation; these waste oils were also used on coal piles and dirt roads as a dust suppressant.

Pesticides and Herbicides

These compounds are used to control rodents, insects, and vegetation at undeveloped properties or along railroad tracks. Pesticides and herbicides are generally not widespread in subsurface urban soils and groundwater.

Cyanide

Cyanide was produced as a waste product at MGP sites. In many instances, MGP waste products were disposed of on-site by using the waste as landfill of low-lying areas of the site.

Naturally Occurring Contaminants in Soil Gas

In addition to contaminants from releases of hazardous materials, naturally occurring contaminants, such as radon and methane, may be present in soil gas. Radon is a colorless, odorless radioactive gas that results from the natural breakdown of uranium minerals in soil, rock, and water. If present, it can concentrate in buildings, entering through cracks and other penetrations of a building foundation. Radon concentrations vary City-wide, reflecting subsurface conditions.

Methane, produced by the decomposition of organic matter from natural and anthropogenic sources, may also be present as a result of land filling areas that were formerly inundated. Methane, in itself, is not considered toxic; however, it can be potentially explosive when present in significant concentrations. When present with other VOCs, methane can pose a health and safety risk.

Naturally Occurring Asbestos (NOA)

Naturally occurring asbestos (NOA) could be present in consolidated rocks including Serpentine, Talc Schist, and Chloride Schist. Asbestos fibers are potentially harmful if they become airborne and are inhaled.

f) Above-Grade Contaminants (Building Materials)***Asbestos-Containing Materials (ACM)***

Building materials used in the construction of existing buildings could contain asbestos. Asbestos fibers are potentially harmful if they become airborne and are inhaled. The EPA prohibited the use of asbestos in spray-on fireproofing in 1972 and in thermal insulation in 1978. In addition, normally non-friable asbestos-containing products (i.e., those that when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure) that are typically stable could be damaged during the abatement process, and would be considered friable ACM thereafter.

Lead-Based Paint (LBP)

Buildings and other structures constructed or re-painted prior to 1960 may contain LBP. It has been determined that dust from LBP may cause learning disabilities and other adverse health effects when inhaled or ingested. Although the use of LBP in residences was banned by the Consumer Products Safety Commission in 1978 and by New York City in 1960, the use of LBP was common in New York City prior to this ban.

PCB-Containing Equipment

PCBs are present in transformers, electrical feeder cables, hydraulic equipment, and fluorescent light ballasts that were manufactured prior to 1978. Disposal of such items must be in accordance with

applicable federal and State regulations, so as to minimize human and environmental contact with PCBs. PCBs do not readily break down in the environment, and thus could remain in place for long periods of time. With regard to construction, PCBs can present risks to workers and public health and safety, through direct contact or ingestion of soil containing PCBs.

5. Regulations and Guidance Values

The U.S. Occupational Safety and Health Administration (OSHA) has established permissible exposure limits for workers for airborne particulate, gas, and certain levels of organic and chemical vapors. Agencies, such as the DEP, NYSDEC, DOL and EPA, have set enforceable criteria to protect the public and the environment. Such agencies have established criteria for various chemical compounds, which vary depending upon the type of exposure. The soil and groundwater standards and reference values are generally based on the risks associated with either direct contact (ingestion, inhalation, or dermal contact) that could occur in a residential setting, or the potential impacts associated with groundwater that is used as a source of drinking water. Relevant standards and guidelines are summarized below and include federal hazardous waste regulations; various soil reference values promulgated by New York State agencies; New York State groundwater standards; and relevant regulations, standards, and guidelines for the removal of petroleum storage tanks, ACM, LBP, and PCBs.

a) OSHA Permissible Exposure Limits

The OSHA sets permissible exposure limits (PELs) to protect workers against the health effects of exposure to hazardous substances. PELs are enforceable regulatory limits on the amount or concentration of a substance in the air, and can also contain a skin designation. OSHA PELs are based on an eight-hour exposure. PELs for approximately 500 contaminants have been established and are contained in 29 CFR 1910.1000, the air contaminants standard.

b) Hazardous Waste Regulations

As defined by the Federal Resource Conservation and Recovery Act (RCRA), waste (e.g., excavated soil or building materials removed during demolition or renovation activities) can be classified as “hazardous waste” if it contains one of the federally “listed wastes” in the EPA’s Code of Federal Regulations (40 CFR) 261 “Identification and Listing of Hazardous Waste,” or if it possesses one of four hazardous characteristics (“D” wastes): ignitability, reactivity, corrosivity, or toxicity. The EPA has developed standard tests to measure these four characteristics. Three tests measure physical characteristics (ignitability, reactivity, and corrosivity) using numerical standards. The fourth, toxicity, the one most frequently exceeded by contaminated soils, is tested using the Toxicity Characteristic Leaching Procedure (TCLP), which provides a conservative estimate of the concentrations of contaminants that would leach into the groundwater if the material were disposed of in an unlined landfill. The RCRA toxicity characteristic regulatory limits are listed in Table 14-3.

TABLE 14-3
RCRA REGULATORY LIMITS

Volatile Organics	mg/l	Pesticides	mg/l
Benzene	0.5	Chlordane	0.03
Carbon Tetrachloride	0.5	Endrin	0.02
Chlorobenzene	100.0	Heptachlor	0.008
Chloroform	6.0	Heptachlor epoxide	0.008
1,2 Dichloroethane	0.5	Lindane	0.4
1,1 Dichloroethylene	0.7	Methoxychlor	10.0
Methyl ethyl ketone	200.0	Toxaphene	0.5
Tetrachloroethylene	0.7	Herbicides	mg/l
Trichloroethylene	0.5	2,4-D (Dichlorophenoxyacetic acid)	10.0
Vinyl chloride	0.2	2,4,5-TP (Silvex)	1.0
Acid Extractables	mg/l	Metals	mg/l
o-cresol	200.0	Arsenic	5.0
m-cresol	200.0	Barium	100.0
p-cresol	200.0	Cadmium	1.0
Cresol	200.0	Chromium	5.0
Pentachlorophenol	100.0	Lead	5.0
2,4,5-Trichlorophenol	400.0	Mercury	0.2
2,4,6- Trichlorophenol	2.0	Selenium	1.0
		Silver	5.0
Base Neutrals	mg/l	Physical Characteristics	mg/l
1,4 Dichlorobenzene	7.5	Ignitability (°F)	140
2,4 Dinitrotoluene	0.13	Corrosivity (pH units)	2.0 to 12.5
Hexachlorobenzene	0.13	Reactivity to cyanide (mg/l)	250
Hexachlorobutadiene	0.5	Reactivity to sulfide (mg/l)	500
Base Neutrals	mg/l		
Hexachloroethane	3.0		
Nitrobenzene	2.0		
Pyridine	5.0		

Source: 40 CFR §261

Note: mg/l = milligrams per liter in leachate generated from toxicity characteristic leaching procedure.

c) Soil Reference Values

Except for specific contaminants and circumstances, neither the federal nor the New York State governments have promulgated a comprehensive set of numerical standards for the evaluation of environmental impacts caused by chemical contaminants in soils. Therefore, guidance or reference values are used to determine whether soils require management. The reference values have not undergone the rigorous analyses required for regulatory standards and, in many cases, might not be applicable to the situations found in the vicinity of the Proposed Action. In general, contaminants detected in soils are compared to the NYSDEC Division of Hazardous Waste Remediation's Technical and Administrative Guidance Memorandum (TAGM) #4046, "Determination of Soil Cleanup Objectives and Cleanup Levels," January 1994 (amended in December 2000). TAGM #4046 addresses contaminants in soil (i.e., VOCs, SVOCs, metals, PCBs and pesticides and herbicides) from any potential source, and includes guidance values for chemicals of concern.

d) Water Standards and Regulations

Contaminated groundwater could be encountered during excavation or dewatering activities. The NYSDEC has promulgated drinking water standards and uses them as reference values for groundwater. These potable groundwater standards (also known as Class GA Standards) are among the most stringent in the nation. Although these standards are intended for public drinking water

supplies, they are generally applied by the NYSDEC to groundwater and are also used to evaluate overall water quality.

New York State has also implemented the State Pollution Discharge Elimination System (SPDES), which provides permit requirements and effluent limitations for wastewater discharges to the waters of the State. The SPDES process was established to implement the Clean Water Act and water quality standards promulgated by the EPA. The DEP's Bureau of Wastewater Pollution Control has established regulations limiting the concentrations of certain constituents in effluent discharged to the municipal sewer system. The DEP's regulations are based, for the most part, on the effect of the contaminants on the receiving waters or treatment plant. Prior to discharging to the sewer, a permit from DEP is required.

e) Petroleum Storage Tanks

Site clearing, excavating, and building demolition can lead to the discovery of underground and/or aboveground storage tanks. The removal of petroleum storage tanks is regulated by NYSDEC (6 NYCRR Part 613.9), which requires that tanks no longer in use be closed in place or removed according to specific requirements. Contaminated soils surrounding the tanks, separate phase product on the water table, or contaminants dissolved in the groundwater must also be removed (6 NYCRR Part 611.6). Article 12 of the New York Navigation Law provides notification and management requirements for spills to the waters of the State.

f) Asbestos-Containing Materials and Naturally Occurring Asbestos

Asbestos can be encountered through demolition of buildings and/or other structures and through the tunneling of serpentine rock. The proper abatement and disposal of ACM is required under State of New York Article 30 - Labor Law, Asbestos or Products Containing Asbestos Licensing 12 NYCRR - Part 56 Asbestos Regulations (i.e., ICR #56) and the requirements of DEP Title 15. Handling and disposal of asbestos would conform to OSHA Standard 29 CFR 1926.1101, Department of Transportation (DOT) 49 CFR 171, 172 and 173, EPA Standard 40 CFR Part 61 and the MTA NYCT policies (i.e., NYCT #12N), which documents "System Wide Variances" of ICR #56.

The OSHA and EPA provide requirements for the protection of worker and public health and safety during operations that have the potential to disturb NOA. Regulatory agencies consider serpentinite as a source of ACM because significant fibrous constituents coexist in a heterogeneous mix with the non-fibrous portion of the rock.¹ Talc Schist and Chlorite Schist rocks are also known to contain NOA.² When rocks with potential for NOA are disturbed, the asbestos fibers could be released into the air at the site and inhaled into the respiratory system of workers, or could be released into the environment.

Prior to construction, additional sampling and laboratory testing will be performed to characterize bedrock to address health, safety, and disposal considerations. The results of the testing would be incorporated into the CEPP.

g) Lead-Based Paints

LBP may be present in buildings and other structures. Surfaces coated with LBP require proper removal of paint that would generate lead-containing dust or vapors when disturbed. Lead dust could be generated through mechanical processes (i.e., scraping, demolition, scarification, etc.) that disturb surfaces coated with LBP (e.g., mortar, plaster, and brick). Lead fumes could be generated through the heating of materials that are coated with LBP, such as structural steel.

¹ (Dusek and Yetman, 1997)

² (Clinkenbeard et al., 2002)

In all cases, an exposure assessment would be performed prior to demolition and construction to assess whether lead exposure would be likely to occur during demolition or renovation activities. If the exposure assessment indicates the potential to generate airborne dust or fume lead levels exceeding health-based standards, a higher personal protection equipment standard would be employed to counteract the exposure. In addition, a different application of work practices could be required to protect workers and the public. This will be done in accordance with NYCT 12L master specifications and the City lead removal protocol and other applicable Federal, State and City regulations.

h) Polychlorinated Biphenyls

Suspect PCB-containing equipment would be surveyed and evaluated prior to building demolition or renovation. PCB-containing equipment that would be disturbed by the work would be removed and disposed of in accordance with applicable federal, State, and local regulations.

6. Handling, Storage, Transportation, and Disposal of Hazardous Materials

Wastes containing hazardous materials require special handling, storage, transportation, and disposal methods to prevent releases that could impact human health or the environment. The NYSDEC requires the implementation of fugitive dust control measures at sites that contain elevated concentrations of SVOCs and metals (TAGM 4031, Fugitive Dust Suppression and Particulate Monitoring Program). To confirm the effectiveness of the dust control measures, Community Air Monitoring Plans that are approved by the New York State Department of Health are implemented if applicable.

Depending on the nature of the material, federal, State, and local regulations require the use of special containers or construction of impoundments for on-site storage of the material to prevent the release of hazardous materials to the environment. The federal, State, and local Departments of Transportation (DOT) have requirements for transportation of wastes containing hazardous materials. The NYSDEC identifies hazardous waste and other waste management requirements in 6 NYCRR Parts 360 through 376. Facilities that receive hazardous materials require federal, State, and local permits to accept the waste. The waste facilities require representative waste sampling and laboratory analysis prior to accepting material for disposal.

Requirements for handling, storage, transportation, and disposal of hazardous materials will be included in the CEPP, as described in Section H below.

C. EXISTING CONDITIONS

According to historical maps and other available historical documentation (see Chapter 9, “Architectural Historic Resources” and Chapter 10, “Archaeological Resources” for additional information), much of the Project Area was originally comprised of river banks and adjacent wetland areas of the Hudson River prior to the industrial development in the early 19th century. During this period, significant railroad development occurred throughout much of the Project Area to facilitate the expanding shipping-, manufacturing-, and transportation-related development, including the area between what is now Eleventh and Twelfth Avenues.

Early development in and around the railroad yards, close to the port areas, was a mix of small industries, metalworks, lumberyards, sawmills, hay and freight depots, stockyards, meat processing and packing facilities, and gas tanks interspersed among row houses. The areas east of Tenth Avenue were more residential than the locations closer to the port areas along the Hudson River.

Several distinct actions changed the character of the Project Area in the early part of the 20th century. The first major action was the development of a passenger rail tunnel under the Hudson River by the Pennsylvania Railroad, to a new station located at West 33rd Street and Seventh Avenue. The second

action occurred in 1927 when the City instituted the West Side Improvement Project, which resulted in the construction of the elevated highway and a number of changes to existing railroad operations. The third action was the construction of the Lincoln Tunnel, which removed many homes and businesses from the Project Area, creating roads and ramps throughout the area. Shortly thereafter, the PABT was constructed between West 40th and 42nd Streets, from Eighth to Ninth Avenues.

Currently, the Project Area is a mix of residential, commercial, manufacturing, and transportation-related facilities, dominated by large public buildings and commercial parking lots.

1. Rezoning Area (Current and Historic Conditions)

Table 14-4 includes a list of the projected and potential development sites by block and lot number. Projected and potential sites are distinguished and the site number can be referenced to those in Section C.1.a and C.1.b.

As described in Chapter 3 “Analytical Framework,” not all of the projected and potential development sites are expected to be developed; however, they were evaluated and assessed for land uses that indicate the potential presence of hazardous materials. Additionally, regulatory agency databases were searched to determine if the addresses of the sites were listed on databases such as those listed in Section B, “Methodology”.

**TABLE 14-4
PROJECTED AND POTENTIAL DEVELOPMENT SITES PRELIMINARY SCREENING**

Projected Development Sites								
Site No.	Block	Lot(s)	Site No.	Block	Lot(s)	Site No.	Block	Lot(s)
1	702	1	16	1070	49, 50, 54	31	729	1
2	705	1, 5, 54, 68	17	1090	9, 10, 11, 109	32	729	60
3	705	29, 30, 32, 39, 41, 42, 45, 46, 53	18	1090	20, 23, 29, 36, 42	33	729	50
4	706	1, 10, 55	19	1051	1, 49, 50, 51, 53, 57	34	729	50, 60, 163
5	706	17, 20, 29, 35, 36	20	1050	1, 6, 61, 158	36	763	31*, 32, 34, 38, 42, 43*, 44*
6	707	1, 13, 56	21	736	1, 73	37	762	6
7	707	20, 26, 31, 39, 41, 45, 51	22	736	30-40	38	762	61
8	708	1, 62, 65	23	735	1, 6, 7, 8, 9, 65	39	762	13, 14*, 16, 17*, 60
9	708	20, 22, 24, 37, 41-43, 46	24	735	22, 30	40	761	62
10	709	1-3, 7, 13-15, 17, 60, 61, 63, 66-68, 70, 71	25	734	1, 5, 66	41	761	10, 13, 20*, 43
11	709	25, 30, 31, 33, 36, 37, 41, 43, 45, 46	26	734	16, 18, 52, 55	42	760	7
12	710	1, 6, 11, 58	27	733	1, 67, 68, 70	43	758	1, 5, 7, 14*
13	710	20, 22, 27, 29, 42	28	733	25, 28, 30, 31	44	754	44
14	1069	24, 29, 34, 136	29	732	1, 73			
15	1070	1	30	731	39, 40, 41, 43, 44, 48			

**TABLE 14-4 (CONTINUED)
PROJECTED AND POTENTIAL DEVELOPMENT SITES PRELIMINARY SCREENING**

Potential Development Sites								
Site No.	Block	Lot(s)	Site No.	Block	Lot(s)	Site No.	Block	Lot(s)
45	781	1	65	728	34	82	760	51
46	1069	1	66	1033	25, 41	83	760	12
47/48	711	1	67	763	72, 73	84	760	16, 18, 20
49	1071	20, 23, 29				85	760	21
50	1051	31-33, 35, 36, 135, 138	68	763	8*, 12, 14, 17, 60, 65, 67	86	759	14
51	737	30, 31, 32, 33	69	763	49, 56, 7502*	87	759	61
52	736	1, 73	70	763	28, 45, 46, 47	88	759	23, 24*, 25*, 26, 27, 29*, 54*, 55
53	735	11, 12*, 13, 17, 55*, 57*, 58*, 59*, 60	71	762	1, 2	89	759	49, 52*, 53*
54	734	6, 7, 8, 62*	72	762	11	90	754	63
55	734	9*, 10, 13*	73	762	19	91	754	51
56	733	59*, 60, 61, 62, 63, 64, 65*, 66*	74	762	46, 48*, 49*	92	780	15*, 17*, 19, 26*, 45*, 60*
57	733	8, 9, 58	75	761	5, 7, 9*	93	779	7*, 8
58	733	23, 24, 43*, 44*, 45*, 46*, 47	76	761	41	94	779	25-28, 52*, 53-56
59	732	70, 72*	77	761	28	95	778	7, 13, 16, 18, 66, 70
60	732	50	78	760	67, 68	96	778	52*, 55*, 57
61	731	22	79	760	63	97	778	25, 27, 28*
62	728	4, 67, 69	80	760	58, 59, 60, 61*, 62*	98	778	29, 30, 31, 32*
63	728	60	81	760	55	99	778	33, 34, 46*

Note: Potential Development Site 68 is considered in the Future Without the Proposed Action Condition.

The following are descriptions of the historical and/or current land uses identified on each of the potential and projected development sites and the type of contamination (either non-petroleum or petroleum related) that could be present on the site. Lots indicated with an asterisk (*) are not expected to be redeveloped under the Proposed Action, and therefore would not be mapped with an (E) Designation. These lots would transfer air rights to adjacent lots within the development site.

a) Projected Sites

Projected Development Site 1

Block 702 Lot 1 has historically been and is currently occupied by a rail yard. As a result, there is potential for petroleum and non-petroleum contamination on the site.

Projected Development Site 2

This site comprises Block 705 Lots 1, 5, 54, and 68, which are currently occupied by the Copacabana nightclub. Historically, this site was occupied by a machine shop. As a result, there is potential for non-petroleum contamination on the site.

Projected Development Site 3

This site comprises Block 705 Lots 29, 30, 32, 39, 41, 42, 45, 46, and 53, which are currently, and were historically, occupied by a publishing shop, Federal Express package distribution center and garage, and commercial offices; therefore there is potential for non-petroleum contamination on the site.

Projected Development Site 4

This site comprises Block 706 Lots 1, 10, and 55, which are currently occupied by Bell Atlantic vehicle/truck storage, a construction supply business, and a vacant building. Historically, this site

was occupied by a foundry; therefore there is potential for non-petroleum and petroleum contamination on the site.

Projected Development Site 5

This site comprises Block 706 Lots 17, 20, 29, 35, and 36, which are currently occupied by an auto repair facility and vehicle parking. Historically, this site was occupied by a foundry; therefore, there is potential for non-petroleum and petroleum contamination on the site.

Projected Development Site 6

This site comprises Block 707 Lots 1, 13, and 56, which are currently occupied by open space and an auto repair facility. Historically, this site was occupied by a maintenance garage and railroad right-of-way. Due to the historical presence of the maintenance garage and railroad right-of-way and the current presence of the auto repair, there is potential for non-petroleum and petroleum contamination on the site.

Projected Development Site 7

This site comprises Block 707 Lots 20, 26, 31, 39, 41, 45, and 51, which are currently occupied by vehicle parking, an auto repair facility, and warehouse/storage space. Historically, this site was occupied by an auto repair shop. Due to the historical presence of the auto repair, there is potential for petroleum contamination on the site.

Projected Development Site 8

This site comprises Block 708 Lots 1, 62, and 65, which are currently occupied by an auto repair facility and petroleum storage (identified through Sanborn Map review and/or observed during site walk-by), vehicle parking, and a railroad right-of-way. As a result, there is potential for petroleum and non-petroleum contamination on the site.

Projected Development Site 9

This site comprises Block 708 Lots 20, 22, 24, 37, 41-43, and 46, which are currently occupied by an auto repair facility and contain petroleum storage (e.g., fuel oil storage), a dry cleaning facility, and vehicle parking. Historically, this site was occupied by a railroad right-of-way. As a result, there is potential for petroleum and non-petroleum contamination on the site.

Projected Development Site 10

This site comprises Block 709 Lots 1-3, 7, 13-15, 17, 60, 61, 63, 66-68, 70, and 71, which are currently occupied by parking lots, auto repair facilities and contain petroleum storage (e.g., fuel oil storage). Historically, this site was occupied by a railroad right-of-way. As a result there is potential for petroleum and non-petroleum type contamination on the site.

Projected Development Site 11

This site comprises Block 709 Lots 25, 30, 31, 33, 36, 37, 41, 43, 45, and 46, which are currently occupied by auto repair facilities, vehicle parking, and a garbage reduction service. Historically, this site contained petroleum storage (e.g., gasoline tanks) and an auto repair facility. Due to the presence of petroleum storage and auto repair, there is potential for petroleum contamination on the site.

Projected Development Site 12

This site comprises Block 710 Lots 1, 6, 11, and 58, which are currently occupied by vehicle parking and an auto repair facility. Historically, this site contained petroleum storage (e.g., gasoline tanks), railroad right-of-way and an auto repair. As a result, there is potential for petroleum and non-petroleum contamination on the site.

Projected Development Site 13

This site comprises Block 710 Lots 20, 22, 27, 29, and 42, which are currently occupied by a machine shop, an auto repair facility, and warehouse storage. Historically, this site contained petroleum storage (e.g., gasoline tanks), an auto repair and a machine shop. As a result, there is potential for petroleum and non-petroleum contamination on the site.

Projected Development Site 14

This site comprises Block 1069 Lots 24, 29, 34, and 136, which are currently occupied by a religious institution, vehicle parking, and an auto repair facility. Historically, this site contained petroleum storage (e.g., gasoline tanks) and an auto repair facility. Due to the presence of petroleum storage and an auto repair, there is potential for petroleum contamination on the site.

Projected Development Site 15

This site comprises Block 1070 Lot 1, which is currently occupied by a Federal Express distribution facility and garage, and was historically occupied by an electrical substation; therefore, there is potential for non-petroleum contamination on the site. [The adjacent Lot 5 is the Con Edison Substation on this block.]

Projected Development Site 16

This site comprises Block 1070 Lots 49, 50, and 54, which are currently occupied by vehicle parking. Historically, this site was occupied by an electrical substation. As a result, there is potential for petroleum and non-petroleum contamination on the site.

Projected Development Site 17

This site comprises Block 1090 Lots 9, 10, 11, and 109, which contain a currently vacant lot, and three tenement buildings with ground floor commercial/retail uses. Historically, this site was occupied by a railroad equipment manufacturer. As a result, there is potential for non-petroleum contamination on the site.

Projected Development Site 18

This site comprises Block 1090 Lots 20, 23, 29, 36, and 42, which currently contain petroleum storage (e.g., fuel oil tanks), Verizon truck storage and maintenance facilities, and a gas station. As a result, there is potential for petroleum contamination on the site.

Projected Development Site 19

This site comprises Block 1051 Lots 1, 49, 50, 51, 53, and 57, which are currently occupied by a commercial auto rental facility, theaters, and commercial offices. Historically, this site was occupied by the same auto rental facility. As a result, there is potential for petroleum contamination on the site.

Projected Development Site 20

This site comprises Block 1050 Lots 1, 6, 61, and 158, which are currently occupied by vehicle parking and community facilities. Historically, this site was occupied by a coal yard and a piano factory. As a result, there is potential for non-petroleum contamination on the site.

Projected Development Site 21

This site comprises Block 736 Lots 1 and 73, which are currently occupied by transportation uses (e.g., roadways). Historically, this site contained petroleum storage (e.g., gasoline tanks). As a result, there is potential for petroleum contamination on the site.

Projected Development Site 22

This site comprises Block 736 Lots 30-40, which are currently occupied by vehicle parking, a catering business, and residential uses. Historically, this site contained petroleum storage (e.g., gasoline tanks). As a result, there is potential for petroleum contamination on the site.

Projected Development Site 23

This site comprises Block 735 Lots 1, 6-9, and 65, which are currently occupied by vehicle parking and auto repair facilities. Historically, this site contained an auto repair shop and petroleum storage (e.g., fuel oil tanks). As a result, there is potential for petroleum contamination on the site.

Projected Development Site 24

This site comprises Block 735 Lots 22 and 30, which are currently occupied by transportation uses (roadways) and residential uses, and historically by a trucking terminal; therefore, there is potential for petroleum contamination on the site.

Projected Development Site 25

This site comprises Block 734 Lots 1, 5, and 66, which are currently occupied by an auto repair facility and residential uses. Historically, this site contained a gas station and petroleum storage (e.g., gasoline tanks). As a result, there is potential for petroleum contamination on the site.

Projected Development Site 26

This site comprises Block 734 Lots 16, 18, 52, and 55, which are currently occupied by vehicle parking, vehicle storage, and transportation uses (roadways). Historically, this site contained petroleum storage (e.g., fuel oil tanks). As a result, there is potential for petroleum contamination on the site.

Projected Development Site 27

This site comprises Block 733 Lots 1, 67, 68, and 70, which are currently occupied by vehicle parking. Historically, this site was occupied by a furniture factory. As a result, there is potential for non-petroleum and petroleum contamination on the site.

Projected Development Site 28

This site comprises Block 733 Lots 25, 28, 30, and 31, which are currently occupied by vehicle parking and adjacent to (within 400 feet) Block 733, Lot 44. Therefore, there is potential for petroleum contamination on the site due to the historical presence of a machine shop at Block 733, Lot 44.

Projected Development Site 29

This site comprises Block 732 Lots 1 and 73, which are currently occupied by an auto repair facility and a gasoline service station which contains petroleum storage (e.g., fuel oil tanks); historically, this site was occupied by a gas station. As a result, there is potential for petroleum contamination on the site.

Projected Development Site 30

This site comprises Block 731 Lots 39-41, 43-44, and 48, which are currently occupied by residential buildings with ground floor retail, including restaurants and a hardware store. Historically, this site was occupied by the railroad right-of-way and photography processing. As a result, there is potential for petroleum and non-petroleum contamination on the site.

Projected Development Site 31

Block 729 Lot 1 is currently adjacent to (within 400 feet) Block 729, Lot 50. Due to the historical presence of the railroad right-of-way at Block 729, Lot 50, there is potential for petroleum and non-petroleum contamination on the site.

Projected Development Site 32

Block 729 Lot 60 is currently occupied by vehicle parking. Historically, this lot was occupied by the trucking terminal and railroad right-of-way. Due to the historical presence of the trucking terminal and railroad right-of-way, there is a potential for petroleum and non-petroleum contamination on the site.

Projected Development Site 33

Block 729 Lot 50 is currently occupied by the railroad right-of-way. Historically, this lot was occupied by the railroad right-of-way. As a result, there is potential for petroleum and non-petroleum contamination on the site.

Projected Development Site 34

This site comprises Block 729 Lots 50, 60, and 163, currently occupied by the railroad right-of-way and a commercial loft building. Historically, this site was occupied by a railroad right-of-way. As a result, there is potential for petroleum and non-petroleum contamination on the site.

Projected Development Site 36

This site comprises Block 763 Lots 31*, 32, 34, 38, and 42, 43*, 44*, which are currently occupied by commercial, retail, and residential uses. Historically, this site was occupied by an electrical substation. As a result, there is potential for non-petroleum contamination on the site.

Projected Development Site 37

Block 762 Lot 6 is currently occupied by a commercial development; historically, this lot was occupied by a machinery repair shop. As a result, there is potential for petroleum contamination on the site.

Projected Development Site 38

Block 762 Lot 61 is currently adjacent to (within 400 feet) a site with potential contamination, Block 763 Lot 60, which is currently the site of an auto repair facility. As a result, there is potential for petroleum contamination on the site.

Projected Development Site 39

This site comprises Block 762 Lots 13, 14*, 16, 17*, and 60, which are currently occupied by retail, residential, and commercial uses. Historically, this site was occupied by a machinery repair and publishing shop. As a result, there is potential for petroleum and non-petroleum contamination on the site.

Projected Development Site 40

Block 761 Lot 62 is currently adjacent to (within 400 feet) Block 761 Lot 10, which is currently a machinery repair facility. As a result, there is potential for petroleum contamination on the site.

Projected Development Site 41

This site comprises Block 761 Lots 10, 13, 20*, and 43, which are currently occupied by a paper product manufacturer, sewing machine manufacturer, and vehicle parking. Historically, this site was occupied by a machinery repair and textiles manufacturer. As a result, there is potential for petroleum and non-petroleum contamination on the site.

Projected Development Site 42

Block 760 Lot 7 is currently adjacent to (within 400 feet) Block 760 Lot 68, which contains a gasoline station. Therefore, there is potential for petroleum contamination on the site.

Projected Development Site 43

This site comprises Block 758 Lots 1, 5, 7 and 14*, which are currently occupied by vehicle parking, commercial, retail, and public/private institution uses. Historically, this site was occupied by a coal yard. Due to the historical presence of the coal yard, there is potential for non-petroleum contamination on the site.

Projected Development Site 44

Block 754 Lot 44 is currently occupied by vehicle parking. Historically, this lot was occupied by railroad right-of-way. As a result, there is potential for petroleum and non-petroleum contamination on the site.

b) Potential Development Sites

Potential Development Site 45

Block 781 Lot 1 is currently occupied by Pennsylvania Station (railroad uses) below-grade and Madison Square Garden above-grade. Historically, this lot was occupied by railroad right-of-way. As a result, there is potential for petroleum and non-petroleum contamination on the site.

Potential Development Site 46

Block 1069 Lot 1 is currently occupied by auto sales and service. Historically, this lot was occupied by commercial developments. As a result, there is potential for petroleum contamination on the site.

Potential Development Site 47/48

Block 711 Lot 1 is currently occupied by transportation uses (Lincoln Tunnel entrance to north tube). Historically, this lot was occupied by a railroad right-of-way; therefore, there is potential for petroleum and non-petroleum contamination on the site.

Potential Development Site 49

This site comprises Block 1071 Lots 20, 23, and 29, which are currently occupied by a lumberyard, hotel, retail uses. Historically, this site was occupied by a railroad right-of-way and lumberyard. As a result, there is potential for petroleum and non-petroleum contamination on the site.

Potential Development Site 50

This site comprises Block 1051 Lots 31-33, 35, 36, 135, and 138, which are currently occupied by commercial, retail, and theater uses. Historically, this site was occupied by a photography processing facility. As a result, there is potential for non-petroleum contamination on the site.

Potential Development Site 51

This site comprises Block 737 Lots 30-33, which are currently occupied by vacant land, commercial, and retail uses. Historically, these lots contained petroleum storage (e.g., gasoline tanks); therefore, there is potential for petroleum contamination on the site.

Potential Development Site 52

This site comprises Block 736 Lots 1 and 73, which are currently occupied by transportation uses (below-grade Lincoln Tunnel infrastructure and roadways for the center and southern tubes). Historically, these lots contained a gas station; therefore, there is potential for petroleum contamination on the site.

Potential Development Site 53

This site comprises Block 735 Lots 11, 12*, 13, 17, 55*, and 57*, 58*, 59*, 60, which are currently occupied by an auto repair facility, vehicle parking, vacant land, a vacant building, and residential. Historically, this site was occupied by auto repair. As a result, there is potential for petroleum contamination on the site.

Potential Development Site 54

This site comprises Block 734 Lots 6-8 and 62*, which are currently occupied by vehicle parking, residential, and commercial. Historically, this site was occupied by an auto repair shop and a wrecking facility. As a result, there is potential for petroleum contamination on the site.

Potential Development Site 55

This site comprises Block 734 Lots 9*, 10, and 13*, which are currently occupied by a warehouse and residential uses, and were historically occupied by an auto repair facility; therefore, there is potential for petroleum contamination on the site.

Potential Development Site 56

This site comprises Block 733 Lots 59*, 60, 61, 62, 63, 64, 65*, 66*, which are currently, and were historically, occupied by an auto repair facility, residential, commercial, and institutional/public facility; therefore, there is potential for petroleum contamination on the site.

Potential Development Site 57

This site comprises Block 733 Lots 8, 9, and 58, which are currently occupied by vehicle parking. Historically, this site contained an auto repair shop and petroleum storage (e.g., gasoline tanks). As a result, there is potential for petroleum contamination on the site.

Potential Development Site 58

This site comprises Block 733 Lots 23, 24, and 43*, 44*, 45*, 46*, 47, which are currently occupied by vehicle parking and residential uses. Historically, this site was occupied by a machine shop; therefore, there is potential for petroleum contamination on the site.

Potential Development Site 59

This site comprises Block 732 Lots 70 and 72*, which are currently occupied by an auto repair facility, furniture cleaning, and residential property. Historically, this site was occupied by a gas station; therefore, there is potential for petroleum contamination on the site.

Potential Development Site 60

Block 732 Lot 50 is currently vacant land. Historically, this lot was occupied by a machine shop; therefore, there is a potential for petroleum contamination on the site.

Potential Development Site 61

Block 731 Lot 22 is currently occupied by vehicle parking. Historically, this lot was also occupied by vehicle parking; therefore, there is potential for petroleum contamination on the site.

Potential Development Site 62

This site comprises Block 728 Lots 4, 67, and 69, which currently contain construction-related and residential uses. Previous use of the site included petroleum storage (e.g., fuel oil tanks); therefore, there is potential for petroleum contamination on the site.

Potential Development Site 63

Block 728 Lot 60 is currently occupied by vehicle parking. Historically, this lot was also occupied by vehicle parking; therefore, there is potential for petroleum contamination on the site.

Potential Development Site 65

Block 728 Lot 34 is currently occupied by vehicle parking. Historically, this lot was also occupied by vehicle parking and was the site of a railroad right-of-way; therefore, there is potential for petroleum and non-petroleum contamination on the site.

Potential Development Site 66

This site comprises Block 1033 Lots 25 and 41, which are currently occupied by vehicle parking. Historically, this site was occupied by coal yards and a piano factory. Due to the current and historic land uses, there is potential for petroleum and non-petroleum contamination on the site.

Potential Development Site 67

This site comprises Block 763 Lots 72 and 73, which are currently occupied by residential and commercial uses. Historically, this site was the site of an automobile rental facility; therefore, there is potential for petroleum contamination on the site.

Potential Development Site 68

This site comprises Block 763 Lots 8*, 12, 14, 17, 60, 65, and 67, which are currently occupied by vehicle parking, commercial, and warehouse uses. Historically, this site was occupied by an auto repair facility; therefore, there is potential for petroleum contamination on the site.

Potential Development Site 69

This site comprises Block 763 Lots 49, 56, and 7502*, which are currently occupied by vehicle parking, commercial, and residential uses. Historically, this site was occupied by an auto repair facility; therefore, there is potential for petroleum contamination on the site.

Potential Development Site 70

This site comprises Block 763 Lots 28 and 45-47, which are currently occupied by vehicle parking, printing and publishing, and commercial uses, and were historically occupied by a gasoline station; therefore, there is potential for petroleum contamination on the site.

Potential Development Site 71

This site comprises Block 762 Lots 1 and 2, which are currently occupied by vehicle parking. Historically, these lots contained petroleum storage (e.g., gasoline tanks); therefore, there is potential for petroleum contamination on the site.

Potential Development Site 72

Block 762 Lot 11 currently contains commercial uses. Historically, this site was occupied by a machinery repair facility; therefore, there is potential for petroleum contamination on the site.

Potential Development Site 73

Block 762 Lot 19 is adjacent to (within 400 feet) potential contamination; as a result, there is potential for petroleum and/or non-petroleum contamination on the site.

Potential Development Site 74

This site comprises Block 762 Lots 46, 48*, and 49*, which currently contain photography processing, vehicle parking, and residential uses. Historically, this site was also the site of a

photography processing facility; therefore, there is potential for petroleum and non-petroleum contamination on the site.

Potential Development Site 75

This site comprises Block 761 Lots 5, 7, and 9*, which are currently used for retail, commercial, residential, and vehicle parking uses. Historically, this site was the site of a machinery repair facility. Based on the current and historical site uses, there is potential for petroleum and non-petroleum contamination on the site.

Potential Development Site 76

Block 761 Lot 41 is adjacent to (within 400 feet) potential contamination; as a result, there is potential for petroleum and/or non-petroleum contamination on the site.

Potential Development Site 77

Block 761 Lot 28 is currently commercial office space and was historically used for medical purposes. As a result, there is potential for non-petroleum contamination on the site.

Potential Development Site 78

This site comprises Block 760 Lots 67 and 68, which currently contain vehicle parking and a construction contracting company. Historically, this site was a gasoline station; therefore, there is potential for petroleum contamination on the site.

Potential Development Site 79

Block 760 Lot 63 is adjacent to (within 400 feet) potential contamination, Block 760 Lot 16, which is currently a trucking terminal; therefore, there is potential for petroleum and/or non-petroleum contamination on the site.

Potential Development Site 80

This site comprises Block 760 Lots 58, 59, 60, 61*, 62*, which are currently used for commercial, residential, and vehicle parking purposes. Historically, this site was a piano factory; therefore, there is potential for non-petroleum contamination on the site.

Potential Development Site 81

Block 760 Lot 55 is adjacent to (within 400 feet) potential contamination, Block 760 Lot 51, which historically was a filling station; therefore, there is potential for petroleum and/or non-petroleum contamination on the site.

Potential Development Site 82

Block 760 Lot 51 is currently used for vehicle parking; historically, this site was occupied by a gasoline station and a piano factory. Based on the current and historic land uses, there is potential for petroleum and non-petroleum contamination on the site.

Potential Development Site 83

This site comprises Block 760 Lots 16, 51, and 68, Block 761 Lot 10, and Block 759 Lot 27, which were considered to be potentially contaminated as they are adjacent to (within 400 feet) potential contamination. As a result, there is potential for petroleum and/or non-petroleum contamination on the site.

Potential Development Site 84

This site comprises Block 760 Lots 16, 18, and 20, which are currently used for commercial purposes. Historically, this site was used as a trucking terminal, piano factory, and a freight yard; therefore, there is potential for petroleum and non-petroleum contamination on the site.

Potential Development Site 85

Block 760 Lot 21 is adjacent to (within 400 feet) Block 760 Lot 16, which is currently a trucking terminal, and Lot 51, which was historically a filling station; as a result, there is potential for petroleum and/or non-petroleum contamination on the site.

Potential Development Site 86

Block 759 Lot 14 is adjacent to (within 400 feet) Block 759 Lot 27, which currently has petroleum storage on-site, and Lot 72, which is occupied by a registered petroleum bulk storage facility. As a result, there is potential for petroleum and/or non-petroleum contamination on the site.

Potential Development Site 87

Block 759 Lot 61 currently contains a religious institution. Historically, this lot was used as a trucking terminal; therefore, there is potential for petroleum contamination on the site.

Potential Development Site 88

This site comprises Block 759 Lots 23, 24*, 25*, 27, 29*, 54*, and 55, which are currently used for commercial, residential, retail, and vehicle parking purposes. Historically, these lots contained petroleum storage (e.g., gasoline tanks). Based on the current and historical land uses of the site, there is potential for petroleum contamination on the site.

Potential Development Site 89

This site comprises Block 759 Lots 49, 52*, and 53*, which currently contain a trade school, commercial, and residential uses. Historically, these lots contained an electrical substation; based on the current and historical land uses, there is potential for non-petroleum contamination on the site.

Potential Development Site 90

Block 754 Lot 63 is currently used for vehicle parking; historically, this lot was used as a railroad right-of-way. As a result, there is potential for petroleum and non-petroleum contamination on the site.

Potential Development Site 91

Block 754 Lot 51 is currently occupied by the College for Technology; historically this lot was used as a railroad right-of-way. As a result, there is potential petroleum and non-petroleum contamination on the site.

Potential Development Site 92

This site comprises Block 780 Lots 15*, 17*, 19, 26*, 45*, and 60*, which are currently occupied by commercial, a religious institution (church), and vehicle parking uses. Historically, this site was used as a medical laboratories and coal storage. As a result, there is potential for non-petroleum contamination on the site.

Potential Development Site 93

This site comprises Block 779 Lots 7* and 8, which are currently used for residential and vehicle parking uses; historically, this site was used as an ironworks. As a result, there is potential non-petroleum contamination on the site.

Potential Development Site 94

This site comprises Block 779 Lots 25-28, 52*, and 53-56, which are currently used for retail, commercial, and vehicle parking uses; historically, these lots contained an auto repair facility. As a result, there is potential for petroleum contamination on the site.

Potential Development Site 95

This site comprises Block 778 Lots 7, 13, 16, 18, 66, and 70, which are currently used for commercial, retail, and vehicle parking uses; historically, these lots contained petroleum storage, a lumberyard and an ironworks. As a result, there is potential for petroleum and non-petroleum contamination on the site.

Potential Development Site 96

This site comprises Block 778 Lots 52*, 55*, and 57, which are currently used for commercial, retail, and religious institution (synagogue) uses; historically, these lots contained an auto body shop and an electrical supply store. As a result, there is potential for petroleum and non-petroleum contamination on the site.

Potential Development Site 97

This site comprises Block 778 Lots 25, 27, and 28*, which are currently used for both commercial and retail purposes. Historically, they were occupied by an auto body facility and an electrical supply manufacturer. As a result, there is potential for petroleum and non-petroleum contamination on the site.

Potential Development Site 98

This site comprises Block 778 Lots 29, 30, 31, 32*, which are currently used for commercial, retail, and vehicle parking uses; historically, these lots contained an auto body shop and an electrical supply store. As a result, there is potential for petroleum and non-petroleum contamination on the site.

Potential Development Site 99

This site comprises Block 778 Lots 33, 34, and 46*, which are currently used for commercial purposes; historically, these lots contained a paper manufacturer. As a result, there is potential for non-petroleum contamination on the site.

2. Midblock Park and Boulevard System & Underground Parking Facility

The Proposed Action includes the development of a Midblock Park and Boulevard System that would span from West 33rd Street to West 42nd Street, between Tenth and Eleventh Avenues. The development of the Midblock Park and Boulevard System would require the acquisition of properties that are currently utilized for a mix of commercial, industrial, and residential uses. Many of these sites have been identified as currently containing, or having previously contained USTs, some of which have had documented releases. This area has historically been utilized for a variety of commercial and industrial uses that could have contributed to subsurface contamination throughout the area. In addition, buildings or other structures on the properties could contain ACM, LBP and/or PCB-containing equipment. Table 14-5 summarizes the RECs identified both on-site and off-site, and also indicates whether ACM, LBP, and/or PCB-containing equipment could be present in the area of the Midblock Park and Boulevard System. The abbreviation 'LTANKS' represents Leaking Storage Tank Reports; which can be associated with either aboveground storage tanks (ASTs) or USTs.

As part of the Proposed Action, a public parking facility of approximately 950 parking spaces would be constructed beneath a portion of the Midblock Park and Boulevard System. The parking facility would have four levels with access ramps between West 34th and 35th Streets.

Prior to construction, appropriate site investigations will be conducted to more fully characterize possible contamination in the area and to identify any further action, investigation, or management that would be required if the Proposed Action were to proceed. Section H of this chapter includes preventative and management procedures that would be followed in order to minimize human contact with contaminants. In order to avoid adverse impacts to public health or to the environment, any such required action, investigation, or management would be conducted in accordance with applicable law and regulatory requirements.

TABLE 14-5
SUMMARY OF MIDBLOCK PARK AND BOULEVARD SYSTEM &
UNDERGROUND PARKING GARAGE RECS

Block/ Lot #	Street Address	On-site RECs	Off-site RECs	Above-Grade Concerns
0705/053	524-526 W. 34th St.	Paper factory	Coal yard, brass foundry, vehicle maintenance facility with USTs that reportedly discharged, leather factory, open spill cases Upgradient of the subject property.	Structure located on-site, ACM, LBP, and/or PCB-containing equipment
0705/054	528-556 W. 34th St.	Iron foundry, machine shop, documented soil and groundwater contamination of the subsurface	Coal yard, refinery including tanks, railroad freight yard and an electrical company that may have utilized PCB containing transformer oils and dielectric fluids	Structure located on-site, ACM, LBP, and/or PCB-containing equipment
0706/001	400 Eleventh Ave.	Unknown type of factory, a garage with buried tanks, a motor freight station, blacksmith and a welding factory	Factories, machine shop, and paper imaging factory, iron works, garage with 550-gallon, buried gasoline tanks, used auto parts facility, U.S. Post Office with buried gasoline tanks, motor freight stations, Federal Express Facility with petroleum storage tanks, and four nearby petroleum releases	Structure located on-site, ACM, LBP, and/or PCB-containing equipment
0708/001	438-444 Eleventh Ave.	Historical UST, historical paint shop	One adjacent LTANKS site, two upgradient LTANKS sites	Structure located on-site, ACM, LBP, and/or PCB-containing equipment
0708/017	527-531 W. 36th St.	Historical auto repair	Historical piano factory, historical charcoal storage, historical paint shop, historical automobile manufacture, two historical USTs, one adjacent LTANKS site, one upgradient LTANKS site, one downgradient LTANKS site (large volume release)	Structure located on-site, ACM, LBP, and/or PCB-containing equipment
0708/020	525 W. 36th St.	Historical auto radiator repair, historical sheet metal shop	Historical piano factory, historical paint shop, historical automobile manufacture, two historical USTs, one adjacent LTANKS site, one upgradient LTANKS site, one downgradient LTANKS site (large volume release)	Structure located on-site, ACM, LBP, and/or PCB-containing equipment
0708/046	518-520 W. 37th St.	Historical auto radiator repair, historical machinery manufacture	Historical auto radiator repair, historical laundry facility, two historical adjacent USTs, one upgradient LTANKS site, one downgradient LTANKS site (large volume release)	Structure located on-site, ACM, LBP, and/or PCB-containing equipment
0708/048	522-524 W. 37th St.	Unknown type of factory and motor freight station	Hoist machinery facility, factories, garage, garage with gasoline USTs, motor freight station, auto repair facility and sheet metal shop	Structure located on-site, ACM, LBP, and/or PCB-containing equipment
0709/017	525-539 W. 37th St.	Railroad right-of-way	Auto repair facility and five active NY Spills/LTANKS	No structure located on-site

TABLE 14-5 (CONTINUED)
SUMMARY OF MIDBLOCK PARK AND BOULEVARD SYSTEM &
UNDERGROUND PARKING GARAGE RECS

Block/ Lot #	Street Address	On-site RECs	Off-site RECs	Above-Grade Concerns
0709/023	521-523 W. 37th St.	None Identified	Unknown type of factory, trucking facility, auto repair/parking	Structure located on-site, ACM, LBP, and/or PCB- containing equipment
0709/025 & 046	513-519 W. 37th St. / 510-520 W. 38th St.	Trucking facility	Coal yard, trucking facility, auto garage and five active NY Spills/LTANKS	Structure located on-site, ACM, LBP, and/or PCB- containing equipment (parking attendant shed)
0709/052	522-524 W. 38th St.	Auto repair facility	None Identified	Structure located on-site, ACM, LBP, and/or PCB- containing equipment
0710/011	535 W. 38th St.	Coal yard and auto repair facility	Coal yard, truck and bus parking and five active NY Spills/LTANKS	Structure located on-site, ACM, LBP, and/or PCB- containing equipment
0710/015	520 W. 39th St.	Historical railroad right-of-way and auto repair facilities, NY SPILLS/LTANKS site	Auto repair facility	Structure located on-site, ACM, LBP, and/or PCB- containing equipment
0710/020	519 W. 38th St.	Coal yard, truck and auto repair facility	None Identified	Structure located on-site, ACM, LBP, and/or PCB- containing equipment
0710/022	509 W. 38th St.	Unavailable documentation regarding two fill ports apparently concreted over	Coal yard, scrap metal facility, trucking facility/garage, manufacturing facility and an auto repair facility	Structure located on-site, ACM, LBP, and/or PCB- containing equipment
1070/020	515 W. 38th St.	Railroad right-of-way and 10,000-gallon heating oil UST on-site	None Identified	Structure located on-site, ACM, LBP, and/or PCB- containing equipment
Properties Above the Parking Garage				
0706/010	539-545 W. 34th St.	Unknown type of factory, staining around fill port near the building	Garage, foundries, machine shops, charcoal storage facilities, iron warehouse, factories, garage with gasoline USTs, motor freight station, post office/Federal Express facility with gasoline and fuel oil tanks and maintenance garage	Structure located on-site, ACM, LBP, and/or PCB- containing equipment
0706/015	533-535 W. 34th St.	Unknown type of factory	Unknown type of factories, interior conduit and interior gas works, foundries, factories, machine shops, electric works, steam boiler works, furniture company with gasoline tanks, motor freight stations, post office/Federal Express facility with gasoline and fuel oil tanks	Structure located on-site, ACM, LBP, and/or PCB- containing equipment
0706/017	527-531 W. 34th St.	Unknown type of factory, interior conduit and interior gas works and furniture company with gasoline tanks	Brass foundries, boiler shops, iron shops, machine shops and garage with gasoline USTs	Structure located on-site, ACM, LBP, and/or PCB- containing equipment
0706/048	534-536 W. 35th St.	None Identified	Interior conduit and interior gas works, electrical works, unknown type of factories, motor freight station, furniture company with gasoline tanks	Structure located on-site, ACM, LBP, and/or PCB- containing equipment

**TABLE 14-5 (CONTINUED)
SUMMARY OF MIDBLOCK PARK AND BOULEVARD SYSTEM &
UNDERGROUND PARKING GARAGE RECS**

Block/ Lot #	Street Address	On-site RECs	Off-site RECs	Above-Grade Concerns
Properties Above the Parking Garage (continued)				
0706/050	538 W. 35th St.	Motor freight station	Unknown type of factory, furniture company with gasoline tanks	Structure located on-site, ACM, LBP, and/or PCB-containing equipment
0706/052	544 W. 35th St.	None Identified	Iron warehouse and motor freight station	Structure located on-site, ACM, LBP, and/or PCB-containing equipment
0706/055	550 W. 35th St.	Unknown type of factory and iron works	Boiler shop, iron warehouse, garage with gasoline USTs, motor freight station, used auto repair facility and a maintenance garage	Structure located on-site, ACM, LBP, and/or PCB-containing equipment
0707/013	537-541 W. 35th St.	Historical coal storage	Historical piano factory, historical boiler shop, historical electric company works, historical iron works, historical UST, two upgradient LTANKS sites, one downgradient LTANKS site (large volume release)	Structure located on-site, ACM, LBP, and/or PCB-containing equipment
0707/016	529-535 W. 35th St.	Historical freight station	Historical coal storage, historical boiler shop, historical electric company works, historical furniture factory, historical automobile manufacture, historical UST, one adjacent LTANKS site, one upgradient LTANKS site, one downgradient LTANKS site (large volume release)	Structure located on-site, ACM, LBP, and/or PCB-containing equipment
0707/020	517-527 W. 35th St.	UST, historical piano factory	Historical coal storage, historical paint shop, historical automobile manufacture, historical electric company works, three historical adjacent USTs, one adjacent LTANKS site, one upgradient LTANKS site, one downgradient LTANKS site (large volume release)	Structure located on-site, LBP, and/or PCB-containing equipment. No ACM – has been abated.
0707/051	524-526 W. 36th St.	Historical automobile manufacture, historical USTs, LTANKS site, evidence of borings regarding a reportedly removed UST; no corresponding documentation	Historical charcoal storage, historical piano factory, historical UST, one upgradient LTANKS site, one downgradient LTANKS site (large volume release)	Structure located on-site, ACM, LBP, and/or PCB-containing equipment
0707/054, 056	530-546 W. 36th St.	Historical automobile manufacture, historical UST	Historical charcoal storage, historical paint shop, two historical USTs, one adjacent LTANKS site, one upgradient LTANKS site, one downgradient LTANKS site (large volume release)	Structure located on-site, ACM, LBP, and/or PCB-containing equipment

3. No. 7 Subway Extension

The areas of each of the project elements associated with the No. 7 Subway Extension were evaluated for the potential presence of hazardous materials as described in Section B. The following section includes the results of this evaluation organized by the various components of the No. 7 Subway Extension.

Since most of the No. 7 Subway Extension would be constructed within consolidated bedrock located 70 feet or more below grade, the potential for adverse hazardous materials impacts is expected to be limited. The construction of the No. 7 Subway Extension would be accomplished by tunneling through bedrock with the use of a TBM, mining (e.g., drilling and blasting), and excavation (including cut-and-cover). See Chapter 23, "Construction Impacts" for additional information concerning construction methods. Potential exposure to hazardous materials increased in areas of subsurface penetration such as excavation activities associated with the TBM launch and retrieval sites (Site A and Site L), cut-and-cover construction methods, station locations, ancillary facilities, laydown areas and shaft ways. Site A, Site L, and the proposed station locations were evaluated separately from the overall alignment and are summarized separately below; the ancillary facility locations, laydown areas and shaftways (e.g., Sites J, M, N) were considered part of the general alignment.

a) Alignment

Geotechnical sampling and analysis activities along the proposed alignment have identified Serpentinite in the bedrock, which may contain deposits of naturally occurring asbestos (NOA). The Serpentinite deposits have been identified in an approximately 800-linear-foot section of the alignment from West 26th Street to West 29th Street along Eleventh Avenue at a less than 1 percent level. Although naturally occurring, asbestos can pose a potential health risk to workers when the serpentinite is pulverized by the TBM, generating airborne fibers.

In addition to the identification of serpentinite, the geotechnical alignment borings for the No. 7 Subway Extension identified petroleum-contaminated soil at six locations:

- Boring PE-30 (West 26th Street and Eleventh Avenue): Located on the sidewalk south of West 26th Street approximately 200 feet east of Eleventh Avenue. Thirty-six inches of black, stained, silty sand was encountered beneath the concrete sidewalk during hand augering. Petroleum odors were noted at the boring location.
- Boring PE-19 (West 35th Street and Eleventh Avenue): Located on the sidewalk south of West 35th Street approximately 50 feet east of Eleventh Avenue. Petroleum/chemical odors were detected from the soil collected at approximately 25 to 32 feet below grade.
- Boring GA-4 (West 28th Street and Eleventh Avenue): Located on the sidewalk north of West 28th Street approximately 50 feet east of Eleventh Avenue. Ten inches of black, stained, silty sand was encountered beneath the concrete sidewalk during hand augering from the depth of approximately three to four feet below grade.
- Boring PE-7 (West 41st Street and Tenth Avenue.): Located on the sidewalk south of West 41st Street approximately 50 feet west of Tenth Avenue. Six inches of black, stained, silty sand was encountered beneath the concrete sidewalk during drilling from the depth of approximately 10 to 12 feet below grade.

Boring SB2-4 (West 26th and Eleventh Avenue): Located on the sidewalk on the west side of Eleventh Avenue, approximately 20 feet north of 26th Street. Strong petroleum odor and staining were detected in the soil collected from 6 to 17 feet below grade.

Boring SB2-6 (West 26th Street and Eleventh Avenue): Located on the sidewalk on the west side of Eleventh Avenue, approximately 100 feet north of 26th Street. Strong petroleum odor and staining were detected in the soil collected from 6 to 11 feet below grade.

Three (3) environmental alignment borings were advanced to assess the PCSs identified by the AHMSS. Two soil borings (SB1-19 and SB1-20) were advanced near the intersection of West 41st Street and Tenth Avenue to investigate the noted impacts to soil encountered in geotechnical boring PE-7 and potential impacts from historic site usage. One soil boring (SB1-27) was advanced near the intersection of West 37th Street and Eleventh Avenue to investigate the reported release of waste oil that was identified in the AHMSS. Six soil samples, including one field duplicate sample, were collected from the soil borings and sent to a New York State Department of Health (NYSDOH) certified laboratory for analysis. The soil samples were analyzed for the Priority Pollutant List (PP+40), which includes analysis for VOCs, SVOCs, metals, PCBs, and pesticides. The soil samples were also analyzed for RCRA Characteristics.

The results of the investigation revealed the presence of elevated concentrations (exceeding the NYSDEC Technical Administrative Guidance Memorandum (TAGM 4046) Recommended Soil Cleanup Objectives (RSCOs)) of chromium and zinc in each soil sample collected from the borings. Additionally, some soil samples contained elevated concentrations of beryllium, copper, mercury, and nickel. Soil collected from boring SB1-20 revealed elevated concentrations of petroleum-related VOCs. Laboratory testing did not reveal the presence of PCBs and pesticides in the soil samples. The results of the soil testing confirmed that a petroleum release has contaminated subsurface soil near the intersection of West 41st Street and Tenth Avenue, but indicates that the extent of contamination is limited. The other results are consistent with the presence of historic urban fill, which is typical for sites located in New York City. This type of fill is not uncommon and is not likely attributed to any of the areas of environmental concern identified in the AHMSS.

Based on the Phase II ESA, there is minimal risk of exposure to contaminated soil for on-site receptors along the planned alignment. The contamination identified no unique environmental concerns and requires no specific precautions beyond the typical measures employed during construction in New York City, and described within Section H, “Summary of Management Measures”.

b) Site A – TBM Launch Site

Site A includes two properties, 220 Eleventh Avenue and 554 West 26th Street, and is currently used as a commercial parking lot. As a result of the Phase I ESA of the site, RECs were identified based on the review of historical maps (e.g., Sanborn Maps), regulatory agency databases, and the site inspection.

Historical RECs were identified both on the site and on adjoining properties based on a review of Sanborn Maps, and included a foundry, a junkyard, and a building materials storage yard. Off-site historical RECs include iron foundries, oil storage facilities, and a charcoal works.

RECs identified based on the regulatory agency databases included six active New York Spills/Leaking Underground Storage Tanks (NY Spills/LTANKS) cases identified within a half-mile radius of Site A; four of these facilities were also listed on either the Resource Conservation and Recovery Information System Generators/Transporters (RCRIS Gen/Trans) database or the Petroleum Bulk Storage (PBS)/Chemical Bulk Storage (CBS) database. The remaining two NY Spills/LTANKS RECs were not listed on either the RCRIS Gen/Trans or the PBS/CBS databases.

During the site inspection, the property owner was interviewed and indicated that a petroleum UST was removed from the property by the previous owner, approximately twenty years ago. The owner did not know the condition of the UST prior to its removal. No closure documentation was available and no evidence of registered tanks or spills was identified at the property in the database review.

Lack of closure documentation could indicate that the tank was not closed in accordance with NYSDEC regulations and, therefore, the condition of the subsurface in the area of the tank cannot be accurately assessed. Therefore, the area of the former UST is considered an REC.

Petroleum-contaminated soils were identified beneath the sidewalk on the northern border of the property during the advancement of geotechnical alignment boring PE-30. This is considered an open spill case by the NYSDEC. The presence of petroleum-contaminated soils beneath the sidewalk adjacent to the property is considered an REC.

As a result of these findings, a program of subsurface soil and groundwater sampling and laboratory analysis was performed. Five soil borings were advanced; five soil and one groundwater sample were collected and sent to a NYSDOH-certified laboratory for analysis. The soil samples were analyzed for VOCs, SVOCs, PCBs, metals, and RCRA Characteristics. The groundwater sample was analyzed for VOCs, SVOC, PCBs, metals, and DEP sewer discharge parameters.

The results of the investigation revealed that Site A is underlain by fill materials that contain elevated concentrations (exceeding the NYSDEC TAGM 4046RSCOs) of metals (beryllium, chromium, copper, mercury, nickel, selenium, and zinc). Elevated concentrations of two SVOCs (benzo(a)anthracene and chrysene) were also detected in one sample, but not in samples collected elsewhere at the site. These contaminants are commonly found in urban fill materials and likely do not reflect on-site releases from historic or current usage. Minimal concentrations of the VOCs acetone and methylene chloride were detected in the soil samples; however, the concentrations detected did not exceed TAGM RSCOs. PCBs, pesticides, herbicides, TCLP VOCs, and TCLP SVOCs were not detected in the soil samples. TCLP chromium was detected in one sample; however, its concentration did not exceed RCRA hazardous waste characteristics. TCLP chromium was the only TCLP metal detected. Soil samples did not exhibit characteristics of hazardous waste. The results of the sampling indicate that the petroleum-contaminated soils noted beneath the sidewalk, adjacent to the property, have not had a widespread, if any, impact on Site A, as petroleum-type contaminants were absent from soil and groundwater samples.

Results of the groundwater sampling revealed that one SVOC (Chrysene) was detected at a concentration that exceeds the NYSDEC Technical and Operational Guidance Series (TOGS) standard. Laboratory results also indicated that metals were present in the groundwater sample at concentrations that exceed the TAGM TOGS criteria. The concentrations of Chrysene and metals are expected to be the result of sediment in the sample and not groundwater conditions, as the sample was collected from a temporary well point, which caused sediment to be entrained in the sample. No VOCs or PCBs were present in concentrations that exceeded the NYSDEC TOGS criteria. Additionally, parameters regulated by DEP Limitations for Effluent to Sewers were not exceeded. Based on the results of the sampling, groundwater would not require pretreatment, except to remove sediment, prior to discharge.

Based on the Phase II ESA, there is minimal risk of exposure to contaminated soil for on-site receptors at Site A. The contamination identified no unique environmental concerns and requires no specific precautions beyond the typical measures employed during construction in New York City, and described within Section H, "Summary of Management Measures".

c) Site L – TBM Retrieval Site

Site L is located at 560 Tenth Avenue. As a result of the Phase I ESA of the Site, RECs were identified based on the review of historical maps (e.g., Sanborn Maps) and regulatory agency databases; the site inspection did not reveal any RECs.

The review of Sanborn Maps identified historical uses on the property and adjoining properties that are considered RECs; these include an ironworks, paint shop, coal yard and bus terminal. Off-site historical RECs include machine shop, paint and print shops, and a gas station.

RECs identified based on the regulatory agency databases included five active NY Spills/LTANK sites identified within 400 feet of the site and the identification of the site on the emergency response notification system (ERNS) and petroleum bulk storage (PBS) regulatory databases. A survey of the on-site buildings revealed that asbestos is present in building materials.

As a result of the findings of the Phase I ESA, a work plan for a Phase II ESA was developed to collect samples of subsurface soil and groundwater. Twelve (12) soil borings were advanced in areas of potential environmental concern and three (3) temporary well points were installed. Twenty-four (24) soil and three (3) groundwater samples were collected and sent to a NYSDOH-certified laboratory for analysis. Fifteen (15) of the soil samples were analyzed for VOCs, SVOCs, Target Analyte List (TAL) metals, PCBs, and RCRA Characteristics, and nine (9) soil samples, collected from areas of suspected petroleum contamination, were analyzed for petroleum-related VOCs and SVOCs. The groundwater samples were analyzed for VOCs, SVOC, TAL metals, PCBs, and DEP sewer discharge parameters.

The results of the Phase II ESA revealed that measurable concentrations of VOCs, pesticides, and PCBs are not present in site soils. SVOCs were detected in nine soil samples; however, none of the samples exceeded NYSDEC's TAGM RSCO for total SVOCs. Metals were detected in all the soil samples at concentrations above the NYSDEC TAGM RSCO. All groundwater samples exceeded TOGS for metals and one sample exceeded the TOGS for SVOCs. With the exception of laboratory contaminant detections in one sample, none of the groundwater samples exceeded the TOGS criteria. Appendix O.2 presents laboratory results for soil and groundwater samples. The soil and groundwater results are consistent with the presence of historic urban fill, which is typical for sites located in New York City. This type of fill is not uncommon and is not likely attributed to any of the areas of environmental concern identified in the Phase I ESA.

Based on the findings Phase II ESA, there is minimal risk of exposure to contaminated soil and groundwater for on-site receptors at Site L. The contamination identified raises no unique environmental concerns and requires no specific precautions beyond the typical measures employed during construction in New York City, and described within Section H, "Summary of Management Measures".

d) Intermediate Station (West 41st Street between Tenth and Dyer Avenues)

During the advancement of geotechnical soil borings, petroleum-contaminated soil was encountered at boring location PE-7, which is located on the south side of West 41st Street in the sidewalk. These findings are discussed further under Alignment, above. This is considered an open spill case by the NYSDEC. The presence of petroleum-contaminated soils beneath the sidewalk is considered an REC.

e) Terminal Station (Eleventh Avenue between West 33rd and West 35th Streets)

During the advancement of geotechnical soil borings chemical/petroleum odors were detected at boring location PE-19, which is located on the south side of West 35th Street in the sidewalk. These findings are discussed further under Proposed Alignment. This is considered an open spill case by the NYSDEC. The presence of chemical/petroleum-contaminated soils beneath the sidewalk is considered an REC.

f) Corona Yard

The area between the Van Wyck Expressway and Willets Point Boulevard and a portion extending southward across Roosevelt Avenue is the portion of Corona Yard that is involved in the Proposed Action. This area is the northeastern portion of Corona Yard. Currently this portion of the yard is covered with phragmites, an aquatic, wetland-invasive plant, and a wetland area is adjacent to the east of the yard. According to historical data of this portion of the yard, it has been constructed on fill

material. Geotechnical soil borings advanced at Corona Yard indicate that the fill is underlain by four strata: organic clay; sand and gravel; varved silt and clay; and, glacial deposits, which overlie bedrock.

Corona Yard and neighboring sites, especially those to the west (upgradient), have been used for railroad and other industrial or heavy commercial purposes since the early 1900s (e.g., automotive repair and wreckage facilities, filling stations, and automobile scrap yards). Contaminants typically associated with such land uses include, but are not limited to, VOCs, SVOCs, and metals. Since the yard was constructed on fill material, it is likely to contain contaminants such as metals and SVOCs. Additionally, there are documented open NY Spills/LTANKS cases in the vicinity of the yard, which may have contaminated the subsurface soils and/or groundwater of the yard. The NYSDEC has issued an administrative notice to the Long Island Rail Road (LIRR) for contamination at the site which is alleged to be the result of petroleum spills. LIRR site investigations have confirmed the presence of “hot spots” of VOCs at the site. Additionally, the LIRR’s testing has revealed that elevated concentrations of SVOCs are present in the fill material historically used to grade the site. Discussions between the NYSDEC and LIRR are ongoing to determine both the appropriate management for this site, and to address the likelihood that contamination found at this site is attributable to sources on neighboring sites.

Section H of this chapter includes preventative and management procedures that would be followed in order to minimize human contact with contaminants. In order to avoid adverse impacts to public health or to the environment, any such required action and/or management would be conducted in accordance with applicable law, and any regulatory requirements of the NYSDEC or DOL.

4. Convention Center Expansion Parcels

The Convention Center Expansion would require the acquisition of certain lots on Block 685 and all of Block 1088, both of which are located between Eleventh and Twelfth Avenues, between West 39th and 40th Streets and between West 40th and West 41st Streets, respectively. Block 1088 is the current location of the Quill Bus Depot, which would be relocated as a result of the Convention Center Expansion. Additionally, the expansion of the Convention Center would require the acquisition of the eastern portion of Block 1089 for the construction of a hotel. Block 1089 is bound by West 41st and 42nd Streets and Eleventh and Twelfth Avenues. The Convention Center Expansion also includes an area for expanded truck marshalling capabilities. The truck Marshalling Yard would be located directly south of the existing Convention Center, between 33rd and 34th Streets and Eleventh and Twelfth Avenues. The truck Marshalling Yard would be dedicated to servicing the trucks associated with operations at the expanded Convention Center. This yard would be connected to the Convention Center’s loading docks via an unused, below-grade rail right-of-way extending from West 33rd to West 41st Streets between Tenth and Eleventh Avenues. The right-of-way is to be used as a truck marshalling route from the marshalling yard into the Convention Center’s loading docks entry on 41st Street. Additionally, the Convention Center Expansion would encompass certain intervening streets, specifically West 39th, West 40th, and West 41st Streets, and parts of Eleventh Avenue.

a) Existing Convention Center

Through review of regulatory databases, government records, other documents and historical land use maps, the Phase I ESA indicated that from the late 1800s through the 1900s, the area currently used as the Convention Center (between 34th and 38th Streets and Eleventh and Twelfth Avenues) was occupied by railroad tracks and yards for rail companies such as New York Central & Hudson River Railroad Company; West Shore Lines; New York, Ontario & Western Railroad Company; and Pennsylvania Railroad Corporation. The Phase I ESA concluded that there is likely subsurface

contamination present beneath the existing Convention Center. Additionally, ACM, LBP, and PCB-containing equipment could be present within the Convention Center.

As a result of the findings of the Phase I ESA, a work plan for a Phase II ESA was developed to collect samples of subsurface soil and groundwater. Specifically, seven (7) soil borings were advanced and four (4) monitoring wells were installed at this site. Fourteen (14) soil samples, three (3) duplicates and (4) four groundwater samples were collected and sent to a NYSDOH-certified laboratory for analysis. Based on the analytical results, 10 soil samples showed SVOC exceedances and 15 soil samples showed metals exceedances above NYSDEC TAGM RSCOs. None of the samples contained VOCs or PCBs. All of the groundwater samples exceeded the recommended levels for metals as set forth in the NYSDEC TOGS. Only one SVOC, bis(2-ethylhexyl)phthalate, was detected above TOGS in two groundwater samples. No VOCs or PCBs were detected above TOGS in any of the wells. Appendix O.2 presents laboratory results for soil and groundwater samples. These results are consistent with the presence of historic urban fill, which is typical for sites located in New York City. This type of fill is not uncommon and is not likely attributed to any of the areas of environmental concern identified in the Phase I ESA.

Based on the Phase II ESA, there is minimal risk of exposure to contaminated soil and groundwater for on-site receptors at the existing Convention Center. The contamination identified raises no unique environmental concerns and requires no specific precautions beyond the typical measures employed during construction in New York City, and described within Section H, “Summary of Management Measures”.

b) Block 685

The Phase I ESA review of the Sanborn Maps indicated that the Pennsylvania Rail Yard (1899 to 1976) and wool pulling stores (1911 to 1930) occupied the area immediately to the south of Block 685; and by 1976, Yale Express Systems occupied the area north of 39th Street at 460 Twelfth Avenue. The Sanborn Maps indicate that the western two-thirds of Block 685 has been utilized as a shipping terminal (trucking and freight storage) since 1950 by US Packing and Shipping and the Terminal Freight Cooperative, and then by the Yale Express Company to date. The Sanborn Maps also indicate that the Yale buildings were constructed in approximately 1963 and encompass approximately three quarters of the block. The three Yale buildings are two, four, and eight stories high. Fourteen USTs were in operation at the buildings during that time period and, according to the Phase I ESA, groundwater contamination was identified at this site. The fourteen USTs were reportedly removed from the site in 1996, but the NYSDEC determined in 1999 that the site had not been sufficiently managed following the removal of those tanks. The Phase I ESA did not identify any documentation of a final cleanup of this parcel following the UST removal in 1996. Two rounds of groundwater monitoring have been conducted at the site, which demonstrated that petroleum contamination found in groundwater at the parcel was at low levels and was decreasing.

The groundwater contamination reported in 1999 is the likely result of petroleum discharges from one or more of the 14 diesel or leaded gasoline USTs and/or as a result of discharges from the two 250-gallon kerosene ASTs that are currently located on the parcel.

Based on the historic use of the site (e.g., rail yard, presence of USTs), its proximity to the Quill Bus Depot to the north, and the reported petroleum spill and documented presence of groundwater contamination, subsurface contaminants that could be present include, but are not limited to, VOCs, SVOCs (including PAHs), PCBs, herbicides, metals, and creosote from railroad ties.

As a result of the findings of the Phase I ESA, a work plan for a Phase II ESA was developed to collect samples of subsurface soil and groundwater. Specifically, eleven (11) soil borings were advanced in areas of potential environmental concern, and five (5) monitoring wells were installed. Twenty (20) soil samples, one (1) duplicate and six (6) groundwater samples were collected. No

VOCs or PCBs were detected in soil samples. SVOCs were detected in 17 soil samples, but none of the samples exceeded NYSDEC's TAGM RSCO for total SVOCs. Metals were detected in all the soil samples at levels above NYSDEC TAGM RSCOs. All water samples exceeded TOGS for metals and one sample exceeded TOGS for SVOCs. With the exception of very slight benzene exceedance at one monitoring well, no other exceedances were detected in any of the wells. Appendix O.2 presents laboratory results for soil and groundwater samples. The benzene contamination identified is likely attributable to the petroleum USTs that were formerly present on this parcel. This confirms the groundwater contamination identified in 1999 and reported in the Phase I ESA, but indicates that the extent of the contamination is limited. The other results are consistent with the presence of historic urban fill, which is typical for sites located in New York City. This type of fill is not uncommon and is not likely attributed to any of the areas of environmental concern identified in the Phase I ESA.

Based on the Phase II ESA, there is minimal risk of exposure to contaminated soil and groundwater for on-site receptors at Block 685. The contamination identified raises no unique environmental concerns and requires no specific precautions beyond the typical measures employed during construction in New York City, and described within at Section H, "Summary of Management Measures".

c) Existing Quill Bus Depot

The Convention Center Expansion would require the deconstruction and reconstruction of the existing Quill Bus Depot. The Phase I ESA review of Sanborn Maps indicated this site was formerly occupied by the Western Stock Yard Hog House, meat packing plant, a livestock holding yard, a leather tanning company, coal houses, and an iron yard until the 1950s. In 1968, the site was developed as a bus depot and fueling facility for the Greyhound Bus Company (Greyhound); in 1992 MTA NYCT acquired the property. The site continues to be used as a bus depot and fueling facility for bus repair, maintenance, and cleaning operations.

A review of regulatory databases and prior environmental reports concerning the site reveal that, in 1987, a diesel fuel release was discovered on the southwest portion of the property. The spill was apparently the result of a broken remote fill line. Beginning in 1989, several investigations were performed with regard to the various petroleum product storage systems located at the facility. Those reports document the discovery of separate-phase product, discovered beneath the Quill Bus Depot, that occurred as a result of the aforementioned diesel fuel release. The groundwater remedial effort set forth to address the diesel fuel release consisted of a pump-and-treat-type system that included the use of a vacuum truck to extract the product from the subsurface (Vault A) according to investigative reports. As of February 2004, approximately 424 gallons of petroleum product had been recovered from the property. This remedial effort is ongoing pursuant to the terms of a Consent Order between the NYSDEC and MTA NYCT regarding the management of this petroleum spill. The NYSDEC spill number assigned to the facility remains open.

The diesel fuel release occurred from a UST, which was part of a UST system installed along the west end of the property (along Twelfth Avenue near 41st Street). The system included a 5,000-gallon antifreeze tank, a 15,000-gallon motor oil tank, an 18,000-gallon diesel fuel tank, a 17,000-gallon diesel fuel tank and a 16,000-gallon diesel fuel tank. All tanks were contained within a concrete vault, which is known as "Vault A." In 1996 and early 1997, MTA NYCT rehabilitated the facility and replaced these diesel tanks with new systems. As a result of the aforementioned diesel fuel release, 53 soil borings were collected and six groundwater monitoring wells were installed at the site to determine the extent of contamination in the area of the UST system.

As noted, a number of subsurface investigations have been performed both in connection with the contamination in the vicinity of Vault A, and to investigate the condition of the site of other tank systems (i.e., Vaults B and D). In 1989, ten soil borings in the vicinity of Vault A were installed, two of which were converted to groundwater monitoring wells. In 1990, an investigation was conducted

in the northeastern portion of the site, which contained heating oil tanks; this area is known as “Vault B.” The investigation concluded that fuel oil was leaking from fill lines. During a supplemental investigation in 1993, a dielectric fluid line was punctured during the drilling of a monitoring well on Twelfth Avenue. As a result, an unknown amount of dielectric fluid leaked into the subsurface.

In 1993, an additional 30 borings were installed in the vicinity of both Vaults A and B; one boring was installed in the center of the site, in an area known as “Vault D.” The investigation indicated that visible free product was present on the groundwater surface in the vicinity of Vault A. Analytical results indicated the presence of VOCs, SVOCs, PCBs, and ethylene glycol (antifreeze) contamination in soils and groundwater.

In 1994, a supplemental investigation was performed to, among other things, evaluate the nature and extent of contamination prior to the installation of new UST systems. Three additional groundwater monitoring wells were installed at this time. This supplemental investigation detected floating petroleum product in four of the monitoring wells, and soil analytical results confirmed the presence of VOC, SVOC, and ethylene glycol contamination at the site. Minor PCB contamination in the vicinity of the punctured dielectric fluid line was also detected.

In 2000, further site investigation was performed in accordance with the procedures and protocol presented in a NYSDEC-approved Generic Site Investigation Protocol prepared by MTA NYCT. As part of that investigation, 53 soil borings and six groundwater monitoring wells were installed at the site to determine the extent of contamination in the area of the UST system.

Groundwater sampling results from one monitoring well located on the northern portion of the site (across the street from the location of the former MGP facility) revealed the presence of dissolved-phase groundwater contamination. This could be due to activities at the former MGP facility.

The numerous subsurface investigations conducted at the site confirm the presence of elevated concentrations (exceeding NYSDEC Spill Technology and Remediation Series (STARS) guidance values) of petroleum-related VOCs and SVOCs in both the soil and groundwater beneath the Quill Bus Depot. As noted, elevated levels of ethylene glycol and PCBs were also detected in two soil samples, and groundwater monitoring results also confirm the existence of off-site groundwater contamination, including dissolved phase contamination, which may be due to activities at the former MGP facility located to the north. Groundwater sampling results indicated the presence of dissolved phase VOCs and SVOCs in five of the six monitoring wells installed at the site, elevated levels (exceeding the NYSDEC TOGS guidance values) of ethylene glycol in three of the wells, and separate phase product in five of the wells; product thickness ranged from 0.2 to 4 feet. As a result, a NYSDEC-approved remedial plan is currently being implemented in order to recover the separate-phase product identified beneath the property. This remedial action plan is still active, and on March 31, 2004, the implementation of bioremediation was agreed upon by MTA NYCT and the NYSDEC in order to enhance product recovery at the property, consisting of residual product in one monitoring well and sheen or near sheen levels in four of the wells. The bioremediation method chosen is one that has the ability to reduce the adhesion of product to soil particles, therefore enabling further recovery through groundwater extraction.

As a result of the environmental investigations performed on the property, the extent of subsurface contamination is known and documented and no further subsurface intrusive investigation is planned.

Additionally, ACM, LBP, and PCB-containing equipment are likely to be found throughout the existing building. Section H of this chapter includes preventative and management procedures that would be followed in order to minimize human contact with the aforementioned contaminants during the deconstruction of the Quill Bus Depot and the subsequent construction activity at this site.

d) Site of Relocated Quill Bus Depot

The Quill Bus Depot is proposed for relocation between West 30th and West 31st Streets and between Tenth and Twelfth Avenues; (the southern portion of Block 676 and 702).

The southern portion of Caemmerer Yard is part of the proposed location for the Quill Bus Depot. The eastern portion of this site, between Tenth and Eleventh Avenues, is the location of the former Metal Purchasing Co. Inc. Based on a review of historical documents, the building formerly housing the plant (presently vacant) was constructed sometime between 1930 and 1950. Operations in this building included sheet metal cutting and coating (varnishing).

As a result of the findings of the Phase I ESA, a work plan for a Phase II ESA was developed to collect samples of subsurface soil and groundwater. Specifically, thirty-one (31) soil borings were advanced in areas of potential environmental concern, and eleven (11) monitoring wells were installed. A number of these soil borings and monitoring wells were also utilized to characterize Caemmerer Yard, discussed below. One hundred and twenty-six (126) soil and eleven (11) groundwater samples were collected. No pesticides, herbicides or PCBs were detected in soil samples. SVOC and metals were detected in the soil samples at concentrations that exceed the TAGM RSCOs. Results of the statistical analysis reveal the mean concentrations of SVOCs benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, and dibenzo(a,h)anthracene exceed TAGM RSCOs. The mean concentrations of copper, mercury, nickel, and zinc exceed the TAGM RSCOs and naturally-occurring background concentrations. With the exception of benzene in one soil sample, VOC concentrations did not exceed TAGM RSCOs levels. Groundwater samples did not contain VOCs, pesticides, herbicides or PCB concentrations above the TOGS values. Groundwater samples revealed concentrations of SVOCs and metals that exceeded the TOGS criteria; however, the types and levels detected are commonly the result of contaminants found in historic urban fill. Appendix O.2 presents laboratory results for soil and groundwater samples. This type of fill is not uncommon and is not likely attributed to any of the areas of environmental concern identified in the Phase I ESA.

Based on the Phase II ESA, there is minimal risk of exposure to contaminated soil and groundwater for on-site receptors in the area proposed for the relocated Quill Bus Depot. The contamination identified raises no unique environmental concerns and requires no specific precautions beyond the typical measures employed during construction in New York City, and described within Section H, "Summary of Management Measures".

e) Hotel Site

The proposed Convention Center Hotel site is located on the eastern half of Block 1089, on Eleventh Avenue between West 41st and 42nd Streets, which is currently a parking lot. Review of available Con Edison documents and Sanborn Maps indicated that this site was formerly occupied by the MGP operated by the Consolidated Gas Company (now Con Edison) from 1861 to the early 1920s. Based on the Sanborn maps, the MGP facility included coal storage areas, gas manufacturing and purification operations, and gas holders, which are large tanks with foundations that extend up to 20 feet below ground. The gas holders were located on the eastern portion of the parcel and the gas manufacturing and purification operations were located on the western portion of the property. The MGP extended to the former shoreline of the Hudson River. From the late 1920s until the early 1980s, the site was used as a freight depot for the Railway Express Agency, with a private garage. This site was also formerly occupied by a gasoline service station with five 550-gallon USTs, the Railway Express Agency, and parking for Greyhound Bus Lines. The site is currently used as a parking lot.

The types of contamination that are generally associated with former MGP facilities include VOCs, SVOCs (including PAHs), metals, and cyanide, while the types of contamination usually associated

with rail operations are generally limited to SVOCs and metals. Petroleum products related to the former gasoline station could also have contaminated the site. Block 1089 is the subject of a 2001 Voluntary Cleanup Agreement (VCA) between Con Edison and the NYSDEC. Con Edison, under the VCA and with NYSDEC oversight, has recently completed a comprehensive soil, soil gas, and groundwater investigation of the site that confirms the presence of subsurface contamination from historical uses at the site. Significant findings include:

- Soil gas results indicated no concern for the health of residents from underlying soil and groundwater contaminants;
- MGP gas holder structures are present within approximately 6 feet of the surface in the eastern portion of the site;
- MGP wastes are present at depths from approximately 10 feet to 25 feet below ground surface;
- Groundwater throughout the eastern portion Block 1089 is contaminated with MGP wastes and from gasoline spills originating at the Exxon/Mobil station north of West 42nd Street; and
- Groundwater flow direction is from north to south and has the potential to migrate to West 41st Street and Block 1088 (one block immediately south of 1089).

In April 2004, Con Edison submitted a Site Characterization Report to the NYSDEC that summarized the findings discussed above. The current owner of the parcel has advised that Con Edison is also currently developing a Remedial Action Work Plan to be implemented in conjunction with the proposed construction of a residential building on the eastern portion of Parcel 1. This Remedial Action Work Plan is expected to address the RECs identified in the Phase I ESA, and thus avoid the potential for significant adverse impacts from the hazardous materials located at this parcel.

f) Truck Marshalling Route (from West 33rd to 41st Streets)

The Convention Center expansion also contemplates the use of a below-grade unused rail right-of-way that extends from West 33rd to West 41st Streets between Tenth and Eleventh Avenues as a truck marshalling route from the Marshalling Yard into the Convention Center loading docks entry on 41st Street. The right-of-way crosses beneath Eleventh Avenue at West 34th Street through West 41st Street, and follows the Amtrak railroad tracks between West 36th and West 39th Streets. At West 40th Street, the right-of-way separates from the Amtrak railroad and turns west, under the current Mercedes-Benz showroom.

Based on a historical aerial photo, the Phase I ESA for the right-of-way concluded that it has been present since 1940. It is not shown on available Sanborn Maps. A review of regulatory databases, government records, and historical land use maps indicate that historic use of the properties adjacent to and above the right-of-way includes coal yards, gasoline stations, repair shops, store houses, an iron yard, a steam laundry, a piano factory, a bottling works machine shops, furniture factories, and residential properties. Current use of the properties include a public open space, an auto dealership, access roads for the Lincoln Tunnel, auto repair and service facilities, a telephone switching facility, and parking lots.

Railroad tracks run through the parcel from West 34th to West 40th Streets. The historical use of this right-of-way as a railway indicates the potential that the tunnel could contain contaminants that require management prior to its use as a truck marshalling route. Contaminants typically associated with rail tracks, rail use, and freight hauling include, but are not limited to, VOCs, SVOCs (including PAHs), herbicides, PCBs, metals, and creosote from railroad ties.

As a result of the findings of the Phase I ESA, a work plan for a Phase II ESA was developed to collect samples of subsurface soil and groundwater. Specifically, five (5) soil borings were advanced at areas of concern on this site. Eight (8) soil samples and one duplicate were collected and sent to a

NYSDOH-certified laboratory for analysis. Bedrock depth ranged from 1.3 to 2.6 feet at the soil borings locations, from West 36th to West 40th Streets. No VOCs or PCBs were detected in any of the samples. All samples exceeded NYSDEC TAGM RSCOs for SVOCs, but none of the samples exceeded NYSDEC's TAGM RSCOs for total SVOCs. All samples exceeded NYSDEC TAGM RSCOs for metals. Appendix O.2 presents laboratory results for soil and groundwater samples. These results are consistent with what is typically found on active railroad tracks.

Based on the findings and conclusions of the Phase II ESA, there is minimal risk of exposure to contaminated soil for on-site receptors along the Truck Marshalling Route. The contamination identified raises no unique environmental concerns and requires no specific precautions beyond the typical measures employed during construction in New York City, and described within Section H, "Summary of Management Measures".

g) Convention Center Marshalling Yard (between West 33rd and 34th Streets)

The proposed Convention Center Marshalling Yard parcel is located directly south of the Convention Center, between Eleventh and Twelfth Avenues. A review of Sanborn Maps and historic aerial photos indicates that in the late 1800s through at least 1930, and possibly up to 1950, this parcel was occupied by railroad tracks and a freight station for the New York Central & Hudson River Railroad Company and New York Central Lines. This parcel also included a distillery, the New York Hay Exchange, warehouses for hay, lumber, grain and flour, and machine shops. It is currently (since 1985) used by the Convention Center as a parking lot for storage of trailers and automobiles associated with commercial Convention Center activities. The parcel currently consists of a trailer storage area and car parking area with an asphalt base. Remnants of railroad tracks are present on the north and west sides of the property. One railroad track (the High Line) still runs across the west and north sides of the property, but is no longer in use.

The historic presence of railroad tracks on this parcel and the present use for trailer storage and parking indicate the potential that hazardous materials could exist in the subsurface soil on this parcel. Contaminants typically associated with railroad tracks and rail yard uses include, but are not limited to, VOCs, SVOCs, herbicides, PCBs, metals, and creosote from railroad ties. In addition, government records also identified two gasoline storage tanks on the west side of this parcel in 1976. There is no record regarding their closure and/or removal.

As a result of the findings of the Phase I ESA, a work plan for a Phase II ESA was developed to collect samples of subsurface soil and groundwater. Specifically, six (6) soil borings were advanced, and four (4) monitoring wells were installed at areas of concern on this site. Fourteen (14) soil samples and four (4) groundwater samples were collected and sent to a NYSDOH-certified laboratory for analysis. No VOCs or PCBs were detected in any of the samples, except for one sample that contained acetone, which is likely attributed to field or laboratory-related contamination. Nine samples exceeded NYSDEC TAGM RSCOs for SVOCs, but none of the samples exceeded NYSDEC's TAGM RSCO for total SVOCs. Eleven (11) samples exceeded NYSDEC TAGM RSCOs for metals. Groundwater samples exceeded TOGS for metals. No other exceedances were detected. Appendix O.2 presents laboratory results for soil and groundwater samples. These results are consistent with the presence of historic urban fill, which is typical for sites located in New York City. This type of fill is not uncommon and is not likely attributed to any of the areas of environmental concern identified in the Phase I ESA.

Based on the findings and conclusions of the Phase II ESA, there is minimal risk of exposure to contaminated soil and groundwater for on-site receptors at the existing Convention Center Marshalling Yard. The contamination identified raises no unique environmental concerns and requires no specific precautions beyond the typical measures employed during construction in New York City, and described within Section H, "Summary of Management Measures".

h) Intervening Streets - West 34th, West 39th, West 40th, and West 41st Streets, and parts of Eleventh Avenue

In addition to the parcels previously discussed, the Convention Center expansion would encompass certain streets that fall within the Convention Center expansion site, specifically West 33rd, West 39th, West 40th, and West 41st Streets, and parts of Eleventh Avenue. These streets could require subsurface modification to renovate or add utilities, or to renovate tunnels. Because of historic railroad uses, freight operations, manufacturing of gas, storage of hazardous materials, and documented spills on and around these streets, the subsurface soil and groundwater underlying the streets may be contaminated. Contaminants typically associated with these historic uses include, but are not limited to, VOCs, SVOCs (including PAHs), herbicides, PCBs, and metals.

As a result of the findings of the Phase I ESA, a work plan for a Phase II ESA was developed to collect samples of subsurface soil and groundwater. Specifically, eight (8) soil borings were advanced and six (6) monitoring wells were installed at areas of concern on this site on the sidewalks of Eleventh and Twelfth Avenues. Six (6) soil borings were advanced and four (4) monitoring wells were installed within the property lines along the intervening streets (West 34th, West 39th and West 40th Streets). The locations of the soil borings and monitoring wells were selected to cover the streets, avenues and associated parcels.

Eighteen (18) soil samples, two duplicates, and twelve (12) groundwater samples were collected and sent to a NYSDOH-certified laboratory for analysis. No VOCs or PCBs were detected in any of the samples, except for acetone in one sample along Twelfth Avenue, which is likely attributed to field or laboratory-related contamination. Thirteen (13) samples exceeded NYSDEC TAGM RSCOs for SVOCs, but none of the samples exceeded NYSDEC's TAGM RSCO for total SVOCs. Fifteen (15) samples exceeded NYSDEC TAGM RSCOs for metals. No VOCs or PCBs were detected above TOGS in any of the samples, except for benzene in one well along West 39th Street. As discussed in the previous sections, the benzene contamination identified is likely attributable to the petroleum USTs that were formerly present on this parcel. SVOCs were detected above TOGS in only one sample along West 39th Street. Groundwater samples exceeded TOGS for metals in all the wells. Appendix O.2 presents laboratory results for soil and groundwater samples. These results are consistent with the presence of historic urban fill, which is typical for sites located in New York City. This type of fill is not uncommon and is not likely attributed to any of the areas of environmental concern identified in the Phase I ESA.

Based on the Phase II ESA, there is minimal risk of exposure to contaminated soil and groundwater for on-site receptors in the intervening streets of West 34th, West 39th, West 40th, and West 41st Streets and parts of Eleventh Avenue. The contamination identified, raises no unique environmental concerns and requires no specific precautions beyond the typical measures employed during construction in New York City, and described within Section H, "Summary of Management Measures".

5. Caemmerer Yard

Caemmerer Yard has been used for railroad purposes since at least the late 1890s, and the surrounding area has a history of industrial use. The history of Caemmerer Yard was assessed through the review of aerial photographs and Sanborn Maps. Caemmerer Yard is comprised of the area bounded to the north by West 33rd Street, to the south by West 30th Street, to the west by Twelfth Avenue, and to the east by Tenth Avenue; the rails within Caemmerer Yard end at 31st Street. Aerial photographs were reviewed for the following years: 1940; 1951; 1961; 1969; 1974; 1976; 1988; and 2002. Sanborn Maps were reviewed for the following years: 1890, 1899; 1911; 1930; 1950; 1976; 1979; 1980; 1982; 1992; 1993; 1994; 1995; and 1996.

For purposes of historical review, Caemmerer Yard was divided into two portions, Caemmerer Yard West and Caemmerer Yard East, with Eleventh Avenue between the two portions. The proposed Multi-Use Facility would be constructed over the western portion of Caemmerer Yard on Block 676, between Eleventh and Twelfth Avenues, West 30th and 33rd Streets.

The eastern portion of Caemmerer Yard, Blocks 702 and 704, between Tenth and Eleventh Avenues, West 30th Street and 33rd Streets, would be developed with commercial, residential, cultural, and open spaces pursuant to the proposed rezoning.

a) Freight Yard

Based on a review of the Sanborn Maps and aerial photographs, Caemmerer Yard was used as a freight yard for the offloading of materials from rail cars to local transportation, by the New York Central Railroad Company from 1890 through the early 1980s, at which time it was converted to a storage yard for Long Island Rail Road (LIRR) trains.

Thirty-seven tracks were identified running in the east-west direction through the Caemmerer Yard from 1890 to 1976. Tracks in Caemmerer Yard West were generally identified as running along West 33rd Street, between West 33rd Street and West 32nd Street, along West 32nd Street, and along West 31st Street. Sixteen freight sheds (eight eastbound and eight westbound) were identified on the block between West 31st and West 32nd Streets. Tracks were located north and south of the freight sheds and the area between the freight sheds was identified as the New York Central and Hudson River Railroad Company, New York Ontario and Western Railroad Company Street Freight Station. The use of these sheds appears to have been for the offloading of materials from rail cars and transferring them to local transportation.

In 1950, the freight sheds in Caemmerer Yard West were no longer present and the property was identified as the New York Central Railroad Company Freight Yard. The layout of the tracks appears to be the same after 1976, with fewer tracks (28) in Caemmerer Yard West. A freight terminal building was present in the northern portion of Caemmerer Yard West from 1976 to the early 1980s. The west portion of the freight terminal building was used as a motor freight station, which was likely for the transfer of goods or materials from local transport to rail cars.

Tracks were generally identified running through Caemmerer Yard East between West 30th Street and West 32nd Street from 1890 to the early 1980s. An iron works facility and various other commercial facilities were located on the block between West 32nd Street and West 33rd Street between 1890 and 1899. After 1899, the block between West 32nd Street and West 33rd was entirely occupied by the American Express Company West Side Terminal, with four tracks running through the building from 1899 to 1979. The American Express Company West Side Terminal appears to have been used as a terminal for the shipping and receiving of goods. In 1979, a loading dock was present on Caemmerer Yard East between West 30th Street and West 31st Street. A Metals Purchasing Company occupied the southern portion of Caemmerer Yard (north side of 30th Street) from 1950 to at least 1996.

Overhead tracks for the New York City Railroad (N.Y.C.R.R.) were identified along the western and southern perimeter of Caemmerer Yard after 1950.

Based on a review of the aerial photographs, use of Caemmerer Yard for shipping and receiving decreased after 1961. During the late 1980s, Caemmerer Yard was converted to the LIRR West Side Storage Yard. There was no evidence of maintenance facilities present on the property. In 1986, a 284,000-square-foot, continuously reinforced concrete slab was constructed. The slab is 13-1/2 inches thick. It was designed for a 50-year service life. Maintaining close steel reinforcement tolerances ensured that there would be no conflicts with the installation of track inserts. Concrete subballast slabs were used to carry loads where track was transitioned from slab track to conventional tie-and-ballast track that was used to construct the remainder of the yard.

b) Other Site Operations

A lumberyard was present on the southern portion of Caemmerer Yard West from 1890 to 1911. A coal yard was located in the northeast portion of Caemmerer Yard East from 1890 to 1930. According to the Sanborn Maps, a “dummy” locomotive house, which is assumed to have been a maintenance facility, was present in the northwest portion of Caemmerer Yard East from 1899 to 1950. The Metal Purchasing Company Inc. Warehouse was present to the south of Caemmerer Yard East from 1950 to at least 1996.

c) Adjacent Uses

Caemmerer Yard West

A lumberyard was identified on the block to the south side of Caemmerer Yard West (south of 30th Street) from 1890 to 1930. A coal yard was identified on the block south of Caemmerer Yard West from 1911 to 1930. A garage was identified on the block south of Caemmerer Yard West from 1950 to 1979, which then became a truck rental company from 1979 to 1992. Motor freight storage and another garage were present on the south block from 1979 to 1992. The New York City Department of Sanitation Public Works was identified on the block south of Caemmerer Yard West from 1979 until at least 1996. A filling station with six 550-gallon buried tanks was identified on the northeast corner of the block south of Caemmerer Yard West from 1950 until at least 1996. A motor freight station building with two gasoline tanks (size not identified) was identified on the block north of Caemmerer Yard East from 1976 to the early 1980s.

Caemmerer Yard East

On the block located directly south of the rail yard (south of West 30th Street) a metal works and junk yard were present from 1930 to 1979. An auto repair shop was located on the block south of Caemmerer Yard East from 1930 to at least 1996. A gasoline station with an unidentified number of 550-gallon tanks was located on the southwest corner of the block south of Caemmerer Yard East from 1930 to 1950. In 1930, the Central Railroad right-of-way or viaduct was present south of, and entering the Caemmerer Yard East. In 1950, the Central Railroad right-of-way was renamed the Metal Works Co. viaduct. A metal purchasing company was located on the block south of Caemmerer Yard East from 1950 to 1996. A motor freight station was located on the block south of Caemmerer Yard East from 1979 to 1996. In 1996, the former Metal Works Co. viaduct is shown as the auto repair viaduct.

Historical use of Caemmerer Yard as a freight yard and train storage yard may have resulted in localized petroleum and metals impacts. There may have been localized applications of pesticides and herbicides along the tracks. Historically, creosote would likely have been applied to the railroad ties, potentially resulting in localized impacts. The historical presence of a coal yard, lumberyard and locomotive house at the property could have also resulted in localized petroleum impacts and metals from their operations. The historical presence of a lumberyard, coal yard, filling station, and motor freight station at properties in the vicinity of Caemmerer Yard West could have resulted in releases of petroleum, and possibly metals, to subsurface soil and groundwater, which could affect conditions at the property. The historical presence of a metal works, junkyard, auto repair facility, and filling station at properties in the vicinity of Caemmerer Yard East could have resulted in release of petroleum, and possibly metals, to subsurface soil and groundwater, which could affect conditions at the property. ACM, LBP, and PCB-containing equipment could be encountered should buildings or other structures be deconstructed as a result of the development of the Multi-Use Facility.

d) Intrusive Investigation Results: Caemmerer Yard West

As a result of the findings of the Phase I ESA, a work plan for a Phase II ESA was developed to collect samples of subsurface soil and groundwater. Specifically, fifty-seven (57) soil borings were

advanced consistent with the work plan, and twenty-two (22) monitoring wells were installed. Two hundred (200) soil samples and twenty-two (22) groundwater samples were collected. Field screening revealed that elevated concentrations of methane are not present in soil at Caemmerer Yard West. No pesticides, herbicides or PCBs were detected in soil samples. VOC concentrations exceeded TAGM RSCOs in three (3) soil samples; two of which were benzene exceedances. These exceedances appear to be isolated. Samples from thirty (30) soil borings revealed individual SVOC concentrations that exceeded TAGM RSCOs; however, none of the samples exceeded the NYSDEC's TAGM RSCO for total SVOCs. Statistical analysis revealed the mean concentrations of the SVOCs benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, and dibenzo(a,h)anthracene exceed the TAGM RSCOs. Samples from thirty-two (32) soil borings revealed metals concentrations at levels above TAGM RSCOs. Statistical analysis revealed the mean concentrations of copper, mercury, nickel, and zinc exceed the TAGM RSCOs and naturally-occurring background concentrations. Appendix O.2 presents laboratory results for soil samples.

In two instances, potential petroleum impacts to soil were noted through field screening and the NYSDEC was notified (spill cases 04-07411 and 04-07107). Laboratory analyses confirmed the presence of petroleum contamination in one case (04-07411) and revealed no elevated concentrations of VOCs or SVOCs in the other (04-07107). Based on the analytical results, the NYSDEC was requested to close spill case 04-07107.

With the exception of isolated petroleum contamination (Case 04-07411, located on the sidewalk southeast of the intersection of Twelfth Avenue and West 33rd Street), the soil results are consistent with the presence of historic urban fill (confirmed through comparison of the fill material results to samples collected of native site soils), which was anticipated at the site. This type of fill is not uncommon and is not likely attributed to any of the areas of environmental concern identified in the Phase I ESA.

Groundwater sample results did not identify the presence of PCBs, pesticides or herbicides. Four groundwater samples revealed the presence of VOC concentrations above TOGS. Several of the groundwater samples exceeded TOGS for SVOC and/or metals concentrations; however, the types and levels identified are commonly the result of contaminants found where historic urban fill is present. Appendix O.2 presents laboratory results for groundwater samples.

The results of the Phase II ESA confirmed the hypothesis that anthropogenic activities (e.g., historic placement of fill material and use of hazardous materials (e.g., petroleum) had resulted in a random distribution of contamination at the site. The Phase II ESA revealed that the historic placement of fill material and the historic use of petroleum have resulted in conditions that require management.

Based on the Phase II ESA, there is minimal risk of exposure to contaminated soil and groundwater for on-site receptors at Caemmerer Yard West. The contamination identified raises no unique environmental concerns and requires no specific precautions beyond the typical measures employed during construction in New York City, and described within at Section H, "Summary of Management Measures".

e) Intrusive Investigation Results: Caemmerer Yard East

As a result of the findings of the Phase I ESA, a work plan for a Phase II ESA was developed to collect samples of subsurface soil and groundwater. Thirty-four (34) soil borings were advanced and four (4) monitoring wells were installed at Caemmerer Yard East to assess potential environmental concerns identified in the Phase I ESA. One hundred seven (107) soil samples and four groundwater samples were collected and sent to a NYSDOH-approved laboratory for analysis. Field screening revealed that elevated concentrations of methane are not present in soil at Caemmerer Yard East. No pesticides, herbicides or PCBs were detected in the soil samples and VOC concentrations did not exceed TAGM RSCOs. Soil samples revealed SVOC and metals concentrations that exceeded

TAGM RSCOs. Statistical analysis revealed that the mean concentrations of SVOCs benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, and dibenzo(a,h)anthracene exceed the TAGM RSCOs. The mean concentrations of copper, mercury, and zinc exceed the TAGM RSCOs and naturally-occurring background concentrations. The soil results are consistent with the presence of historic urban fill (confirmed through comparison of the fill material results to samples collected of native site soils), which was anticipated at the site. This type of fill is not uncommon and is not likely attributed to any of the areas of environmental concern identified in the Phase I ESA. Appendix O.2 presents laboratory results for soil and groundwater samples.

Groundwater sample results did not identify the presence of VOCs, PCBs, pesticides or herbicides. One groundwater sample revealed the presence of the SVOC diethyl phthalate at a concentration above TOGS. All four groundwater samples (including 1 duplicate sample) exceeded TOGS for metals concentrations; however, the types and levels identified are commonly the result of contaminants found within historic urban fill. Appendix O.2 presents laboratory results for groundwater samples.

The results of the Phase II ESA confirmed the hypothesis that anthropogenic activities (e.g., historic placement of fill material had resulted in a random distribution of contamination at the site. The Phase II ESA also revealed that the historic use of hazardous materials had not resulted in soil or groundwater contamination. The results of the Phase II ESA indicate that the historic placement of fill material produced conditions that require management.

Based on the Phase II ESA, there is minimal risk of exposure to contaminated soil and groundwater for on-site receptors at Caemmerer Yard East. The contamination identified raises no unique environmental concerns and requires no specific precautions beyond the typical measures employed during construction in New York City, and described within at Section H, “Summary of Management Measures”.

6. Relocated DSNY Facility and the NYPD Tow Pound

The Proposed Action would accommodate the relocation of the DSNY facility and the NYPD Tow Pound from their existing locations at Pier 76 and the Gansevoort Pier, respectively, to Block 675 (between Eleventh and Twelfth Avenues and West 29th and 30th Streets.) If these facilities are not developed, the site would be used for an at-grade public open space. As summarized in Table 14-6, the properties that comprise Block 675 have historically been utilized for a variety of commercial purposes, including a lumberyard, truck transfer station, and bus parking/fueling facility. The regulatory agency database review identified several active petroleum releases from nearby sites; however, the historical uses of the site and its proximity to a rail yard immediately to the north, and a coal storage yard immediately to the south create the possibility for subsurface contamination. The contamination that could be present beneath the site includes VOCs, SVOCs, metals, and PCBs, which are compounds typically associated with coal ash, rail yard operations, and historic fill material. Additionally, ACM, LBP, and PCB-containing equipment could be present within the buildings and/or structures on Block 675.

TABLE 14-6
EXISTING CONDITIONS BLOCK 675

Block/ Lot #	Street Address	Onsite RECs	Offsite RECs	Above Grade Concerns
0675/001	260 West Side Highway	Soap factory, coal yard and truck parking area	Rail yards, coal yard, truck rental and terminal, and DSNY garage	Structure located on-site, ACM, LBP, and/or PCB-containing equipment
0675/012	613 W. 29th St.	Smelting and refining works, asbestos construction, trucking supply	Gasoline station with USTs and gasoline station	Structure located on-site, ACM, LBP, and/or PCB-containing equipment
0675/024	609 W. 29th St.	None Identified	Coal yard, railroad freight yard, NYSDOS maintenance facility, gasoline station with USTs and two active NY Spills	Structure located on-site, ACM, LBP, and/or PCB-containing equipment
0675/026 & 029	603 W. 29th St. & 301 Eleventh Ave.	Smelting and refining facility, asbestos construction company and express depot	Coal yard, rail yard, gasoline station with USTs and garage/gasoline station	Structure located on-site, ACM, LBP, and/or PCB-containing equipment
0675/036	309 Eleventh Ave.	Gasoline station with USTs and filling station	Iron works, railroad on Eleventh Avenue, express depot, and gasoline station	Structure located on-site, ACM, LBP, and/or PCB-containing equipment (gas station shop)
0675/038 & 039	604 & 606 W. 30th St.	Soap factory, coal yard, smelting and refining facility, DSNY garage and NY Times truck parking	Smelting and refining works, gasoline station with USTs, and a trucking facility	Structure located on-site, ACM, LBP, and/or PCB-containing equipment

Prior to construction, appropriate site investigations will be conducted to more fully characterize possible contamination in the area and to identify any further action, investigation, or management that would be required if the Proposed Action were to proceed. Section H of this chapter includes preventative and management procedures that would be followed in order to minimize human contact with contaminants. In order to avoid adverse impacts to public health or to the environment, any such required action, investigation or management would be conducted in accordance with applicable law, and any additional regulatory requirements of the NYSDEC, DOL or DEP, as appropriate.

D. 2010 FUTURE WITHOUT THE PROPOSED ACTION

Without the Proposed Action, the Project Area would generally continue in its current condition; however, moderate levels of residential and commercial redevelopment are expected to occur, as described in Chapter 3, “Analytical Framework.”

Some of the Projected and Potential Development Sites would be redeveloped, resulting in ground disturbance comparable to ground disturbance with the Proposed Action.

Discussions between the NYSDEC and MTA LIRR are ongoing to determine both the appropriate actions for the northeast area of Corona Yard and the potential that contamination found at this site could be attributable to sources on neighboring sites. The extent and type of management to be performed will be determined as a result of these discussions.

Ongoing management of the documented releases at the Quill Bus Depot would continue until requirements of the existing Consent Order with the NYSDEC are met. Similar is expected for the site of the proposed Convention Center Hotel.

With the exception of the aforementioned sites, there would be no change to existing conditions at the properties associated with the elements of the Proposed Action. If the Proposed Action were not implemented, potentially hazardous materials would remain in place. Hazardous materials would be

encountered as these projects would progress separately from the Proposed Action. For these sites, hazardous materials would be managed by the developers in accordance with federal, State or local regulations.

E. 2010 FUTURE WITH THE PROPOSED ACTION

Hazardous materials in soil, soil gas, groundwater, consolidated rock, and building materials present within the Project Area would be managed, isolated, and/or removed during the construction phase in accordance with applicable NYSDEC and DEP requirements as discussed below. As a result, no significant adverse impacts related to hazardous materials are anticipated from the Proposed Action.

Contaminated groundwater would be treated on-site prior to discharge in accordance with requirements of the NYSDEC- and/or DEP-issued permits. Contaminated soil would be removed through excavation or isolated through the use of impermeable materials (e.g., concrete, asphalt, geotextiles, etc.). Hazardous building materials would be abated or managed prior to demolition activities, thus preventing the release of hazardous materials during demolition activities. The following elements of the Proposed Action are conservatively assumed to be constructed by 2010 (the contaminants that could potentially be encountered during construction activities associated with each element are identified below):

- Rezoning Area (Projected and Potential Development Sites)
- No. 7 Subway Extension;
- Corona Yard;
- Construction of New Quill Bus Depot;
- Demolition of Existing Quill Bus Depot;
- Convention Center Expansion, Including Renovations of Existing Convention Center, Creation of Truck Marshalling Yard and Truck Marshalling Route, and Hotel;
- Multi-Use Facility at Caemmerer Yard;
- Underground Public Parking Garage (under the Midblock Park and Boulevard System)
- Construction of Southern Portion of the Midblock Park and Boulevard System (Block 705 Lots 53 and 54); and
- Relocation and Consolidation of NYPD Tow Pound, DSNY Facility and its associated parking facility (or demolition of buildings to develop an at-grade park).

1. Rezoning Area (Projected and Potential Development Sites)

There is potential for significant adverse impacts related to hazardous materials resulting from the presence of underground storage tanks, subsurface contamination resulting from on- and off-site sources, ACM, LBP, PCB-containing materials and hazardous waste, if improperly managed. Construction activities in the area proposed for rezoning could disturb hazardous materials and increase pathways for human and environmental exposure. To avoid significant adverse impacts, (E) Designations would be placed on the zoning map denoting the tax lots presented below in Table 14-7. The list includes tax lots containing projected and potential development sites for both the 2010 and 2025 analysis years.

TABLE 14-7
RESULTS OF (E) DESIGNATION REVIEW FOR DEVELOPMENT SITES

Projected Development Sites						
Site No.	Block	Lot(s)	Potential Contamination	Environmental Concern leading to (E) Designation	Current Land Use	Historic Land Use
1	702	1	Non-Petroleum, Petroleum	Rail Yards	Rail Yards	Rail Yards
2	705	1, 5, 54, 68	Non-Petroleum	Machine Shop	Retail/Trucking	Machine Shop
3	705	29, 30, 32, 39, 41, 42, 45, 46, 53	Non-Petroleum	Publishing	Publishing	N/A
4	706	1, 10, 55	Non-Petroleum, Petroleum	Auto Repair/Foundry	Auto Repair	Foundry
5	706	17, 20, 29, 35, 36	Non-Petroleum, Petroleum	Auto Repair, Foundry	Auto Repair	Foundry
6	707	1, 13, 56	Petroleum, Non-Petroleum	Maintenance Garage, Railroad right-of-way,	Open Space	N/A
7	707	20, 26, 31, 39, 41, 45, 51	Petroleum	Auto Repair, Petroleum Storage	Motor Vehicle Parking, Commercial	N/A
8	708	1, 62, 65	Non-Petroleum, Petroleum	Auto Repair, Petroleum Storage	RR Right of Way, Auto Repair	RR Right of Way
9	708	20, 22, 24, 37, 41-43, 46	Petroleum	Auto Repair, Petroleum Storage	Commercial	N/A
10	709	1-3, 7, 13-15, 17, 60, 61, 63, 66-68, 70, 71	Non-Petroleum, Petroleum	Auto Repair, Petroleum Storage	RR Right of Way, Auto Repair	RR Right of Way
11	709	25, 30, 31, 33, 36, 37, 41, 43, 45, 46	Petroleum	Auto Repair, Petroleum Storage, Truck Rental	Vehicle Parking, Truck Rental	Vehicle Parking
12	710	1, 6, 11, 58	Petroleum	Auto Repair, Petroleum Storage, Railroad right-of-way	Vehicle Parking	N/A
13	710	20, 22, 27, 29, 42	Petroleum, Non-Petroleum	Auto Repair, Petroleum Storage, Machine Shop	N/A	N/A
14	1069	29, 34,	Petroleum	Auto Repair, Petroleum Storage	Vehicle Parking, Religious Institution	Religious Institution
15	1070	1	Non-Petroleum, Petroleum	Electrical Substation	Electrical Substation	Electrical Substation
16	1070	49, 50, 54	Non-Petroleum, Petroleum	Electrical Substation	Vehicle Parking	N/A
17	1090	9, 10, 11, 109	Non-Petroleum	Railroad Equipment Manufacture	Vacant	RR Equipment Manufacture
18 ³	1090	20, 23, 29, 36, 42	Petroleum	Petroleum Storage	N/A	N/A
19	1051	1, 49, 50, 51, 53, 57	Petroleum	Auto Rental Facility	Auto Rental, Commercial	N/A
20	1050	1, 6, 61, 158	Non-Petroleum	Piano Factory, Coal Yard	Community Facilities	Piano Factory, Coal Yard
21	736	1, 73	Petroleum	Petroleum Storage	Transportation	N/A
22	736	30, 33-38	Petroleum	Petroleum Storage	N/A	N/A
23	735	1, 6, 7, 65	Petroleum	Auto Repair, Petroleum Storage	Motor Vehicle Parking, Commercial	N/A

³ In the event that ULURP No. 040249 ZMM (CEQR No. 04DCP014M) is adopted before the Proposed Action, the (E) Designation on Block 1090, Lots 36 and 42, would be removed administratively by the Department of City Planning. The property owner would be bound to the terms of a DEP-approved Restrictive Declaration which would require the owner to characterize any hazardous materials contamination that may exist in subsurface soils and groundwater prior to any site disturbance.

TABLE 14-7 (CONTINUED)
RESULTS OF (E) DESIGNATION REVIEW FOR DEVELOPMENT SITES

Projected Development Sites						
Site No.	Block	Lot(s)	Potential Contamination	Environmental Concern leading to (E) Designation	Current Land Use	Historic Land Use
24	735	22	Petroleum	Trucking Terminal	Transportation, Trucking Terminal	Transportation, Trucking Terminal
25	734	1, 5	Petroleum	Auto Repair, Petroleum Storage	Auto Repair	Gasoline Station
26	734	16, 18, 52, 55	Petroleum	Petroleum Storage	Vehicle Parking, Warehouse, Residential	N/A
27	733	67, 68, 70	Petroleum, Non-Petroleum	Furniture Factory	Motor Vehicle Parking	Furniture Factory
28	733	25, 28, 30, 31	Non-Petroleum	Adjacent to Block 733 Lot 44	N/A	N/A
29	732	1	Petroleum	Petroleum Storage	N/A	Gasoline Station
30	731	43, 44, 48	Non-Petroleum	Photography Processing, RR Right of Way	Vehicle Parking	N/A
31	729	1	Petroleum, Non-Petroleum	Adjacent to Block 729 Lot 50	N/A	N/A
32	729	60	Petroleum, Non-Petroleum	Trucking Terminal, Railroad Right-of-Way	Vehicle Parking	N/A
33	729	50	Petroleum, Non-Petroleum	Railroad Right-of-Way	Railroad Right-of-Way	Railroad Right-of-Way
34	729	50, 60, 163	Petroleum, Non-Petroleum	Railroad Right-of-Way	Railroad Right-of-Way	Railroad Right-of-Way
36	763	32, 34, 38, 42	Petroleum	Gasoline Station	Commercial & Retail, Residential, Motor Vehicle Parking	N/A
37	762	6	Non-Petroleum	Machinery Repair	Residential, Commercial	N/A
38	762	61	Petroleum, Non-petroleum	Adjacent to Block 763 Lot 60	N/A	N/A
39	762	13, 16, 60	Petroleum, Non-Petroleum	Publishing, Machinery Repair	Commercial & Retail, Residential, Motor Vehicle Parking	N/A
40	761	62	Petroleum, Non-petroleum	Adjacent to Block 761 Lot 10	N/A	N/A
41	761	10, 13, 43	Petroleum	Machinery Repair, Textiles Product Manufacturer	Commercial & Retail, Vehicle Parking	N/A
42	760	7	Petroleum	Adjacent to Block 760 Lot 68	N/A	N/A
43	758	1, 5, 7	Petroleum	Coal Yard	Commercial & Retail, Public/Private Institution, Vehicle Parking	Coal Yard
44	754	44	Petroleum, Non-Petroleum	RR Right of Way	Vehicle Parking	N/A
Potential Development Sites						
45	781	1	Petroleum, Non-Petroleum	Railroad Right of Way	Transportation	Railroad
46	1069	1	Petroleum	Auto Sales/Service	Commercial	N/A
47/48	711	1	Petroleum, Non-Petroleum	Railroad Right of Way	Transportation	Railroad
49	1071	20, 23, 29	Petroleum, Non-Petroleum	Railroad Right of Way, Lumber yard	Transportation	Railroad
50	1051	31-33, 35, 36, 135, 138	Non-Petroleum	Photography Processing	Commercial & Retail, Public Private Institution	Photography Processing
51	737	30, 31, 32, 33	Petroleum	Petroleum Storage	Commercial, Retail	N/A
52	736	1, 73	Petroleum	Gasoline Station	Transportation	Transportation

TABLE 14-7 (CONTINUED)
RESULTS OF (E) DESIGNATION REVIEW FOR DEVELOPMENT SITES

Potential Development Sites (continued)						
Site No.	Block	Lot(s)	Potential Contamination	Environmental Concern leading to (E) Designation	Current Land Use	Historic Land Use
53	735	11, 13, 17, 60	Petroleum	Auto repair	Transportation, Auto Repair	Auto Repair
54	734	6, 7, 8	Petroleum	Auto Wrecking/Repair	Auto Repair	Auto Repair
55	734	10	Petroleum	Auto Repair	Auto Repair	Auto Repair
56	733	60-64	Petroleum	Auto Repair	Auto Repair	Auto Repair
57	733	8, 9, 58	Petroleum	Auto Repair, Petroleum Storage	Motor Vehicle Parking	Auto Repair
58	733	23, 24, 47	Petroleum	Machine Shop	Motor Vehicle Parking and Residential Uses	Machine Shop
59	732	70	Petroleum	Gasoline Station	Motor Vehicle Parking	Gasoline Station
60	732	50	Petroleum	Machine Shop	N/A	N/A
61	731	22	Non-Petroleum	RR Right of Way	Vehicle Parking	Vehicle Parking
62	728	4, 67, 69	Petroleum	Petroleum Storage	Commercial	N/A
63	728	60	Petroleum	Petroleum Storage	Commercial	N/A
65	728	34	Petroleum, Non-Petroleum	RR Right of Way	Vehicle Parking	Vehicle Parking
66	1033	25, 41	Petroleum, Non-Petroleum	Coal Yards, Piano Factory	Vehicle Parking	Coal Yards, Piano Factory
67	763	72, 73	Petroleum	Automobile Rental	Residential, Commercial	N/A
68	763	12, 14, 17, 60, 65, 67	Petroleum	Auto repair and rental	Vehicle Parking, Commercial	Auto Repair
69	763	49, 56	Petroleum	Auto Repair	Vehicle Parking	N/A
70	763	28, 45, 46, 47	Petroleum	Gasoline Station	Gasoline Station	Gasoline Station
71	762	1, 2	Petroleum	Petroleum Storage	Vehicle Parking	N/A
72	762	11	Petroleum	Machinery Repair	Residential, Commercial	N/A
73	762	19	Adjacent	Adjacent within 400 Ft	N/A	N/A
74	762	46	Non-Petroleum	Photography Processing	Photography Processing, Vehicle Parking	N/A
75	761	5, 7	Petroleum, Non-Petroleum	Machinery Repair	Retail, Commercial, Residential, Vehicle Parking	N/A
76	761	41	Adjacent	Adjacent to Block 760 Lot 51	N/A	N/A
77	761	28	Non- Petroleum	Medical Laboratories	Medical	N/A
78	760	67, 68	Petroleum	Gasoline Station	Commercial & Retail	Gasoline Station
79	760	63	Petroleum, Non-petroleum	Adjacent to Block 760 Lot 16	N/A	N/A
80	760	58-60	Non-Petroleum	Piano Factory	Commercial, Residential, Motor Vehicle Parking	Piano Factory
81	760	55	Petroleum, Non-Petroleum	Adjacent to Block 760 Lot 51	N/A	N/A
82	760	51	Petroleum, Non-Petroleum	Gasoline Station, Piano Factory	Motor Vehicle Parking	Gasoline Station, Piano Factory
83	760	12	Petroleum, Non-Petroleum	Adjacent to Block 760 Lot 16	N/A	N/A
84	760	16, 18, 20	Petroleum, Non-petroleum	Trucking Terminal, Piano Factory, Freight Yard	Commercial	Trucking Terminal, Piano Factory, Freight Yard

**TABLE 14-7 (CONTINUED)
RESULTS OF (E) DESIGNATION REVIEW FOR DEVELOPMENT SITES**

Potential Development Sites (continued)						
Site No.	Block	Lot(s)	Potential Contamination	Environmental Concern leading to (E) Designation	Current Land Use	Historic Land Use
85	760	21	Petroleum, Non-petroleum	Adjacent to Block 760 Lots 16 and 51	N/A	N/A
86	759	14	Petroleum, Non-petroleum	Adjacent to Block 759 Lots 27 and 72	N/A	N/A
87	759	61	Petroleum	Trucking Terminal	Public Private Institutions	N/A
88	759	23, 26, 27, 55	Petroleum	Petroleum Storage	Commercial, Retail, Residential, Vehicle Parking	N/A
89	759	49	Non-petroleum	Electrical Substation	Commercial	Electrical Substation
90	754	63	Petroleum, Non-Petroleum	RR Right of Way	Vehicle Parking	N/A
91	754	51	Non-Petroleum	RR Right of Way	Public Private Institutions	N/A
92	780	19	Non-Petroleum	Medical Laboratories, Coal Storage	Commercial, Public Private Institution	Coal Storage
93	779	8	Non-Petroleum	Iron Works	Retail, Commercial, Residential	Iron Works
94	779	25-28, 53-56	Petroleum	Auto Repair	Retail, Commercial, Residential	Electrical Parts Manufacture
95	778	7, 13, 16, 18, 66, 70	Petroleum	Petroleum Storage, Lumber Yard, Iron Works	Commercial & Retail	Petroleum Storage, Lumber Yard, Iron Works
96	778	57	Petroleum, Non-Petroleum	Auto Body and Electric Supply Manufacture	Commercial & Retail	Auto Body and Electric Supply Manufacture
97	778	25, 27	Petroleum, Non-Petroleum	Auto Body, Electric Supply Manufacture	Commercial, Retail	Auto Body, Electric Supply Manufacture
98	778	29, 30, 31	Petroleum, Non-Petroleum	Auto Body, Electric Supply Manufacture	Commercial, Retail	Electric Supply Manufacture
99	778	33, 34	Non-Petroleum	Paper manufacturer	Commercial	Paper manufacturer

The placement of an (E) Designation on the zoning map would preclude the potential for significant adverse impacts related to hazardous materials because, as set forth below, the fee owner would be required to: (1) prepare and implement a DEP-approved site investigation to determine the extent of contamination, if any, at the site; (2) submit the findings of its investigation and, if necessary, a management plan, to the DEP for its review and approval; and (3) implement the DEP-approved management plan. The (E) Designation requires that these measures be implemented in order to proceed with site development at any of those sites.

To determine if contamination exists and perform an appropriate management, the following tasks must be undertaken by the fee owners(s) of the lot restricted by the (E) Designation prior to any demolition or disturbance of soil on the lot.

Task 1: The fee owner(s) of the lot(s) restricted by an (E) Designation will be required to prepare a scope of work for any soil, soil gas, or groundwater sampling and testing needed to determine if contamination exists, the extent of the contamination, and to what extent management could be required. The scope of work will include all relevant supporting documentation, including site plans and sampling locations. This scope of work will be submitted to the DEP for review and approval

prior to implementation. It will be reviewed to ensure that an adequate number of samples will be collected and that appropriate parameters are selected for laboratory analysis.

No sampling program may begin until written approval of a work plan and sampling protocol is received from the DEP. The number and location of sample sites should be selected to adequately characterize the type and extent of the contamination, and the condition of the remainder of the site. The characterization should be sufficiently complete to determine the necessary management strategy (if any) after review of the sampling data.

Task 2: A written report with findings and a summary of the data must be presented to the DEP after completion of the testing phase and laboratory analysis for review and approval. After receiving such test results, a determination will be provided by the DEP if the results indicate that management is necessary. If the DEP determines that no management is necessary, written notice shall be given by the DEP.

If management is necessary according to test results, a proposed management plan must be submitted to the DEP for review and approval. The fee owner(s) of the lot(s) restricted by this (E) Designation must perform such management as determined necessary by the DEP. After completing the management, the fee owner(s) of the lot restricted by this (E) Designation should provide proof that the work has been satisfactorily completed.

A DEP-approved construction-related HASP 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 the DEP for review and approval prior to implementation. With the implementation of the (E) Designation, no significant adverse impacts related to hazardous materials would occur.

2. No. 7 Subway Extension

The contaminants that could potentially be encountered within the Project Area during the construction and/or excavation of the elements associated with the No. 7 Subway Extension include VOCs, SVOCs, PCBs and metals in both the soil and groundwater; additionally, NOA in bedrock could be encountered between 26th and 29th Streets. Contaminants that could be encountered as a result of the demolition of buildings include ACM, LBP, and PCB-containing equipment. The elements of the No. 7 Subway Extension include:

- Alignment (including lay down areas and shaft-ways);
- Site A and Site L; and
- Station Locations (including ancillary facilities).

Section H of this chapter includes preventative and management procedures that would be followed in order to minimize human contact with contaminants and eliminate the potential for significant adverse environmental impacts. Any such required action, investigation, or management would be conducted in accordance with those procedures as well as applicable law, and any additional regulatory requirements of the NYSDEC, DOL or DEP, as appropriate.

3. Corona Yard

The contaminants that could potentially be encountered during the construction and/or excavation of Corona Yard include VOCs, SVOCs, and metals in both soil and groundwater. Discussions between the NYSDEC and LIRR are ongoing to determine the appropriate management for the northeast portion of this site. The resolution of these discussions will result in a remedial action plan.

Underlying Queens County is an EPA-designated sole source aquifer that supplies drinking water for southeastern Queens and Long Island, as discussed in Chapter 13, "Natural Resources." The

stratigraphy of Corona Yard's subsurface is discontinuous, but generally consists of fill overlying organic clay, sand and gravel, varved silt and clay, followed by glacial till and bedrock. This sequence of strata reveals that the Lloyd sand member (sole source aquifer) is not present beneath the site and, as a consequence, construction associated with the Proposed Action would not create pathways for contaminants to enter the aquifer.

4. Construction of new Quill Bus Depot

The contaminants that could be encountered during the construction of the new Quill Bus Depot include VOCs, SVOCs, and metals in both the soil and groundwater. Asbestos-containing building materials and Lead-Based Painted surfaces are present in the MTA Metals Purchasing Building. (See discussion of Caemmerer Yard, below, for sections of relocated Quill Depot construction on Caemmerer Yard.) Section H of this chapter includes preventative and management procedures that would be followed in order to minimize human contact with contaminants and eliminate the potential for significant adverse environmental impacts. Any such required action, investigation, or management would be conducted in accordance with those procedures as well as applicable law, and any regulatory requirements of the NYSDEC, DOL or DEP, as appropriate.

5. Demolition of existing Quill Bus Depot

During the demolition of the Quill Bus Depot and construction of a portion of the Convention Center Expansion, contaminants that could be encountered include VOCs, SVOCs, ethylene glycol, and PCBs in soil and groundwater. Ongoing management of the documented releases at the Quill Bus Depot would continue until requirements of the Consent Order with the NYSDEC are met. However, the management methods could change to include removal and treatment of excavated soil and groundwater generated from the proposed construction. Petroleum-contaminated soil and groundwater would be handled as per the procedures that are discussed in Section H of this chapter, which include preventative and management procedures that would be followed in order to minimize human contact with contaminants and eliminate the potential for significant adverse environmental impacts. Any such required action, investigation, or management would be conducted in accordance with those procedures and the Consent Order, as well as all applicable law, including regulatory requirements of the NYSDEC, DOL or DEP, as appropriate.

6. Convention Center Expansion (Including Renovation of Existing Convention Center, Creation of Truck Marshalling Yard and Truck Marshalling Route, and Hotel)

Construction of the Convention Center Expansion would involve soil excavation for construction of building foundations. Dewatering could also be required. In addition, construction on the Convention Center Expansion would require demolition of certain structures on certain parcels. The contaminants that could potentially be encountered during the construction and/or excavation for the expansion of the Convention Center include VOCs, SVOCs, metals, creosote, coal tars, and cyanide in both soil and groundwater. The proposed location for the hotel is the area of the former MGP site; this is the area where the coal tars and cyanide would be of greatest concern. During demolition of structures on Blocks 685 and 1088, and during renovations of the existing Convention Center, contaminants that could be encountered include ACM, LBP, and PCB-containing equipment. Section H of this chapter includes preventative and management procedures that would be followed in order to minimize human contact with contaminants and eliminate the potential for significant adverse environmental impacts. Any such required action, investigation, or management would be conducted in accordance with applicable law, and any regulatory requirements of the NYSDEC, DOL or DEP, as appropriate.

7. Multi-Use Facility at Caemmerer Yard

The contaminants that could potentially be encountered during the construction and/or excavation on Caemmerer Yard (the area bound to the north by West 33rd Street, to the south by West 30th Street, to the east by Tenth Avenue, and to the west by Twelfth Avenue) include VOC, SVOCs, and metals, in both soil and groundwater, if the construction requires subsurface intrusion(s) that could impact groundwater, which could be required for footings of the deck proposed for the western part of the Yard. All petroleum-contaminated soil and groundwater would be managed as per the procedures set forth in Section H of this chapter, which include preventative and management procedures to be followed in order to minimize human contact with contaminants and eliminate the potential for significant adverse environmental impacts. Section H of this chapter includes preventative and management procedures that would be followed in order to minimize human contact with contaminants and eliminate the potential for significant adverse environmental impacts. Any such required action, investigation, or management would be conducted in accordance with applicable law, and any regulatory requirements of the NYSDEC, as appropriate.

8. Underground Public Parking Garage (under the Midblock Park and Boulevard System)

The contaminants that could potentially be encountered during the construction and/or excavation of the underground parking facility include VOCs, SVOCs, PCBs, and metals in both the soil and groundwater; should buildings be deconstructed as part of this action, ACM, LBP, and PCB-containing equipment are additional contaminants that could be encountered. Section H of this chapter includes preventative and management procedures that would be followed in order to minimize human contact with contaminants and eliminate the potential for significant adverse environmental impacts. Any such required action, investigation, or management would be conducted in accordance with applicable law, and any regulatory requirements of the NYSDEC, DOL or DEP, as appropriate.

9. Construction of southern portion of the Midblock Park and Boulevard System (Block 705 Lot 53 and 54)

Construction of the Midblock Park and Boulevard System is expected to begin in mid-2006 and progress north sequentially, with completion assumed before 2025. However, for the first construction analysis year, 2006/2007, only one block is projected to be under construction – the central portion of Block 705, bounded by West 33rd and West 34th Streets and Tenth and Eleventh Avenues. The major construction activities would include grading and the placement of a sand/gravel base; during such activities, the contaminants that could potentially be encountered include VOCs, SVOCs, PCBs, and metals in the soil. Groundwater is not expected to be affected. During the demolition of the existing three-story masonry structure ACM, LBP, and PCB-containing equipment could also be encountered. Section H of this chapter includes preventative and management procedures that would be followed in order to minimize human contact with contaminants and eliminate the potential for significant adverse environmental impacts. Any such required action, investigation, or management would be conducted in accordance with applicable law, and any regulatory requirements of the NYSDEC, DOL or DEP, as appropriate.

10. Relocation and Consolidation of NYPD Tow Pound, DSNY Facility and its Associated Parking Facility (or demolition of buildings to develop an at-grade park)

The contaminants that could potentially be encountered during the construction and/or excavation for the relocation and consolidation of the NYPD Tow Pound and DSNY include VOCs, SVOCs, PCBs, and metals in both the soil and groundwater; should buildings be deconstructed as part of this action, ACM, LBP, and PCB-containing equipment are additional contaminants that could be encountered. Section H of this chapter includes preventative and management procedures that would be followed

in order to minimize human contact with contaminants and eliminate the potential for significant adverse environmental impacts. Any such required action, investigation, or management would be conducted in accordance with applicable law, and any regulatory requirements of the NYSDEC, DOL or DEP, as appropriate.

11. Operations

Hazardous materials encountered as part of the Proposed Action would be managed, isolated, or removed during the construction phase (see Chapter 23, “Construction Impacts”), therefore, no significant impacts would occur during the operational phase of the Proposed Action. During construction, management measures, including a CEPP, would be implemented to minimize any potential hazardous materials impacts (see Section H, Summary of Management Measures).

F. 2025 FUTURE WITHOUT THE PROPOSED ACTION

Without the Proposed Action, the Project Area would generally continue in its current condition; however, moderate levels of residential and commercial redevelopment are expected to occur, as described in Chapter 3, “Analytical Framework.”

Some of the Projected and Potential Development Sites would be redeveloped, resulting in ground disturbance comparable to ground disturbance with the Proposed Action.

With the exception of the aforementioned projected development sites, there would be no change to existing conditions at the properties associated with the elements of the Proposed Action. If the Proposed Action were not implemented, potentially hazardous materials would remain in place. Hazardous materials would be encountered as these projects progress separately from the Proposed Action. For these sites, hazardous materials would be managed by the developers in accordance with federal, State or local regulations.

G. 2025 FUTURE WITH THE PROPOSED ACTION

The project elements that are proposed to be built and completed between 2010 and 2025 analysis year include the remaining Projected and Potential Development Sites and Midblock Park and Boulevard System Sites. The contaminants that could potentially be encountered as a result of the construction and/or excavation associated with these elements are presented below.

Hazardous materials within soil, soil gas, groundwater, and building materials that would be encountered by implementation of the Proposed Action would be managed, isolated, and/or removed during the construction phase (see Chapter 23, “Construction Impacts”). Contaminated groundwater would be treated on-site prior to discharge in accordance with requirements of the NYSDEC- and DEP-issued permits. Hazardous building materials would be abated or managed prior to demolition activities. Significant adverse impacts related to hazardous materials are not anticipated for the 2025 Future With the Proposed Action.

1. Rezoning Area (Projected and Potential Development Sites)

As described above under the Future With the Proposed Action in 2010, based on the preliminary screening assessment, certain projected and potential development sites would be mapped with (E) Designations. Therefore, no significant adverse impacts related to hazardous materials are anticipated as a result of the proposed zoning map amendments.

2. Midblock Park and Boulevard System

For the 2025 Analysis Year, it is assumed that development of the Midblock Park and Boulevard System area would be complete; development would therefore have progressed from West 33rd Street

to West 42nd Street as indicated on Table 14-7. The major construction activities associated with the development of the aforementioned area would include demolition of buildings and the grading and placement of a sand/gravel base. Contaminants that could potentially be encountered include VOCs, SVOCs, PCBs, and metals in soil; groundwater is not expected to be affected but if it were to be, the same contaminants would be potentially encountered. During the demolition of buildings in this area, ACM, LBP, and PCB-containing equipment are likely to be encountered.

By 2025, the Midblock Park and Boulevard System on the block south of West 38th Street between Tenth and Eleventh Avenues would be constructed, requiring construction over the Empire Line. Construction methods for this segment differ from the initial segment (as discussed in 2010 Future With Proposed Action). The segment of the Midblock Park and Boulevard System constructed between 2010 and 2025 would be built partially over the rail cut, and a steel and concrete deck would be supported by driven piles.

This type of construction could result in encountering localized areas of contamination. The contaminants that could potentially be encountered include VOCs, SVOCs, PCBs, and metals in the soil and groundwater.

During the demolition of existing buildings contaminants that could potentially be encountered include ACM, LBP, and PCB-containing equipment.

3. Operations

All elements of the Proposed Action would be operational in this scenario. Since hazardous materials associated with each of the project elements would be managed, isolated, or removed during the construction phase, no significant impacts would occur during the operational phase of the Proposed Action.

H. SUMMARY OF MANAGEMENT MEASURES

Management measures have been developed to address potential hazardous materials that could be encountered through implementation of the Proposed Action. The management measures include implementation of a CEPP to manage hazardous materials during development of sites by the public Project Sponsors. Management measures for private development sites will be developed through the (E) Designation under the zoning amendments. The CEPP would consist of the development and implementation of specific measures to protect worker and public health and safety, as well as programs to manage contaminated materials during construction and thereby prevent any significant adverse impacts during construction from such materials. Implementation of these measures would also ensure that any hazardous materials that remain in place would be isolated to the extent required to prevent any significant adverse environmental impacts during the operational phase of the Proposed Action.

1. Further Investigations

Additional investigations, described below, would be undertaken, as appropriate, at properties to be acquired or developed privately to determine the nature and extent of contamination at the site of concern, and could include further regulatory agency document research, as well as soil and/or groundwater sample collection. Once the areas requiring excavation are better defined, and if physical testing is deemed necessary, a sampling protocol would be prepared. This protocol would indicate locations based on both the site's potential to have caused contamination and on the site's location relative to proposed construction activities for the Proposed Action. The following summarizes elements that the protocol used to conduct subsurface investigations would include:

- Illustrations that show the site location, the planned boring and monitoring well locations, and the field activities schedule

- Site background information, such as known subsurface conditions, historical site information, and information from previous environmental investigations
- A description of the sampling plan, which would determine sample locations based on the proposed construction activities and facility design, as well as geology (e.g., depth of construction and location of groundwater). At a minimum, sampling would be conducted in areas where the greatest amount of soil disturbance would occur, as well as at areas identified as warranting further analysis. Additional sampling could be conducted in areas that exhibit no known evidence of environmental impairments.
- Detailed proposed monitoring well locations and plan, which would include monitoring well depths and design
- The laboratory analysis parameters
- “Quality Assurance/Quality Control Project Plan” that would detail the quality assurance and quality control program (QA/QC). This program would be based on the NYSDEC’s QA/QC, as well as on U.S. EPA requirements. This plan would describe laboratory methods, field quality control sampling, sample custody procedures, and field decontamination procedures.
- Details for management of investigation-derived wastes, including drill cuttings, drilling fluids, decontamination fluids, and monitoring well purge fluids
- Site-specific HASPs and the general HASP for the Proposed Action, which would be the primary measure used to safeguard onsite workers and nearby residents during intrusive investigations. Additional details regarding the HASP are presented below.
- After completion of the subsurface investigation a detailed report would be prepared summarizing the findings of field activities and comparing the analytical results to the appropriate federal, State, and City standards and guidelines. The report would include soil boring and monitoring well installation logs.

2. Measures During Construction

Management measures have been developed to address potential hazardous materials that may be encountered through implementation of the Proposed Action. The management measures include implementation of a CEPP to manage hazardous materials during development of sites by the parties associated with the Proposed Action. The CEPP would consist of the development and implementation of specific plans designed to protect worker and public health and safety plans and manage contaminated materials during construction. These plans would be prepared by contractors for review by the Project Sponsors, as well as NYSDEC, DOL and DEP, as appropriate. The results of the investigations would be used to guide construction activities as appropriate.

The CEPP would provide the framework to develop and implement site-specific plans that would establish proper management of hazardous materials (i.e., soil, bedrock, soil gas, groundwater, and building materials) that could be encountered during construction and/or demolition associated with project elements, including: the Midblock Park and Boulevard System; the No. 7 Subway Extension; Convention Center Expansion; Multi-Use Facility, and the relocated DSNY Facility and NYPD Tow Pound. The CEPP would require the development of HASPS (both project-wide and site-specific) and contaminated materials management plans that would prevent hazardous materials exposure to workers and the general public. The CEPP would also require plans for the transport and disposal of contaminated materials in accordance with all applicable federal, State and local requirements (e.g., Resource Conservation and Recovery Act (RCRA) and Toxic Substance Control Act (TSCA)). The Project Sponsors or the designated contractors would be responsible for implementing the CEPP for

their respective project elements. The CEPP would include provisions for the following plans, described in detail below:

- Health and Safety Plan
- Soil Management Plan
- Spoils Management Plan
- Soil Gas Management Plan
- Groundwater Management Plan
- Petroleum Storage Tanks Management Plan
- Asbestos-Containing Building Materials Management Plan
- Lead-Based Paint Management Plan
- PCB-Containing Equipment Management Plan

a) Health and Safety Plan

HASPs would include measures to manage exposure to contaminated materials during construction associated with the Proposed Action. Each site specific HASP would include provisions for the handling of documented contaminated materials, as well as contingency measures to be taken if unanticipated contamination is encountered. For many of the activities associated with the Proposed Action, the OSHA provides regulations and guidelines that would be included in the HASP.

Implementation of the HASPs would be the principal means of protecting the workers and general public from exposure to contaminated materials. Contingencies to address potential hazards would also be included. Workers that have the potential to come in contact with contaminated materials would be required to read, understand, and implement the procedures specified in the HASPs. These procedures include health and safety guidelines and work practices to prevent exposure. The procedures would be developed through evaluation of the suspect contaminants and the work to be performed. Sampling and monitoring for the presence of contaminants would be included in the HASPs and implemented during the Proposed Action in accordance with OSHA regulations and guidelines. Monitoring of suspect contaminated materials would be performed through the analyses of air, soil, and rock to identify the presence of contamination and the need for additional testing.

As a requirement of the HASPs, personnel that have the potential to come into contact with contaminated materials would have specific training to assist them in identifying the presence of potential health and safety hazards. The HASP would include medical monitoring, certification, and training requirements for workers with the potential to encounter certain contaminated materials (e.g., lead, asbestos, hazardous waste, etc.).

b) Soil Management Plan

In general, the soil management plan would present the type of soil handling and disposal that would be utilized during construction activities. For contaminated soils that would remain in place, health and safety would be achieved through isolation. For contaminated soil that is excavated from the Project Area, off-site disposal would occur.

Isolation involves the construction of a barrier that prevents direct contact with, or migration of, contaminated soil. The use of impermeable barriers such as concrete and asphalt would also prevent percolation of surface water through subsurface soil, thus limiting the potential for contaminants to leach from soil to groundwater. Concrete and asphalt coverage serves as an effective isolation barrier. In-place isolation is a useful method of addressing contaminants such as metals, SVOCs, and PCBs, which are generally immobile. A layer of clean soil fill could be used to construct an isolation barrier in landscaped areas that would not be covered by impervious materials.

The presence of elevated VOC concentrations in subsurface soils would limit the applicability of isolation, since vapors could migrate upward into building structures. Prior to selecting isolation for subsurface soils, soil sampling and laboratory analyses would be performed to assess the VOC concentrations, and the applicability of isolation would be confirmed by the NYSDEC.

To protect workers and the general public during site preparation and construction activities, dust control measures would be undertaken. These include fine sprays of water, mist curtains, and some chemical foams. Tarpaulins can be used to cover stockpiled or staged soils.

Contaminated soil that is excavated during the Proposed Action would be removed from the Project Area and disposed in permitted facilities approved to accept the material. These facilities would either treat the soils so that the contaminants present would become immobile or reduced sufficiently such that the material no longer presents a public health concern, or dispose of them in permitted landfills constructed to contain the contaminants. For example, soil contaminated with petroleum could be treated by an asphalt batching plant. Representative samples of soil would be analyzed by a laboratory prior to being transported off-site, in order to document that they meet the facility's permit requirements. The off-site transport of petroleum-contaminated soils would be performed in accordance with federal, State, and local regulations.

If excavated soil contains contaminants that make it unsuitable for asphalt batching, the soil would be disposed of off-site at a permitted disposal site or landfill. The type of landfill would be determined by the type and concentrations of contaminants present in the soil. Landfill types include both hazardous and non-hazardous facilities, and each facility is permitted to accept only specific types of contaminants. To confirm the type and concentrations of contaminants, representative samples of soil would be analyzed by a laboratory prior to being taken off-site.

Contaminated soil that is disposed of off-site would be transported in accordance with federal, State and local regulations. These regulations pertain to types of vehicles and containers permitted to transport the waste, the preparation and maintenance of manifests that document the type and quantity of waste being transported, and the truck routes that would be used to transport the waste. The vehicles and containers are designed to prevent the release of the waste material while it is being transported (i.e., trucks beds are enclosed with a tight fitting cover, roll-offs are sealed, etc.).

Dust generated by construction activities and/or from excavations would be suppressed by spraying water during dry weather, cleaning vehicles and other equipment prior to leaving the site, placing gravel on areas of exposed soil used for vehicle activities, covering the trucks with a tarp prior to leaving the site, and sequencing construction activities to minimize areas of exposed soil.

c) Spoils Management Plan

Similar to the Soil Management Plan, the Spoils Management Plan would address the handling of spoils generated during construction of the No. 7 Subway Extension and other appropriate project elements. Non-contaminated spoils would be handled in accordance with the methods presented in Chapter 23, "Construction Impacts". Contaminated spoils that are generated during the Proposed Action would be removed from the Project Area and disposed in permitted facilities approved to accept the material. These facilities would either treat the spoils so that the contaminants present would become immobile or reduced sufficiently such that the material no longer presents a public health concern, or dispose of them in permitted landfills constructed to contain the contaminants. Representative samples of spoils would be analyzed by a laboratory prior to being transported off-site, in order to document that they meet the facility's permit requirements. The off-site transport of contaminated spoils would be performed in accordance with federal, State, and local regulations.

Contaminated spoils that are disposed off-site would be transported in accordance with federal, State and local regulations. These regulations pertain to types of vehicles and containers permitted to transport the waste, the preparation and maintenance of manifests that document the type and quantity

of waste being transported, and the truck routes that would be used to transport the waste. The vehicles and containers are designed to prevent the release of the waste material while it is being transported (i.e., trucks beds are enclosed with a tight fitting cover, roll-offs are sealed, etc.).

d) Soil Gas Management Plan

During construction activities, air monitoring, performed in accordance with the HASPs requirements, would be performed to assess the presence of contaminated soil gas. If present, contaminated soil gas (e.g., methane, hydrogen sulfide, VOCs) would be managed in accordance with the HASPs and Soil and Spoils Management Plans to prevent exposure to construction workers and the general public. Management options would include engineering controls and upgrading personal protective equipment used by the construction workers, which would be used separately or in combination, depending on the conditions encountered. Engineering controls would consist of ventilating the work area with exhaust fans. The use of vapor barriers and soil gas venting could also be used to treat contaminated soil gas in areas that would not be excavated. The ventilation exhaust would be treated on-site using contaminant-appropriate equipment (e.g., granulated activated carbon for VOCs) prior to discharging to the atmosphere. The HASPs would include contaminant-specific action levels that would identify conditions that require construction workers to upgrade their respiratory protection equipment. Real time contaminants-specific air monitoring would be performed in conjunction with respiratory protection upgrades to prevent exposure to the general public. As required, permits would be secured for any air treatment facilities.

e) Groundwater Management Plan

The groundwater management plan would provide a description of the methods used to collect, store, and dispose of contaminated water generated during dewatering activities. Additionally, the groundwater management plan would identify the permits required from the DEP and/or the NYSDEC to discharge the water into either the City's sewers or surface waters, respectively. Prior to obtaining DEP or NYSDEC discharge permits, groundwater would be sampled and analyzed to characterize its physical and chemical properties. Depending on the results of the analyses, the type of treatment prior to discharge, if required, would be determined. The type of treatment selected would be determined by the contaminants present in the groundwater. Both NYSDEC and DEP permits require that contaminated sediments (e.g., metals, PAHs PCBs) suspended in groundwater be removed prior to discharge. This would be achieved through the use of settling tanks and the injection of flocculants, causing suspended sediments to settle out of the water. The sediments would be analyzed to determine whether contaminants are present and, depending on the type and concentrations of contaminants, the disposal option that would be selected, as described in the soil management section.

If the groundwater contains VOCs, additional treatment would be performed on-site after the settling process and prior to discharge. The treatment could include agitation or the use of carbon filtration. Agitation extracts VOCs from the water by inducing them to partition into air, and is generally accomplished by forcing air through the water column in the other direction. Once the air passes through the water column, it is collected and filtered with carbon. The VOCs then adsorb to the carbon; and when the filters are spent, they are disposed of in a permitted facility. If this method is utilized, an air discharge permit would be obtained and discharges performed in accordance with the permit requirements (see Chapter 21, "Air Quality"). Alternatively, VOC- or PCB-contaminated groundwater could be filtered through carbon for treatment. This treatment utilizes a sealed container containing carbon, and VOCs and PCBs are removed as the water passes through the carbon.

Prior to implementing any treatment system or discharge of groundwater, samples would be collected and analyzed, a treatment system would be designed, and the information would be included in the NYSDEC or DEP permit applications. Approval from the responsible regulatory agency, in the form of a permit, would be obtained prior to construction activities. Depending on the quantity of water to

be discharged, the permits require sampling on a regular basis to confirm that the treatment is effective. Discharging activities would be performed in accordance with the terms and conditions specified by the permit, including the discharge rate, the sampling frequency, and duration.

f) Petroleum Storage Tank Management Plan

Removal of petroleum storage tanks is regulated by NYSDEC under 6 NYCRR Part 613.9, which requires that tanks no longer in use be closed in place or removed. Contaminated soils surrounding the tanks or petroleum floating on the water table must also be removed prior to construction. If suspected petroleum-contaminated soil is encountered, a program of soil sample collection would be employed to determine the extent and level of the contamination. The affected material would then be disposed of or stored on-site as appropriate (according to stockpiles as indicated in the CEPP and NYSDEC regulations). Depending upon the concentration of contaminants present within the material, as determined by laboratory analytical sample results, the soil would be stockpiled in categories (i.e., potentially contaminated and non-hazardous materials). The CEPP would provide explicit details as to the appropriate stockpiling and handling procedures for each type of soil class determined on-site.

g) Asbestos-Containing Building Materials Management Plan

Building demolition/renovation and tunneling into Serpentine rock have the potential to disturb asbestos material. Proper removal, disposal, and handling of asbestos material are required under State of New York Article 30-Labor Law, Asbestos or Products Containing Asbestos Licensing, 12 NYCRR-Part 56 Asbestos Regulations (i.e., ICR #56), and the requirements of DEP Title 15. A number of engineering controls (e.g., dust control) can minimize asbestos exposure and would be implemented prior to demolition/renovation and/or tunneling activities.

h) Lead-Based Paint Management Plan

Surfaces coated with LBP require proper abatement of the lead paint prior to the disturbance that would generate lead-containing dust or vapors (lead vapors could be generated through the heating of materials that are coated with LBP, such as structural steel). During demolition, if lead-coated surfaces are present, an exposure assessment would be performed to determine whether lead exposure would occur during the demolition. Wet methods to control dust and air monitoring would be implemented during demolition activities.

i) PCB-Containing Equipment Management Plan

Suspected PCB-containing equipment would be surveyed and evaluated prior to building demolition or utility relocation. PCB-containing equipment that would be disturbed by the work would be removed and disposed of in accordance with applicable Federal, State, and local regulations. ❖