

A. INTRODUCTION

This chapter assesses the potential for the presence of hazardous materials on the development sites; the potential for exposure to hazardous materials during construction and operation of the Proposed Project; and specific measures that would be employed to protect public health, worker safety, and the environment. A “hazardous material” is generally defined as any substance that poses a threat to human health or the environment. It is often used interchangeably with “contaminated material,” but should not be confused with the term “hazardous waste,” which is a regulatory term.¹

As described in the 2020 *City Environmental Quality Review (CEQR) Technical Manual*, the goal of a hazardous materials assessment is to determine whether a proposed project would potentially increase exposure of hazardous materials to people or the environment, or whether the increased exposure would lead to significant adverse public health impacts or environmental damage. The objective of the hazardous materials assessment is to determine if the development sites may have been adversely affected by current or historical uses on or adjacent to the sites, such that the property would require remedial or environmental control measures. As described in Chapter 1, “Project Description,” the Proposed Project is a comprehensive redevelopment initiative to create a revitalized, transit-oriented commercial district centered around New York’s Penn Station that would also introduce much-needed public transportation and public realm improvements to the area, and support the reconstruction and expansion of Penn Station. The Project Area is generally bounded by Sixth and Ninth Avenues and West 30th and West 34th Streets, and is located in Midtown Manhattan. The Proposed Project would introduce much-needed public transportation and public realm improvements to the area and facilitate high-density redevelopment to create a cohesive, transit-oriented commercial district. The Proposed Project would include approximately 20 million square feet (sf) of new primarily office development, as well as retail and hotel space, on eight development sites. For analysis purposes, this Draft Environmental Impact Statement (DEIS) assumes an interim analysis year (Phase 1) of 2028 and a final analysis year (Phase 2) of 2038.

The eight development sites have a history of residential, educational, institutional, retail, rail, light industrial/manufacturing, storage, and commercial uses. Based on the sites’ history, contaminants would be expected to include suspect asbestos-containing materials (ACM), lead-based paint (LBP), and/or equipment or lighting fixtures containing polychlorinated biphenyls (PCBs) in buildings, as well as subsurface contamination (fill, soil, soil gas, and/or groundwater). Migration of contaminants from off-site sources onto the development sites is also possible.

¹ “Hazardous waste” is defined in both the U.S. Environmental Protection Agency (EPA) regulations (40 CFR Part 261) and New York State regulations (6 NYCRR Part 371) and refers to a subset of solid wastes that are either specific wastes listed in the regulations (listed wastes) or solid wastes possessing the characteristic of ignitability, reactivity, corrosivity or toxicity (characteristic wastes).

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The Proposed Project would involve the demolition of the existing structures and excavation, disturbance, and removal for off-site disposal of much of the existing fill and soil. Dewatering is anticipated as part of the construction of planned below-grade structures. The presence of hazardous materials threatens human health or the environment only when exposure to those materials can occur. The most likely route of human exposure is through breathing volatile and semi-volatile compounds or particulate-laden air released during demolition, excavation, and construction activities. Following completion of the Proposed Project, the principal potential pathway of concern would be the intrusion of vapors into buildings from any volatile contamination remaining in the subsurface.

PRINCIPAL CONCLUSIONS

The Proposed Project would not result in significant adverse impacts related to hazardous materials. As described below, a hazardous materials assessment was performed to identify the potential for contamination in the buildings and the subsurface, based on past and current use. Potential contamination may be present in both the subsurface (related primarily to localized former gas stations, historic fill, current and abandoned heating oil underground storage tanks [USTs], and historical operations) and inside buildings (primarily related to asbestos, LBP, and PCBs). With the implementation of a variety of standard precautionary measures (e.g., identification of hazardous materials as part of Phase I and Phase II investigations,² and handling/disposal of hazardous materials in accordance with applicable regulations and under the direction of material management plans and health and safety plans), no significant adverse impacts related to hazardous materials would be expected to occur as a result of construction of the Proposed Project. Following construction of the Proposed Project with the proposed measures, there would be no further potential for significant adverse impacts.

B. METHODOLOGY

HAZARDOUS MATERIALS SCREENING SURVEYS

Hazardous Materials Screening (HMS) surveys for Sites 1 through 8 were conducted to assess the potential for contaminated materials in buildings or the subsurface from past or present uses. The HMS surveys included a reconnaissance of each development site from public rights-of-way, as well as a review of historic Sanborn fire insurance maps and regulatory records for the eight development sites and surrounding area. Databases reviewed included:

- New York State Department of Environmental Conservation (DEC) Spills (including both open and closed petroleum Spills cases identified by DEC);
- DEC LTANKS (leaking petroleum storage tank incidents for either USTs or aboveground storage tanks [ASTs] caused by tank test failures or tank overfills, reported after April 1, 1986);
- Records showing current and historical dry cleaners;
- Records showing current and historical auto service facilities;

² Phase I Environmental Site Assessments (ESAs) and any subsequent subsurface investigations (Phase II Environmental Site Investigations), which may be required based on the conclusions of the Phase I ESA, as well as any necessary remedial plans would be required by ESD and prepared prior to site development.

- DEC UST and AST databases; and
- E-designations and Restrictive Declarations.

Each development site was assessed to determine whether the potential for contamination exists based on current or historical usage, regulatory listings, and/or visual observation. Factors that were considered when making these determinations included the likelihood and probable severity of the potential hazardous materials conditions, as well as physical, geological, or hydrogeological (groundwater) conditions, where known, that may have affected the migration of hazardous materials. The assessments were also undertaken to determine whether additional investigations are necessary and whether any remedial or environmental control measures would be required on a development site for the Proposed Project to avoid the potential for impacts pertaining to hazardous materials.

POTENTIAL CONTAMINANTS OF CONCERN

Based on the HMS surveys, a variety of potential contaminants of concern were identified. Soil and groundwater could have become contaminated as a result of past or current activities on the eight development sites or on adjacent areas. Many industrial activities use, store, or generate contaminated materials that can be spilled, dumped, or buried nearby. Other activities common in mixed-use neighborhoods—such as gas stations and dry cleaners—can also result in contamination due to improper management of raw product and/or waste materials, or inadvertent spills.

Subsurface soil and groundwater contamination may remain undetected for many years without posing a threat to nearby workers, residents, passersby, or other receptors. Excavation, earthmoving, dewatering, and other construction activities can, however, expose the contaminants, provide a potential pathway of exposure, and, if such contaminants are not properly managed, introduce potential risk to construction workers and others nearby.

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

Related transit improvements occurring within subway and railroad facilities, including tunnels and along tracks, may involve disturbing contaminated materials requiring special disposal, such as old railroad ties and contaminated ballast.

Based on the types of contaminants that are typically found in New York City—including those associated with rail activities—some of the potential contaminants of concern are described below. The list provides a summary of potential categories of contaminants and is not a comprehensive list of all contaminants that may be encountered:

- ***Volatile organic compounds (VOCs):*** These include aromatic compounds—such as benzene, toluene, ethylbenzene, xylene (BTEX), and methyl tertiary butyl ether (MTBE), which are found in petroleum products (especially gasoline)—and chlorinated compounds, such as tetrachloroethene (also known as perchloroethylene, PCE, or “perc”) and trichloroethene (TCE), which are common ingredients in solvents, degreasers, and cleansers. VOCs represent the greatest potential for contamination since, in addition to soil and groundwater contamination, they can generate organic vapors.
- ***Semi-volatile organic compounds (SVOCs):*** The most common SVOCs in urban areas are polycyclic aromatic hydrocarbons (PAHs), which are constituents of partially combusted coal- or petroleum-derived products, such as coal ash and fuel oil. PAHs are commonly found in New York City urban fill material, which may underlie portions or all of the project site. In

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addition, petroleum-related SVOCs could be present and would be associated with buried tanks currently or formerly located on Sites 1 through 8.

- ***Polychlorinated biphenyls (PCBs):*** Commonly used as a dielectric fluid in transformers, some underground, high-voltage electric pipelines, and hydraulically operated machinery, PCBs are of special concern at electrical transformer yards and rail yard/train maintenance locations where leakage into soil may have occurred. PCBs and/or PCB-containing materials were once widely used in manufacturing and industrial applications (e.g., hydraulic lifts, transformers, and plastics manufacturing). PCBs tend to travel only short distances in soil, except in unusual circumstances (e.g., large spills of PCB-containing oils over many years). Additionally, PCB-containing hydraulic equipment, electrical equipment, and/or fluorescent light ballasts may be present in the buildings on Sites 1 through 8.
- ***Pesticides, herbicides, and rodenticides:*** These are commonly used to control rodents and/or insects and vegetation in vacant structures or in vegetated lots. They may be used in rail yards, particularly along the tracks.
- ***Metals (including lead, arsenic, cadmium, chromium, and mercury):*** Metals are often used in smelters, foundries, and metal works and are found as components in paint, ink, petroleum products, and coal ash. Arsenic is commonly present in the soil along a railroad right-of-way as a result of old railroad ties dipped in an arsenic solution and arsenic-laced slag used as railroad bed fill. These metals tend not to migrate far in soil; therefore, they would be of greatest concern at the sites where they were generated, used, or disposed. Metals at levels above natural background levels are frequently present in fill material throughout the New York metropolitan area.
- ***Fuel oil and gasoline from storage tanks:*** Numerous buildings within the eight development sites currently have, or once had, known ASTs and/or USTs for fuels, including heating oil and gasoline. Additional undocumented tanks may have been present in some buildings. Some of these tanks may have been removed, and others, although no longer in use, may remain buried in place. Fueling facilities are also frequently associated with rail yards. Some of the tanks are known to have leaked, and others may have leaked despite no record of a spill to date. Some of the reported spills were cleaned up in accordance with state regulations, but others were not because cleanup, which can take several years, is ongoing. If any unreported spills are present, those spills may be discovered in the course of site investigation or redevelopment.
- ***Fill materials of unknown origin:*** In the past, waste materials, including coal and incinerator ash, demolition debris, and industrial wastes, were commonly used as fill in urban areas. Even fill material consisting primarily of soil may exhibit elevated levels of PAHs, metals, PCBs, and other contaminants. Such materials are potentially present throughout Sites 1 through 8.
- ***Asbestos:*** Asbestos is a common component of building materials, especially insulation, fireproofing, tile flooring, plaster, sheetrock, tile ceiling, mastic, and roofing materials. In addition to materials within existing structures, subsurface utility lines may be coated with asbestos or encased in “transite,” an ACM. Asbestos was widely used before 1980. Because of the age of many of the buildings on Sites 1 through 8, ACM are almost certainly present.
- ***Lead-based paint (LBP):*** The use of LBP in New York City residential buildings was banned in 1960. Its use in other buildings and outdoors was severely restricted by the Consumer Products Safety Commission in 1977. LBP that is released as dust (or as a fume if heated) is potentially hazardous, especially to children. Older buildings on the eight development sites are likely to contain LBP.

Table 10-1 shows the results of the HMS surveys by block and lot. It also details on-site issues in addition to those pertaining to historic fill, asbestos, lead, and PCBs.

**Table 10-1
Existing Uses and Environmental Conditions by Block and Lot**

Site	Block	Lots	Site History/Uses	HMS Survey Findings
1	754	34-41, 44, 51, 63	In 1890, Site 1 was developed with a mix of residential and commercial uses. By 1930 more commercial buildings were located on-site, as was a heating plant (which was located on current Lot 63 and demolished by 1950) for the north-adjacent post office. In the 1950s, buildings on Site 1 had been converted for new uses including a hotel, automobile parking garage, and a restaurant. By 1976 the parking garage had expanded, and a school was constructed on this development site. Currently, Site 1 has mixed-use commercial and residential buildings and includes a hotel, parking lot and restaurants.	Apparent groundwater monitoring wells located on Lot 44 and in the sidewalk on West 30th Street, just south of Lot 36 (located near the fill port indicated below). Based on the review of database results, the purpose of the monitoring wells is unknown. Fill ports noted on West 30th Street sidewalk in front of Lot 36 and on West 31st Street sidewalk in front of off-site Lot 68 (located west of Site 1 on the same block). NYSDEC Spill #1201268 associated with off-site Lot 68 for a No. 2 fuel oil spill, reported on May 8, 2012 and closed on May 11, 2012; Heating plant (Lot 63) in 1930, demolished by 1950; EDR Hist Cleaners: P & L Cleaners (334 West 31st Street -- western portion of Lot 51) in 1988; EDR Hist Auto: SMG Food Market Inc. (305 West 30th Street -- Lot 35) in 2014; Underground railroad tracks north of Site 1, associated with Penn Station, since prior to 1911. NYC E-designation for hazardous materials, noise, and air quality: 415 Eighth Avenue and 320 and 340 West 30th Street (Lots 44, 51, and 63, respectively) – E-137.
2	780	1, 2, 3, 5, 6, 7, 9, 10, 13, 15, 17, 19, 26, 36, 45, 60, 70, 71, 73, 74, 75, and 76	In the late 1800s, Site 2 was developed with residential and commercial buildings. By 1911, the Penn Station Service Building was shown on Lot 60. This building contains utility systems and support space for Penn Station, and historically included emergency generators and is still present today. By 1930, larger commercial and manufacturing structures and several small factories had been developed on Site 2, with some smaller stores and residential buildings still remaining. One large building constructed by 1930 on Lot 19 was in use as the American Railway Express Company freight shed and was converted to a parking garage by 1950. By 1976 the parking garage was expanded and included eight gasoline USTs, and Site 2 was developed with mixed commercial and residential uses. Currently, the buildings are mixed-use commercial and residential and include office and apartment buildings with first-floor retail. A large parking lot is located on Lot 19.	Fill ports noted on Eighth Avenue sidewalk in front of Lot 2 (registered active 2,000-gallon No. 2 fuel oil UST, NYSDEC Petroleum Bulk Storage (PBS) #2-242772) and on West 30th Street sidewalk in front of Lots 7 and 10 (registered active 5,000-gallon No. 4 or No. 6 fuel oil AST, PBS #2-606032), Lot 17 (registered active 1,500-gallon No. 2 fuel oil AST and closed-and-removed 4,000-gallon No. No. 6 fuel oil AST, PBS #2-085189), and Lots 36 and 71 (registered active 5,000-gallon No. 2 fuel AST, PBS #2-309664, and five 4,000-gallon gasoline USTs registered as "converted to non-regulated use", PBS #2-304883). Abandoned fill ports noted on Eighth Avenue sidewalk in front of Lot 1, and on West 30th Street sidewalk in front of Lots 10, 13, and 15; Penn Station Service Building, which historically included emergency generators (possibly associated with petroleum storage). This building was listed in the TANKS database as the Penn Station Power Plant at 246 West 31st Street (Lot 60) (PBS #2-605742), with no details provided. Several factories on Site 2 (1930-2005); Freight shed on Lot 19 in 1930, converted to a parking garage by 1950. Gasoline USTs shown in parking garage in 1976-2005; NY SPILLS database listing for a spill of an unknown quantity of PCE, which was reported on December 18, 1995 and closed on October 10, 1997 due to a lack of information: 259 West 30th Street (Spill No. 9511762); NYC E-designation for hazardous materials: 225 West 30th Street (Lot 19) and for noise (Lots 15, 17, 19, 26, 45 and 60) – E-137; Underground railroad tracks north of the Site, associated with Penn Station, since prior to 1911. Adjacent site (224 West 30th Street, south of Site 2) listed in EDR Hist Cleaners: Cleaning Specialists Inc. (1999); Adjacent site (208 West 30th Street, south of Site 2) listed in EDR Hist Cleaners: TSAPANDOUS & SKODRAS (1980).
3	806	1, 3, 6, 9, 69, and 76	Site 3 was developed for commercial and residential uses in the late 1800s. In 1930, larger retail stores had been built, three 500-gallon fuel oil USTs were located southwest of Site 3 at 204 W 30th Street, and three 40,000-gallon fuel tanks were located north of Site 3 at 353 Seventh Avenue/167 West 31st Street. By 1950, larger buildings had been constructed on Site 3, replacing smaller structures. In 1976, additional buildings were demolished and replaced with parking garages.	Fuel oil USTs southwest of Site 3, at 204 West 30th Street (1930); Fuel oil tanks north of Site 3, at 353 Seventh Avenue/167 West 31st Street (1930); NY SPILLS database listing for on-site spill involving 1,000 gallons of No. 6 fuel oil: Southgate Tower Hotel, 371 Seventh Avenue (Spill #9809289, reported on October 26, 1998 and closed on December 8, 1998). Listing closed on 12/8/1998 after the spill was cleaned up and the tank passed a tightness test; DRYCLEANERS listing (2-6205-01594) at an adjacent site to the south (160 West 30th Street); EDR Hist Cleaners: Penn Plaza Cleaners Inc. (2014) - adjacent site (158 West 30th Street, south of the Site); Fuel oil fill port and vent on the sidewalk on the north side of West 30th Street on Lot 76 (registered 5,000-gallon No. 2 fuel oil AST, PBS #2-336955). Two abandoned/filled fuel oil fill ports on the sidewalk on the south side of West 31st Street, next to parking garage entrance (three registered No. 4 and No. 6 fuel oil ASTs, PBS #2-364975).

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Table 10-1 (cont'd)

Existing Uses and Environmental Conditions by Block and Lot

Site	Block	Lots	Site History/Uses	HMS Survey Findings
4	783	1, and portion of 70	By 1890, Site 4 was developed with residential and commercial structures. By 1930, there was an auto yard (apparent parking lot) located on the southwestern portion of Site 4 on Lot 70 at 259 West 33rd Street with two 550-gallon gasoline USTs, and several small factories were shown on Site 4. Adjoining Site 4 to the east were a bus terminal and gasoline station located on the central (off-site) portion of Lot 70 at 242-246 West 34th Street with two 550-gallon gasoline USTs. By 1950, the auto yard on-site was redeveloped as a filling station. By 1976, all of the buildings on Site 4 were demolished, the former on- and off-site USTs were no longer shown on Lot 70 on historical maps, and both Site 3 and the off-site portion of Lot 70 were redeveloped as a bank with one large building covering most of the block (One Penn Plaza).	Two 550-gallon gasoline USTs on-site at 259 West 33rd Street on Lot 70 (1930); Two 550-gallon gasoline USTs adjoining east of Site 3 at 242-246 West 34th Street on Lot 70 (1930); On-site small factories (1930-1950); One Penn Plaza, potentially on-site, listed as EDR Hist Auto: Beach 66 LP (2004); NY SPILLS: Spill No. 0804517 reported on July 21, 2008 northern-adjacent to Site 3 on West 34th Street, 100 feet east of Eighth Ave, for an unknown petroleum release, and closed on August 12, 2008 after contaminated soil was properly disposed of; Adjacent site (304-328 West 34th Street, northwest of Site 3) NY SPILLS listing: Spill No. 9905296 for No. 2 fuel oil, reported on August 2, 1999 and closed on April 5, 2000 after contaminated soil and tanks were removed.
5	783	34, 48, and portion of 70	By 1890, Site 5 was developed for commercial and residential uses. An iron works facility was located in the southeastern portion of the site on Lot 70 and was demolished by 1899. In 1911 there was machinery storage on Lot 70 and underground railroad tracks were located southeast of Site 5. By 1930, the majority of Site 5 was developed for commercial use, as well as several small factories, and the site immediately west of Site 5 on the off-site portion of Lot 70 was a bus terminal with two 550-gallon gasoline USTs. By 1976, USTs were no longer shown west of Site 5 on historical maps, the buildings on Site 5 had been replaced with the large One Penn Plaza building covering most of the block including Site 5 and the off-site portion of Lot 70.	Iron works facility on the on-site portion of Lot 70 (1890); Machinery storage on the on-site portion of Lot 70 (1911); On-site small factories (1930-1950); Underground railroad tracks southeast of Site 5; Two 550-gallon gasoline USTs adjacent to the Site on the off-site portion of Lot 70 (1930); Adjacent site (205 West 34th Street, north of Site) EDR Hist Auto: Shell Transportation (2004); Adjacent to the northeast of Site 5: multiple closed NY SPILLS listings, historic rail use, and petroleum and chemical use due to railroad operations associated with Penn Station.
6	809	1, 3, 4, 5, 8, 16, 17, 69, 73, 70, 80, and 82	In the late 1800s, Site 6 was developed with a mix of commercial and residential uses. By 1930, many buildings on the site had been demolished and replaced with larger commercial buildings, retail stores, and small factories.	Fuel oil fill port and vent on Lot 8 on the north side of West 30th Street sidewalk; NY SPILLS database listing for unknown amount of spilled No. 6 fuel oil: 435 Seventh Avenue, Lot 80 (Spill #0111768, reported on February 5, 2002 and closed on January 23, 2004); Small factories on Site 6 (1930-1996); Adjacent to the northwest of Site: multiple closed NY SPILLS listings, historical rail use, and petroleum and chemical use due to railroad operations associated with Penn Station;
7	808	7501	Site 7 was developed for mixed residential and commercial uses by 1890 with a cabinet factory located at 159 West 32nd Street. By 1911, buildings were demolished and underground railroad tracks were developed on-site from the Pennsylvania New York & Long Island Railroad Station. The remaining buildings were vacant, or occupied by dwellings, stores, offices, or small factories. Adjoining Site 7 to the east, a large building occupied by the Gimbel Bros Department Store was constructed, which contained six large boilers in its southern portion. By 1917, the buildings on the entire Site 7 were demolished and replaced by the Pennsylvania Hotel. By 1930, the buildings located at 399 Seventh Avenue/160 West 32nd Street, south of Site 7, were demolished and replaced with a large building containing three fuel oil tanks of 28,000 gallons total capacity.	Small factories on Site 4 (1890-1911); On-site underground railroad tracks: railroad activity (1911); NYC Restrictive Declaration for hazardous materials and noise: 401 Seventh Avenue (Lot 1001 ³) – R-194: CEQR #09DCP019M; Three fuel oil tanks south of Site 4 (1930).
8	808	40	By 1890, Site 8 was developed with a mix of residential and commercial buildings. By 1911 the buildings on Site 8 were demolished and replaced with a large building housing the Gimbel Bros. Department Store, with six large boilers in its southern portion, and a tank house (apparent location of a water tank) on its roof. By 1930, buildings southwest of Site 8 had been demolished and replaced with a large building containing three fuel oil tanks of 28,000 gallons total capacity, located at 399 Seventh Avenue/160 West 32nd Street. In 1950, a subway station was constructed south of Site 8.	NYC Restrictive Declaration for hazardous materials and noise: 100 West 33rd Street (Lot 40) – R-194: CEQR #09DCP019M; Three fuel oil tanks southwest of Site 8 (1930); Subway station south of Site 8: railroad activity (1950).

³ Lot 1001 and Lot 7501 refer to the same lot.

C. EXISTING CONDITIONS

TOPOGRAPHY, GEOLOGY, AND GROUNDWATER

According to the United States Geological Survey (USGS) 2014 Central Park, New York Topographic Quadrangle, the surface topography of the Project Area varies from 26 to 38 feet above mean sea level (ft amsl) at West 30th Street and Ninth Avenue and West 34th Street and Ninth Avenue, respectively. From West 30th Street and Ninth Avenue to West 30th Street and Sixth Avenue, the topography ranges from 26 to 32 ft amsl. The Project Area generally slopes gently down to the west towards the Hudson River, approximately 0.5 mile away. According to the United States Department of Agriculture (USDA) Web Soil Survey, soil at the site is classified as urban land with slight (0 to 3 percent) slopes.

According to USGS geological maps of New York, the Project Area is located over Cambrian/Ordovician metamorphic rocks (Iapetus Terrane). According to the New York State Department of Transportation (NYSDOT) Geotechnical Design Manual, Chapter 3 – Geology of New York State, the site is located in the Manhattan Prong section of the Hudson Highlands, which covers a portion of Staten Island, all of Manhattan Island, a small portion of western Long Island, and most of Westchester County, New York. Based on USGS mapping, bedrock is anticipated to be approximately 10 to 30 feet below ground surface (ft bgs).

According to the USGS National Water Information System, the depth to groundwater in the Project Area fluctuates seasonally, generally ranging from 13 to 14 feet below ground surface. Based on the surrounding topography and proximity of the Hudson River, groundwater likely flows west towards the Hudson River. The actual groundwater depth and flow direction beneath the Project Area may be affected by bedrock geology, subway tunnels, other subsurface obstructions (such as basements), and other factors. Groundwater beneath Manhattan is not used as a source of potable water.

SITE HISTORY AND CURRENT CONDITIONS SUMMARY

Site history and current usage information pertaining to known and potential environmental conditions gathered from the HMS surveys are organized by development site and provided in **Table 10-1**. Such conditions would have resulted from past manufacturing and industrial facilities, garages, and automotive-related sites, rail and freight operations, and a history of reported petroleum use and releases in the area. The terms of the General Project Plan (GPP) that would be put in place by Empire State Development (ESD) would require the performance of a Phase II Environmental Site Investigations (ESI) to gather site-specific information on potential contaminants in soil, soil vapor and/or groundwater prior to excavation on each development site.

The discussion below summarizes information gathered during the HMS surveys (which were non-intrusive and did not include sample collection) and experience with similar sites in the Project Area and New York City in general, and are separated according to type (i.e., building materials, soil, groundwater, and soil gas). The summaries are applicable to all development sites.

No subsurface testing has been performed as part of the environmental assessment. Subsurface conditions beneath the eight development sites may have been locally affected by historic fill, as well as by historic manufacturing and industrial activities, and/or releases related to petroleum storage tanks or associated utility lines. In addition, contaminant migration from environmental

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conditions in the surrounding area could affect the subsurface condition beneath the eight development sites, and/or adjacent streets and sidewalks (tanks are sometimes located beneath sidewalks and fill lines for tanks in or under buildings are frequently located in the sidewalk).

BUILDINGS

Due to the age of the existing structures, the presence of suspect LBP, ACM, and/or PCB-containing fluorescent light ballasts and electrical and hydraulic equipment is likely.

SOIL

Based on the development history of New York City and the eight development sites, as well as local knowledge of similar properties in the vicinity, soil on Sites 1 through 8 is expected to be made up of historic fill immediately below buildings or paving surfaces. The depth of the fill layer is expected to range from approximately 10 to 30 ft bgs. Historic fill, which occurs throughout New York City, often contains levels of metals (which may include arsenic and lead), SVOCs, and/or pesticides above the guidance values for surface soils at residential sites.

GROUNDWATER

Groundwater in New York City is not used as drinking water and generally does not meet potable water standards. Based on the findings of the HMS surveys, groundwater in the area of the eight development sites may be contaminated with metals and other historic fill-related compounds, such as SVOCs. Based on a history of petroleum storage, railroad operations, dry cleaning operations, and numerous closed DEC Spills cases, VOCs may be present in groundwater on Sites 1 through 8. It is also not uncommon to find PCBs, pesticides, and herbicides in urban groundwater. In addition, it may be necessary to collect groundwater samples during the site-specific Phase II ESIs.

SOIL GAS

Due to the industrial and commercial history of the area, including significant petroleum storage, history of spills, long history of rail use, and current and former dry cleaners, there is a likely presence of VOCs in soil gas beneath and around the eight development sites, which is not uncommon for urban areas.

The primary concerns for this project related to potential soil gas contaminants are the potential for exposure to future occupants of the redeveloped sites. The preventive measures that would be employed to address these concerns are discussed later in the chapter.

D. FUTURE WITHOUT THE PROPOSED PROJECT

2028

In the 2028 No Action condition, development will occur on Site 7. Development on Sites 1 through 6 and 8 is not anticipated by 2028, and it is assumed that land uses on these sites will remain unchanged from existing conditions. New development on Site 7 will result in the demolition of the existing Hotel Pennsylvania and construction of an approximately 1.6-million-gsf building containing office and retail use. As such, any construction involving soil disturbance could potentially create or increase pathways for human exposure to any subsurface hazardous materials present.

As Site 7 is expected to undergo as-of-right redevelopment under the No Action condition, there is the potential for exposure of construction workers and nearby residents to hazardous material contamination during demolition of the existing structures, excavation, and construction of the new buildings. Although Site 7 is subject to a Restrictive Declaration (ACRIS document ID: 2010090101227001 dated September 3, 2010) for hazardous materials, this Declaration does not apply to an as-of-right development. Thus, it is anticipated that as-of-right development of Site 7 would not be subject to regulation by the New York City Office of Environmental Remediation (OER), and would not require the associated environmental controls such as conducting a Phase II subsurface investigation and preparing a remedial action plan prior to development. However, the local, state, and federal regulatory requirements pertaining to any identified petroleum tanks and/or spills, requirements for disturbance and handling of suspect LBP and ACMs, and requirements for off-site disposal of soil/fill would need to be followed. .

2038

In the No Action condition in 2038, Sites 4 and 5 will be redeveloped (in addition to Site 7, which is assumed to have been redeveloped in 2028). Site 4 will be redeveloped with a 1.1-million-gsf mixed-use building with hotel, residential, and retail uses, and Site 5 will be redeveloped with an approximately 250,000-gsf office building with ground-floor retail space.

As Sites 4 and 5 are expected to undergo redevelopment under the No Action condition, there is the potential for exposure of construction workers and nearby residents to hazardous material contamination during demolition of the existing structures, excavation, and construction of the new buildings. It is expected that any development on Site 4, which would occur in accordance with previous approvals through the Moynihan Station Civic and Land Use Improvement Project GPP, would be subject to the pre-construction surveys and Health and Safety Plans for demolition and construction specified in the SEQRA Findings Statement for that project. In the No Action condition, Site 5 would not be subject to these requirements. Since no institutional controls (e.g., E-designations or Restrictive Declarations that require the owner of a property to assess potential hazardous materials impacts prior to construction) currently exist on Site 5, such disturbance would not necessarily be conducted in accordance with the procedures (e.g., testing before commencing excavation and implementing health and safety plans during construction) described in the following section. However, the local, state, and federal regulatory requirements pertaining to any identified petroleum tanks and/or spills, requirements for disturbance and handling of suspect LBP and ACMs, and requirements for off-site disposal of soil/fill would need to be followed. As such, without the Proposed Project, the amount of soil disturbance would be less, but potentially the controls on its performance would not be as stringent as in the future with the Proposed Project, as described below.

E. FUTURE WITH THE PROPOSED PROJECT

2028

By 2028, the interim analysis year, it is assumed that the proposed expansion of Penn Station on Block 780 (Site 2), Block 808 (Site 7), and portions of Blocks 754 (Site 1) and 806 (Site 3) would be constructed, and the tracks and train platforms would be in use. In addition, it is assumed that Site 7 would be developed with a mix of office and retail space. New subway entrances and a below-grade east–west corridor beneath West 33rd Street would be in place, connecting the Seventh Avenue Line/34th Street Station with the Herald Square Station at Sixth Avenue.

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Excavation for the Proposed Project is anticipated to extend to approximately 53 to 62 ft bgs on Sites 1, 2, and 3. Site 7 may require limited excavation into bedrock; no major soil excavation is proposed for the site, as the current building has a basement which extends to the proposed redevelopment depth. As noted above, Sites 1 and 2 are subject to E-designations for hazardous materials, and Site 7 is subject to a Restrictive Declaration. Since the With Action development on Site 7 would not be as-of-right, according to the terms of the Restrictive Declaration, development on this site would be subject to environmental controls, to be implemented under OER oversight. E-designations and Restrictive Declarations are institutional mechanisms that require a developer to obtain approval from OER for the issuance of building permits, including demolition permits, where contamination is known or suspected. While Site 3 is not subject to institutional controls, ESD would require commitments through project documents with the developer to require the performance of a Phase II ESI, and any necessary remediation as part of design, construction, and operation of the new development. Construction of the Proposed Project would involve both demolition of existing structures (which are suspected to contain LBP, ACM, and PCB-containing electrical components) and a variety of earthmoving/excavating activities that would potentially encounter contamination within fill and soil.

Project transit improvements, which include the potential expansion of Penn Station, as well as new and expanded subway entrances and below-grade passageways, have a similar potential to disturb hazardous substances in existing structures and expose unforeseen contamination in excavated soil and historic fill. Dewatering is anticipated to be required, potentially of contaminated groundwater, to facilitate excavation for station expansion, platform improvements, and basements. In addition to the measures proposed below intended to mitigate the potential exposure and spread of such contamination, MTA has its own protocols to protect construction workers and the surrounding community.

The presence of hazardous materials threatens human health or the environment only when exposure to those materials occurs, and even then a health risk requires both a complete exposure pathway to the contaminants and a sufficient dose to produce adverse health effects. As discussed below, in order to prevent such exposure pathways and doses, the Proposed Project would include appropriate health and safety and investigative/remedial measures (conducted in compliance with all applicable laws and regulations and conforming to appropriate engineering practice) that would precede or govern both demolition and soil disturbance activities.

2038

By 2038, it is assumed that all components of the Proposed Project would be completed and fully operational, including the commercial developments on Sites 1 through 8, the expansion of Penn Station and other Penn Station improvements, and all public transportation and public realm improvements. Sites 1, 2, and 8 have E-designations or Restrictive Declarations for hazardous materials.

Excavation for the proposed developments is anticipated to extend to approximately 53 to 62 ft bgs on Sites 1, 2, and 3; 24 ft bgs on Site 4; and 36 ft bgs on Sites 5 and 6. Site 8 may require limited excavation into bedrock; no major soil excavation is proposed for Site 8, as the current buildings have basements which extend to the proposed redevelopment depths.

As described above for the With Action condition in 2028, construction of the Proposed Project would involve both demolition of existing structures (which are suspected to contain LBP, ACM, and PCB-containing electrical components) and a variety of earthmoving/excavating activities that

would potentially encounter contamination within fill and soil. Dewatering is anticipated to be required to facilitate excavation for station expansion, platform improvements, and basements.

The presence of hazardous materials threatens human health or the environment only when exposure to those materials occurs, and even then a health risk requires both a complete exposure pathway to the contaminants and a sufficient dose to produce adverse health effects. In order to prevent such exposure pathways and doses, the Proposed Project would include appropriate health and safety and investigative/remedial measures (conducted in compliance with all applicable laws and regulations and conforming to appropriate engineering practice) that would precede or govern both demolition and soil disturbance activities.

F. PROJECT MEASURES TO PRECLUDE IMPACTS

In order to prevent exposure pathways, the Proposed Project would include appropriate health and safety and investigative/remedial measures (conducted in compliance with all applicable laws and regulations and conforming to appropriate engineering practice) that would precede or govern both demolition and soil disturbance activities. ESD, and with respect to proposed Penn Station work, MTA, NJT, and/or Amtrak, would require the developers and/or contractors to comply with all applicable laws and regulations through project documents. These measures would include the following:

- Prior to demolition of existing buildings, investigations would be performed to determine whether ACM is present. If so, it would be removed, handled and disposed of in accordance with federal, New York State, and New York City requirements. Appropriate engineering controls (e.g., wetting and other dust control measures) to minimize asbestos exposure would be implemented prior to and throughout demolition/reconstruction.
- Any activities with the potential to disturb lead-based paint would be performed in accordance with applicable requirements (including federal OSHA regulation 29 CFR 1926.62 - Lead Exposure in Construction).
- Suspected PCB-containing equipment (e.g., transformers, electrical feeder cables, hydraulic equipment, and fluorescent light ballasts) 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 and local regulations. Under those regulations, unless suspected PCB-containing equipment is labeled to be “non-PCB,” it must be tested or assumed to be PCB-containing and disposed of at properly licensed facilities.

In addition, ESD would include in the project documents with developers provisions requiring implementation of the Proposed Project:

- Performance of a pre-development Phase I ESA and Phase II ESI at each development site to characterize subsurface conditions prior to project excavation pursuant to a scope approved by the federal, state, or City agency exercising jurisdiction over environmental conditions at the site pursuant to applicable law or—if no such agency is exercising such jurisdiction—pursuant to a scope approved by ESD. The results of such investigations would be submitted to such agency or ESD, which may require additional investigation, as appropriate.
- Soil gas sampling would be conducted during the Phase II ESIs to determine vapor mitigation measures needed (e.g., vapor barrier installation beneath new foundations) during construction and as part of redevelopment plans.

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- Development of Remedial Action Plans (RAPs) and Construction Health and Safety Plans (CHASPs) for site remediation and excavation would include detailed procedures for managing both known contamination (e.g., tank removal and soil and groundwater remediation) and any unexpectedly encountered contamination. The site-specific RAPs would address procedures for soil stockpiling, testing, loading, transporting (including truck routes), and properly disposing of all excavated material. The CHASPs would include procedures for community air monitoring for dust and vapors, dust suppression protocols, and environmental monitoring to ensure that construction is conducted in a manner protective of workers, the public, and the environment. Such monitoring would be in conformance with the Community Air Monitoring Plan (CAMP) guidance for PM₁₀ and VOCs published by the New York State Department of Health (DOH) and would be implemented during the excavation of site soils (or other activities that involve moving existing site soils around or off the site) in connection with the construction of the Proposed Project or any related excavation or remediation. The RAPs and CHASPs would be submitted for review and approval to the agency exercising jurisdiction over environmental conditions at the site pursuant to applicable law, or if no such agency is exercising jurisdiction, to ESD. Remediation, if required, and the demolition, excavation and construction at a development site would be performed in accordance with the approved RAP and CHASP for the site.
- All known petroleum storage tanks, and any unexpectedly encountered ASTs or USTs, that would be disturbed by the Proposed Project, would be properly closed and removed, or closed-in-place, in accordance with applicable regulations, including DEC tank management, registration, and spill reporting requirements. Any contaminated soil surrounding the tanks, separate-phase petroleum on the water table, or contaminants dissolved in the groundwater are also subject to DEC regulations (6 NYCRR Section 611.6).
- The Proposed Project would be designed and constructed so as to prevent VOCs from infiltrating the interior of the Proposed Project's buildings through (i) the construction of the building above the platform of a ventilated rail facility and/or (ii) the incorporation of equivalently effective engineering controls, such as a vapor barrier and/or sub-slab depressurization system. The engineering plans demonstrating compliance with such measures would be submitted, to the extent required by law, to the agency exercising jurisdiction over environmental conditions at the site pursuant to applicable law, or if no such agency is exercising jurisdiction, to ESD.
- Since dewatering is anticipated for construction, groundwater samples collected during or subsequent to the Phase II ESIs would be analyzed for the DEP sewer discharge parameters to determine if treatment is required prior to discharge to the City sewer. Any dewatering to the sewer system would be conducted in accordance with a DEP sewer discharge permit, if required.

CONCLUSION

The Proposed Project would include excavation of soil for construction of new tracks, stairwells, building foundations and basements, subway and station entrances, placement of utilities, and an east-west passageway between Herald Square and 34th Street-Penn Station, with off-site disposal of any contaminated or hazardous soil at a licensed facility, in accordance with City, state, and federal regulations. Dewatering would likely be needed during excavation, potentially with groundwater treatment (if required based on pre-discharge analytical data) prior to discharge to the City sewer under a DEP sewer discharge permit (if required). Any contaminated soil left in-

situ would be capped by the concrete slabs and foundations of the proposed buildings and structures.

Improvements to Penn Station and area subway stations would be completed by Amtrak, the MTA, and/or NJT. The railroads would follow all applicable regulations and/or project specifications, and would implement measures to protect workers and the public during construction and operation of all rail and transit improvements. Construction in public rights-of-way to implement the Proposed Project's public realm improvements would be performed in connection with site development, and would include the measures described above to minimize exposure of hazardous materials to workers and the public during the construction and operational phases of the Proposed Project.

Contamination in the subsurface and inside buildings (primarily related to asbestos, LBP, and PCBs) may be present. However, with the implementation of a variety of measures set out above, no significant adverse impacts related to hazardous materials would occur as a result of construction and operation of the Proposed Project. Although some hazardous materials would likely still remain in the subsurface following construction of the Proposed Project, with the groundwater and vapor control measures outlined above, there would be no exposure pathways and thus no further potential for significant adverse impacts. *