Chapter 12: Contaminated Materials

12.1 INTRODUCTION

This chapter presents the analysis the FRA conducted to assess the potential impacts from hazardous materials and contaminants present in the soil, groundwater, or existing structures affected by construction for the Western Rail Yard Infrastructure Project, and the likelihood of such contaminants to persist (and present a concern) after development. This chapter also assesses the potential environmental consequences of the No Action Alternative and the Preferred Alternative relative to contaminated materials during disturbance associated with construction. In addition, the chapter assesses and summarizes specific measures that would be implemented or employed by the Project Sponsor for the Preferred Alternative to minimize the potential for exposure to or adverse effects from such materials and contaminants during construction.

Potential impacts related to hazardous materials can occur when an action causes disturbance of on-site contaminants present at concentrations above regulatory standards or guidance values, or introduces a new activity or industrial process that increases the risk of human exposure or poses a threat to the surrounding environment. The potential for the presence of hazardous materials or contamination at the Project Site was examined as part of the following previous studies: the *No. 7 Subway Extension-Hudson Yards Rezoning and Development Program Final Generic Environmental Impact Statement* ("Hudson Yards FGEIS") in 2004 (Metropolitan Transportation Authority/ City Planning Commission [MTA/CPC]); the *Western Rail Yard Final Environmental Impact Statement* in 2009 (MTA/CPC); the *EA/FONSI for Construction of a Concrete Casing in the Hudson Yards* in 2013 (FRA/Amtrak); and the *SEA/FONSI for Construction of a Concrete Casing Extension in the Hudson Yards* in 2014 (FRA/Amtrak). These analyses included Phase I Environmental Site Assessments (ESAs) in 2004 and 2009, and a Phase II Environmental Site Investigation (ESI) in 2004 (i.e., soil and groundwater testing). FRA has updated the previous findings of the Hudson Yards FGEIS for the Project Site in this chapter by summarizing the actions undertaken to achieve closure of petroleum Spill 04-07411 in March 2013. Since evidence of coal tar was observed in the spill area, the Project Site was listed as a Class P site (potential Registry site) in the New York State Department of Environmental Conservation (NYSDEC) State Hazardous Waste Site (SHWS) program (the State Superfund program) as Site No. 231083.

The Project Site has a long history of rail use. It contains an active commuter train storage yard and ancillary facilities operated by the LIRR. Construction of the Platform within the northern two-thirds of the Project Site would entail limited targeted excavation, disturbance, and removal of fill, soil, and rock for the installation of caissons. On the southern third, or "terra firma," portion of the Project Site, more extensive excavation, disturbance, and fill/soil/rock removal would be required for the construction of the Tunnel Encasement, which would require a larger and deeper continuous area of excavation into bedrock.

Review of the prior contaminated materials studies prepared for the Project Site indicate that contamination was either known to be present or could potentially be present within the various portions of the rail yard. In addition to excavation of soil and rock, the Project Sponsor expects that groundwater (which could also potentially be contaminated) would need to be pumped from the site during excavation for the Preferred Alternative because of the shallow depth to groundwater; therefore, FRA included assessment of groundwater in this analysis. Chapter 3, "Alternatives," provides more details on the expected areas of disturbance and the methods and sequencing that the Project Sponsor expects to use for construction of the Preferred Alternative.

12.2 REGULATORY CONTEXT

FRA conducted the environmental evaluation process pursuant to the Federal and State laws and regulations, where applicable to Phase I ESAs and Phase II ESIs. For additional details on the regulatory context for this resource category, please refer to Chapter 9 of **Appendix B**, "Methodology Report."

Parcels within the Hudson Yards area are subject to institutional controls placed by the New York NYCDCP as a result of prior CEQR reviews. Sites with an (E) Designation (as shown on the New York City zoning map) cannot undergo a change of use or development requiring a NYCDOB permit without first obtaining approval from New York City Office of Environmental Remediation (NYCOER). NYCOER review and approval is required for investigation and remediation activities associated with hazardous materials at any affected (E) Designated sites or RD sites, such as the Project Site.

12.3 ANALYSIS METHODOLOGY

12.3.1 STUDY AREA

The American Society for Testing and Materials (ASTM) Standard E1527-13 defines the distance to which various environmental categories pertaining to the historic and current use of nearby properties must also be evaluated. Therefore, the Study Area for this analysis includes the entire Project Site and extends to the known environmental record sources in accordance with ASTM E1527-13.

12.3.2 DATA SOURCES

The data sources FRA used in this analysis and the Phase I ESA are described in detail in **Appendix B**. Data sources include Regulatory databases, and available prior studies and published literature on environmental and contaminated materials studies for the Study Area from Federal and New York government sources for the analysis.

12.3.3 ANALYSIS TECHNIQUES

FRA's Independent Third Party Consultant, AKRF, Inc., conducted a Phase I ESA on behalf of FRA, in December 2020 (included in **Appendix I**) to identify potential environmental concerns associated with the Project Site resulting from past or current site usage or usage of neighboring properties (i.e., areas adjacent to the Tunnel Encasement and Platform) pursuant to ASTM Standard E1527-13 (the "ASTM Standard"), including the associated search radii which various environmental categories pertaining to the historic and current use of nearby properties must also be evaluated.

The Phase I ESA is intended to satisfy the federal "All Appropriate Inquiries (AAI)" criteria to obtain protection from potential liability under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), defined in 42 USC 9601(35)(B). The Phase I ESA includes: a review of available records and historical maps and/or aerial photos to determine previous on-site and adjacent land uses; a site inspection and general area characterization; interviews with past and/or present site managers, operators, and occupants of the property (if applicable); an evaluation of regulatory database listings for the subject and neighboring properties; a determination of the need for further investigations. Records maintained by USEPA and the NYSDEC were obtained and reviewed to assess the potential for contamination, due to the presence of identified problem sites and activities on or adjacent to the property. The database search areas were at least as extensive as those recommended in the ASTM Standard. The list of databases AKRF, Inc. used to complete the Phase I ESA are listed in the December 2020 Phase I ESA, see **Appendix I**. The ASTM Standard is widely used as a framework for environmental reviews and property transactions to identify the presence of Recognized Environmental Conditions (RECs), Historic RECs (HRECs), Controlled RECs (CRECs), and Business Environmental Risk. The term "Recognized Environmental Condition" (REC) means the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. The Standard also includes definitions of HREC, CREC, and *De Minimis* Condition. A *De Minimis* Condition is defined as an environmental concern that is not a threat to human health or the environment and would not be subject to enforcement action.

The previous Phase I ESA for the Western Rail Yard was conducted in accordance with the previous ASTM standard (ASTM E1527-00); the updated Phase I ESA AKRF, Inc. conducted for the Preferred Alternative was prepared in accordance with the current ASTM guidance (ASTM E1527-13) and focused on areas of potential disturbance associated with the Preferred Alternative (i.e., the Project Site). The analysis techniques include the following: a visual inspection of the property; a review of available regulatory records, historical land use maps and aerial photographs to determine previous on-site and adjacent land uses; and an evaluation of regulatory databases for the Project Site and neighboring properties. Records relating to past and current site uses, spills, and other relevant information (including available prior environmental reports) were reviewed for properties located within the Study Area and adjacent areas. A more detailed description of the analysis techniques FRA directed AKRF, Inc. to use to prepare the Phase I ESA and the analysis presented in the chapter is included in **Appendix B**.

In this EIS, FRA has summarized the Phase I ESA findings; evaluated remedial options; and identified the appropriate health and safety measures to be employed during construction to protect workers and the public during intrusive construction activities (e.g., soil excavation and disturbance).

12.4 AFFECTED ENVIRONMENT

Both portions of the Project Site (the LIRR train yard and terra firma) are at an elevation of approximately 10 feet above mean sea level. Due to variations in street grade, the Project Site is approximately 10 feet below street level on its eastern side, and at street level on its western side. In the 1980s, the Project Site was redeveloped for use by the LIRR. The redevelopment included removal of historical train tracks, installation of a 12- to 18-inch concrete slab over the train yard, and installation of new tracks and structures over this slab. The terra firma area was paved with asphalt. The Project Site includes portions of existing railroad infrastructure underlain by anthropogenic fill and sand, and was formerly part of the Hudson River, which was filled to expand the Manhattan shoreline beginning roughly in the late 1800s. Based on the 2004 subsurface investigation, beneath the pavement, the Project Site is underlain by an approximately 10- to 35-foot layer of fill materials (including silty sand, gravel, bricks, cinders, concrete, roots, and rock fragments). An area at the approximate center of the Project Site contains fill up to 45 feet deep. The fill is underlain by native sand, silt, clay, organic soil (riverine deposits), and glacial till. Depth to bedrock beneath the Project Site ranges from approximately 25 to 150 feet below ground surface (bgs), with bedrock sloping down toward the west. Groundwater was first encountered at approximately 5 to 7 feet bgs, and is anticipated to flow in a westerly direction toward the Hudson River, but is likely tidally influenced. During disturbance associated with the Project, soil and/or fill materials containing petroleum contamination, creosote, coal tar, polychlorinated biphenyls (PCB)-containing components and/or buried demolition debris could be encountered. Groundwater and/or soil vapor conditions may also have been affected by former on-site industrial uses.

12.4.1 2004 PHASE I ESA

A Phase I ESA[1] was completed for the Project Site and adjoining areas as part of the 2004 Hudson Yards FGEIS.

The following RECs were identified by the 2004 Phase I ESA:

- Historical uses of the Property as a lumber yard, freight yard, and train storage yard;
- Potential use of pesticides, herbicides, and creosote at on-site train tracks;
- Historical off-site uses, including a rail yard with coal storage, iron works, and a locomotive house on the east-adjacent block (the Eastern Rail Yard), a metals purchasing company, a lumber yard, a coal yard, garages, filling stations, a truck rental company, and a motor freight station; and
- Two off-site properties within 0.125 miles of the Project Site were identified in Leaking Tanks (LTANKS) and NY Spills databases with open/active petroleum spill listings.

No historical properties of environmental concern were identified north or west of the Project Site.

12.4.2 2004 SUBSURFACE INVESTIGATION RESULTS

Based on the findings of the 2004 Phase I ESA, a Phase II ESI[2] consisting of subsurface soil and groundwater sampling was conducted throughout the Project Site. The scope of the ESI included the following:

[1] Caemmerer Yard Phase IA Environmental Site Assessment, Parsons Brinckerhoff (PB) and Louis Berger and Associates, P.C. (LBA), July 2004.

[2] Caemmerer Yard Phase II Environmental Site Investigation, PB, 2004

- Installation of 45 soil borings to a maximum depth of 45 feet bgs, with collection and laboratory analysis of 175 soil samples;
- Screening of soil samples for volatile organic compounds (VOCs) and methane; and
- Collection and laboratory analysis of 11 groundwater samples.

Soil sampling results were compared to the Remedial Soil Cleanup Objectives (RSCOs) contained in NYSDEC Technical and Administrative Guidance Memorandum (TAGM) #4046 (a set of guidance values used at the time of the ESI). The soil sampling results revealed no exceedances of the RSCOs for pesticides, herbicides, or PCBs. Also, no above-background levels of methane were detected, and none of the samples exhibited toxicity levels above Resource Conservation and Recovery Act (RCRA) hazardous waste characteristics. Nine soil samples containing levels of benzene ranging from 96 to 2,200 parts per billion (ppb) were detected above the RSCO of 60 ppb. Three of these nine samples also exhibited levels of ethylbenzene, ranging from 15,000 to 120,000 ppb, above the RSCO of 5,500 ppb. Sampling revealed the presence of semi-volatile organic compounds (SVOCs), including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, dibenzofuran, fluoranthene, indeno(1,2,3-c,d)pyrene, pyrene, acenapthene, and phenanthrene at concentration levels exceeding their respective RSCOs. The compounds detected were part of the group of SVOCs known as polycyclic aromatic hydrocarbons (PAHs), formed during incomplete burning of coal, oil, gas, wood, garbage, or other organic substances, such as tobacco and charbroiled meat. PAHs are commonly present in urban fill materials. Benzo(a)pyrene, a known carcinogen, ranged from not being detected to 30,000 ppb in the samples, many of which exceeded the RCSO of 61 ppb. Metals detected at levels above their respective RSCOs included arsenic, barium, beryllium, cadmium, chromium, copper, lead, magnesium, mercury, nickel, selenium, and zinc.

Groundwater sampling results were compared to NYSDEC's "Class GA" Water Quality Standards or Guidance Values (drinking water standards). No pesticides, herbicides or PCBs were detected in the groundwater samples. VOCs (benzene, ethylbenzene, total xylenes, and toluene) and SVOCs (naphthalene, 2-methylphenol, 4-methylphenol, and several PAHs) were detected in two of the samples analyzed at concentration levels above "Class GA" standards or guidance values, which may reflect the presence of isolated petroleum contamination (VOCs) and creosote (SVOCs).

Metals exceeding the groundwater criteria included arsenic, barium beryllium, chromium, copper, magnesium, manganese, lead, and mercury. However, the contaminant levels encountered were consistent with those typically found in urban groundwater—in particular, areas with historic fill. Additionally, during the sampling event, field screening identified high turbidity levels. The Phase II ESI determined that the presence of elevated metals is likely attributable to metals in suspended particles within the groundwater samples rather than attributable to specific releases or spills.

In addition to the "Class GA" comparisons, the groundwater sampling results were also compared to NYCDEP's Effluent Discharge Limitations to sewers. Analytical results indicate that groundwater would likely require treatment prior to its discharge to meet NYCDEP groundwater discharge criteria.

Generally, the soil sampling results were consistent with the presence of historic urban fill, which was expected at the Project Site. However, in two instances (NYSDEC Spill cases 04-07107 and 04-07411), potential petroleum impacts were noted during field screening, and NYSDEC was notified. Laboratory analyses revealed no elevated levels of VOCs or SVOCs in the former case; the NYSDEC was therefore requested to close Spill 04-07107. The spill case was closed by NYSDEC on April 6, 2006.

Regarding Spill 04-07411, located on the sidewalk southeast of the intersection of Twelfth Avenue and West 33rd Street, contamination consistent with petroleum was confirmed by laboratory analysis. This spill was subject to a December 2006 Consent Order between LIRR and NYSDEC requiring implementation of a Site Investigation Work Plan and, if NYSDEC determines that it is necessary, subsequent implementation of an appropriate RAP. Both plans required prior NYSDEC approval. Following implementation of any required RAP, a Final Engineering Report was required to be submitted to and approved by NYSDEC before the spill could be administratively closed. Spill 04-07411 was closed by NYSDEC in March 2013 after additional soil sampling and groundwater monitoring; based on evidence of coal tar observed in the spill area, the Project Site was enrolled in the NYSDEC SHWS database as Site No. 231083.

A review of the sampling results for the soil and groundwater in the segment of Route 9A along Twelfth Avenue immediately adjacent to the Project Site (as summarized in the *Route 9A Reconstruction Project FEIS*), did not reveal any additional information with regard to the nature and extent of subsurface contaminants identified in this area. Based on the findings of the Phase II ESI, the contamination identified raised no unique environmental concerns and would require protective measures to be employed during construction that are typically used at many New York City construction sites, as discussed in Section 12.6, “Avoidance, Minimization, and Mitigation Measures.”

12.4.3 2009 PHASE I ESA

A Phase I ESA was prepared by LBA for the Project Site in January 2009. The findings of the 2009 Phase I ESA were generally similar to those of the 2004 Phase I ESA, with the following additional RECs identified:

- On-site Spill 04-07411, which was reported based on contamination noted in the northwestern corner of the Project Site during the 2004 Phase II ESI, and had an active status at the time of the 2009 Phase I ESA (the spill was subsequently closed in March 2013);
- On-site Spill 04-07107, for which closure was requested from NYSDEC at the time of the 2009 Phase I ESA. The report noted that no closure documentation was identified; thus, the spill was identified as a REC. However, based on online NYSDEC records, this spill listing was closed in April 2006; and
- Nearby regulatory listings, including four active-status spills, one CERCLIS listing with a No Further Remedial Action Planned (NFRAP) status, and one State BCP site.

12.4.4 2020 HAZARDOUS MATERIALS SCREENING

FRA's preliminary review of previous reports, historical land use maps and the regulatory database information identified potential concerns, including a long history of railroad operations following the anthropogenic filling of the former in-water areas beneath the Project Site in the late 1800's and historical railroad and industrial uses in adjoining areas. No active-status petroleum spills were identified at the Project Site. The database information noted that on-site Spill 04-07411 was closed by NYSDEC in March 2013 after additional soil sampling and groundwater monitoring. However, the Project Site is listed in the NYSDEC SHWS database as Site No. 231083 with Classification Code: P (Potential) based on evidence of coal tar contamination observed in the spill area (encountered within apparent fill materials between approximately 15 to 40 feet bgs according to the spill file notes). According to NYSDEC information, this classification is used for sites where preliminary information indicates that a site may have contamination that makes it eligible for consideration for placement on the Registry of Inactive Hazardous Waste Disposal Sites (commonly referred to as the list of State Superfund Sites) and further investigation, in the form of a site characterization, is needed to determine if a Class P site qualifies for listing of the site on the Registry. The database information noted that as information for this site becomes available, it will be reviewed by the NYSDOH to determine if site contamination presents public health exposure concerns.

As required by the 2009 SEQRA/CEQR FEIS, a RD was assigned to the Project Site in April 2014. The RD described the Project Site as Block 676, part of Lot 3 (the future Lots 1 and 5). The Project Site was subsequently subdivided into Lot 1 (terra firma) and Lot 5 (the LIRR train yard). The RD noted that preparation of a site-specific Construction Health and Safety Plan (CHASP) would be required prior to soil disturbance; pre-demolition surveys of buildings to be demolished for asbestos-containing material (ACM), lead-based paint (LBP) and PCBs were required; vapor control measures would be required for future buildings on the Project Site; and additional investigation of soil, groundwater, and soil vapor conditions would be constructed prior to new development, as appropriate. Although the RD indicated that the site-specific CHASP would be submitted to NYCDEP for review and approval, NYCOER is currently the agency which oversees compliance with environmental RDs.

12.4.5 2020 PHASE I ESA

AKRF, Inc. completed a Phase I ESA on behalf of FRA in December 2020. This Phase I ESA was performed in conformance with ASTM Standard E1527-13, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Practice*.

The assessment revealed the following RECs:

- Spill #1802063 was reported in May 2018 at a listed address of 645 West 30th Street (Lot 1) when petroleum contamination was identified during a subsurface investigation in a former bus fueling and washing area located on the southwestern portion of the lot (remnants of the former fueling station including an inactive pump island were observed in this area during the site reconnaissance). The spill file notes indicated that the Property was listed under the NYSDEC Petroleum Bulk Storage (PBS) facility #2-601983 and was associated with a former NYC Department of Sanitation (DSNY) garage (portions of the lot appeared to have been historically used by DSNY for vehicle storage). Several closed-removed underground and aboveground petroleum storage tanks ranging in size from approximately 275 to 2,500 gallons of hydraulic oil, motor oil, biodiesel and diesel were identified; the tanks were reportedly removed between 2007 and 2014. According to the spill file, no evidence of widespread contamination was identified during subsequent soil boring investigations completed in the former bus fueling area in 2018, and it was noted that the proposed redevelopment would require petroleum-contaminated soil removal to the water table with associated waste characterization sampling for off-site disposal purposes. The file notes indicated that remedial activities would be managed under NYCOER oversight during redevelopment to address contamination and the spill was closed in January 2019.
- Spill #0407411 was listed in October 2004 with an address of Twelfth Avenue and West 33rd Street (Lot 5) due to significant on- and off-site petroleum contamination discovered during subsurface investigations. The contamination was noted to be primarily on the northwestern portion of the Property and to the north across West 33rd Street. Remedial investigations conducted in 2009 indicated few exceedances of dissolved VOCs in groundwater, and the file notes indicated contamination consistent with manufactured gas plant (MGP) waste (e.g., coal tar) was limited to an area on the northwestern portion of the site in deeper soil (below the groundwater interface). It was noted that additional remedial investigation activities were proposed to delineate potential residual contamination, which would be addressed under the NYSDEC SHWS program (ID #231083). The spill was subsequently closed in March 2013; however, residual contamination may be present. Online NYSDEC records identified the Property as a “P” site (i.e., a potential SHWS site, being evaluated for addition to the registry).
- Sanborn maps and aerial photographs indicated that the Site had a long history of railroad and freight uses, since at least circa 1890 that could have affected subsurface conditions. Additional uses on the site included a lumber yard (subsequently a department store warehouse), freight storage sheds and a freight terminal.
- The surrounding blocks were largely industrial and automotive in use according to Sanborn maps and the regulatory database information, including various warehouses, a varnish works, a beer distribution facility with fueling operations (subsequently a motor freight station) on the north-adjacent block and various uses including a soap factory, motor freight stations, various manufacturing uses, garages with gasoline tanks, a bus garage (subsequently a DSNY garage) and filling stations on the south-adjacent block. Such uses may have affected area environmental conditions.

On-site/Off-site Environmental Concerns (items outside the scope of ASTM E1527-13 such as ACM, LBP and/or PCBs in Building Materials or Fill/Debris)

- Building components and/or historic fill materials may contain LBP and/or ACM and/or PCBs (including electrical equipment, train ballasts and other rail components).
- The Property was formerly part of the Hudson River, which was filled to expand the Manhattan shoreline beginning approximately in the late 1800s. Based prior subsurface investigations, the Property Site is underlain by an approximately 10- to 45-foot layer of fill materials (including silty sand, gravel, bricks, cinders, concrete, roots, and rock fragments).

Potential for Vapor Encroachment

Based on the RECs identified (refer to the first four bullets above), the Phase I ESA identified a potential for vapor encroachment into current or future buildings at the Property.

12.5 ENVIRONMENTAL CONSEQUENCES

12.5.1 NO ACTION ALTERNATIVE

No hazardous materials impacts would be anticipated under the No Action Alternative since no excavation or foundation construction would occur. As such, the Project Site would remain in use as an open rail yard with no development above, and the current LIRR operational facilities would remain on the terra firma portion of the Project Site. Further site investigation and remedial activities associated with the on-site NYSDEC SHWS listing would be implemented, as required by NYSDEC, and current MTA LIRR safety protocols would apply to any on-site disturbance. Therefore, FRA has concluded that the No Action Alternative would not result in any adverse impacts related to contaminated materials with these activities implemented and protocols in place.

12.5.2 PREFERRED ALTERNATIVE

Construction resulting from the Preferred Alternative would involve both the potential for demolition or disturbance of existing structures or utilities, and a variety of earthmoving or excavating activities during the construction phase with the potential of encountering subsurface contamination. Excavation for the proposed Tunnel Encasement and caissons for the Platform support would extend well into bedrock. Groundwater depth at the Project Site is relatively shallow (i.e., less than 10 feet bgs); therefore, groundwater would be encountered during some of these activities and dewatering activities (and possible pre-treatment) could be required, as specified in the CEPP for the Preferred Alternative, which includes a dewatering plan.

The presence of hazardous materials contamination only threatens human health or the environment when exposure to such contaminants occurs. Even in these situations, a health risk requires both an exposure pathway to the contaminants and a sufficient dose to cause adverse health effects. To prevent such exposure, FRA has identified appropriate health and safety, investigative, or remedial measures for the Preferred Alternative (conducted in compliance with applicable laws and regulations, and conforming to appropriate engineering practice) that the Project Sponsor would implement before, and remain in place after, demolition and soil disturbance at the Project Site. These measures are discussed in detail below in **Section 12.6**, "Avoidance, Minimization, and Mitigation Measures," and would include the following (to be implemented by the Project Sponsor) during construction of the Preferred Alternative:

- Prior to any excavation or construction activity, preparation of a site-specific Remedial Action Plan and Construction Health and Safety Plan (RAP and CHASP) would be prepared and incorporated into the Preferred Alternative's construction documents. The RAP and CHASP would describe precautionary measures and safety procedures to be followed to minimize pathways of exposure to contaminants, including a Materials Handling Plan identifying specific protocols and procedures to be employed to manage soil and groundwater at the Project Site in accordance with applicable regulations during construction. The requirement for a CHASP is included in the RD that has been assigned to the Project Site.
- Proper handling and disposal of any building materials, equipment, or utilities containing suspect PCBs, LBP, and/or ACM, in accordance with the applicable regulations, prior to demolition or construction which may disturb them.
- Dewatering activities would be conducted in accordance with NYCDEP requirements, including pre-treatment as required during construction.

- Installation of appropriate permanent ventilation systems (for post-construction operation) for areas under the Platform at the Project Site in accordance with LIRR's engineering design criteria for yard ventilation.

FRA has concluded that the Preferred Alternative would not result in any adverse impacts related to contaminated materials with these measures implemented.

12.6 AVOIDANCE, MINIMIZATION, AND MITIGATION MEASURES

This section includes preventive and management procedures that the Project Sponsor would follow to avoid, minimize, or mitigate exposure pathways to contaminants. These measures are included in the existing RD for the Project Site, and are included in the CEPP for the Preferred Alternative. To avoid adverse impacts on 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 USEPA (i.e., prior to disturbance of potential PCB-containing components), NYCDEP and OER, and/or NYSDEC as appropriate. Any hazardous materials encountered during construction would be managed, isolated, and/or removed in accordance with a RAP and CHASP, as required. The RAP and CHASP would include a Materials Handling Plan (or equivalent) to identify measures to address any contaminated material that would not be removed as part of construction and therefore would remain in place. Elements of the RAP and CHASP would address health and safety, and would include provisions for managing soil, soil gas, groundwater, petroleum storage tanks, ACMs, LBP, and PCB-containing components. The provisions of the RAP and CHASP would be mandatory for the contractors and subcontractors of the Project Sponsor engaged in on-site construction activities.

12.6.1 FURTHER INVESTIGATIONS

Additional investigation(s) would be undertaken by the Project Sponsor, as appropriate, in accordance with NYCDEP, NYCOER and/or NYSDEC requirements prior to subsurface disturbance associated with the Preferred Alternative to evaluate the extent of soil, groundwater, and soil vapor contamination present at the Project Site in accordance with relevant regulatory protocols. Findings from these additional investigations would inform the appropriate course of action required which would be summarized in a RAP and CHASP to avoid or appropriately manage potential contamination. The RAP would present procedures for the Project Sponsor to follow for managing soil and groundwater during subsurface disturbance associated with construction of the Preferred Alternative in accordance with applicable federal, state, and local requirements, including guidelines for temporary on-site stockpiling and off-site transportation and disposal of soil. The CHASP would set forth health and safety procedures for the Project Sponsor to follow to minimize exposure of hazardous materials to the construction workers, nearby community residents, as well as the surrounding public and environment. The hazards of the Project Site would be evaluated by determining the subsurface contaminants of concern and their chemical and physical characteristics, and the health hazards associated with the work to be performed. As required by the RD, subsurface investigation(s) would be carried out by the Project Sponsor in accordance with an NYCOER-approved Work Plan and would be targeted toward areas of proposed disturbance associated for the Preferred Alternative. Coordination with NYSDEC would likely be required in conjunction with the SHWS program and USEPA prior to disturbance of potential PCB-containing materials. All intrusive work must be in accordance with MTA LIRR requirements.

12.6.2 EXISTING STRUCTURES

During intrusive work associated with the Preferred Alternative, the following measures would be implemented by the Project Sponsor for existing structures and utilities prior to disturbance to avoid, minimize and/or mitigate potential adverse impacts with respect to hazardous materials.

12.6.2.1 ACM MANAGEMENT PLAN

Proper handling, removal, and disposal of ACM is governed by federal requirements (OSHA 29 CFR 1926.1101, NYSDOT 49 CFR Parts 171-173, and EPA 40 CFR Part 61), New York State requirements (Labor Law Article 30—Asbestos or Products Containing Asbestos Licensing and 12 NYCRR Part 56 Asbestos Regulations), and New York City requirements (Rules of the City of New York Title 15—Handling and Disposal of Asbestos). The Project Sponsor would implement appropriate engineering controls (e.g., wetting and other dust control measures) to minimize asbestos exposure, if necessary, prior to and throughout demolition and renovation.

12.6.2.2 LBP MANAGEMENT PLAN

If lead-coated surfaces are present, an exposure assessment would be performed to determine whether lead exposure occurs during the demolition. If the exposure assessment indicates the potential to generate airborne dust or fumes with lead levels exceeding health-based standards, a higher personal protection equipment standard would be employed to counteract the exposure. In all cases, the Project Sponsor would implement appropriate methods to control dust and air monitoring, as required by OSHA, during demolition activities.

12.6.2.3 HANDLING OF PCB-CONTAINING EQUIPMENT

Suspected PCB-containing equipment (e.g., train track ballasts, 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 (40 CFR Part 761), State (6 NYCRR Parts 360–376), and local regulations and may require coordination with EPA prior to disturbance. Unless suspected PCB-containing equipment is labeled to be “non-PCB,” the Project Sponsor would test the equipment or assume it to be PCB-containing and dispose of it at properly licensed facilities.

12.6.3 SUBSURFACE DISTURBANCE

As described above, there is a potential to encounter subsurface hazardous materials contamination at the Project Site during soil-disturbing activities. The Project Sponsor would incorporate detailed procedures into the Preferred Alternative’s construction documents (i.e., construction, specifications) to govern the excavation work and all other activities that would require subsurface disturbance. In consideration of the various types of materials (i.e., petroleum-contaminated soils, historic fill, or native materials) that may be encountered during subsurface excavation, the environmental measures outlined in a site-specific RAP and CHASP would be prepared prior to any excavation or construction activity and would be included in the Preferred Alternative’s construction specifications. The Project Sponsor would implement preventive measures to protect the construction workers, nearby community residents, public safety, and the environment. All activities would be performed in accordance with applicable City, State, and federal requirements and subject to MTA LIRR protocol, as required.

Specifically, the Project Sponsor would implement the following remedial and protective measures:

- A Subsurface (Phase II) Investigation would be conducted in areas of proposed disturbance (above the bedrock interface) to characterize subsurface conditions. Since an RD was assigned to the Project Site based on the 2009 SEQRA/CEQR FEIS, the Phase II must be conducted with NYCOER approval. The investigation may also include coordination with NYSDEC, as a portion of the Project Site is listed in the SHWS due to coal tar contamination noted in prior investigations and/or coordination with USEPA (prior to disturbance of possible PCB-containing components, i.e., train ballasts).
- Prior to any excavation or construction activity, a site-specific RAP and CHASP would be prepared and incorporated into the Preferred Alternative's construction documents. The RAP and CHASP would describing precautionary measures and safety procedures to be followed to minimize pathways of exposure to contaminants, including a Materials Handling Plan identifying specific protocols and procedures to be employed to manage soil and groundwater at the Project Site in accordance with applicable regulations during construction. The requirement for a CHASP was also included in the RD that pertains to the Project Site.
- Information in the NY Spills database indicated that additional remedial activities would be required to address known or potential residual contamination on the southwestern portion of the Project Site related to Spill #1802063 and on the northwestern portion of the Project Site under the NYSDEC SHWS program (ID #231083). Remedial activities in these areas would continue to be conducted in coordination with NYSDEC and NYCOER, as required.
- Any underground storage tanks (USTs) encountered during redevelopment would be properly closed and removed, along with any contaminated soil, in accordance with federal, state, and local regulations, including NYSDEC for registration and, if applicable, spill reporting.
- During any future subsurface disturbance, excavated soil would be handled and disposed of properly in accordance with all applicable regulatory requirements, with spill reporting as required. Transportation of material leaving the Project Site for off-site disposal would be in accordance with federal, state, and local requirements covering licensing of haulers and trucks, placarding, truck routes, manifesting, etc.
- The appropriate vapor mitigation systems would be installed to protect buildings on the terra firma portion of the Project Site. If required, the design of new buildings would consider soil vapor mitigation measures to prevent any volatile contaminants that may remain present in the soil and groundwater from migrating into the new buildings. The RD includes these vapor mitigation requirements. This document specifies that, based upon further testing and review of any additional analytical data, the Project Sponsor would have the opportunity to demonstrate to the satisfaction of the NYCDEP and the NYCOER which of these measures are required.
- Any building materials, equipment, or utilities containing suspect PCBs, LBP, and/or ACM would be properly handled and disposed of, in accordance with the applicable regulations, prior to demolition or construction which may disturb them.
- Dewatering activities would be conducted in accordance with NYCDEP requirements, including pre-treatment as required during construction.
- Appropriate permanent ventilation systems would be installed during construction of the Preferred Alternative, as necessary, (to be operated post-construction) for areas under the Platform at the Project Site in accordance with LIRR's engineering design criteria for yard ventilation.

With these measures in place, FRA has determined that the risk of exposure to contaminated materials during intrusive work associated with the Preferred Alternative would be minimal. ✷