10

Hazardous Materials

A hazardous material is any substance that poses a threat to human health or the environment if it creates an exposure pathway. Substances that can be of concern include, but are not limited to, heavy metals, volatile and semi-volatile organic compounds (VOCs and SVOCs), methane, polychlorinated biphenyls (PCBs), and hazardous wastes (defined as substances that are chemically reactive, ignitable, corrosive, or toxic) which may create a dermal, inhalation or ingestion exposure pathway if present in the environment and are left uncontrolled.

Introduction

According to the *2021 CEQR Technical Manual*, the potential for significant impacts from hazardous materials can occur when:

- hazardous materials exist on a site;
- an action would increase pathways to their exposure; or
- an action would introduce new activities or processes using hazardous materials.

This section presents the findings of the hazardous materials assessment and identifies potential issues of concern with respect to workers, the community, and/or the environment during construction and after implementation of the Proposed Project.

Principal Conclusions

Several Phase I Environmental Site Assessments (ESAs) and subsurface investigations have been conducted at the Development Site and concluded that soil, groundwater, and soil vapor

contamination is present. The contamination identified is attributed to historic fill, potential petroleum impacts, potential underground storage tanks, methane and VOCs in soil vapor, and potential impacts from off-site sources. While additional characterization of subsurface conditions will be necessary to supplement the existing data for addressing specific areas of ground disturbance, the findings of any supplementary investigation are not expected to change significantly from what is presented herein.

As indicated in the *CEQR Technical Manual*, the hazardous materials (E)-Designation is an institutional control that may be placed on a site to establish a hazardous materials review and approval framework. It provides a mechanism to ensure that testing for and remediation of hazardous materials, if necessary, are completed prior to future development of an affected site, thereby eliminating the potential for a hazardous materials impact. (E)-Designated parcels are administered under the authority of the New York City Mayor's Office of Environmental Remediation (OER).

Based on the known contamination, an (E)-Designation (E-834) would be placed on the Development Site (Block 1787, Lot 1 & 20 and Block 2018, Lot 1500) to ensure that supplemental testing for and remediation of hazardous materials, if necessary, are completed prior to future development. The obligation and responsibility for any testing and remediation under the (E)-Designation will be assumed by the Applicant as set forth in a lease agreement. Under the (E)-Designation, OER would be authorized to require supplemental subsurface remedial investigation (RI) to further characterize specific areas of ground disturbance on the Development Site for contaminants relating to soil, groundwater, and soil vapor conditions. Subsurface contaminants would subsequently be addressed through the development and implementation of an OER-approved Remedial Action Work Plan (RAWP) and Construction Health and Safety Plan (CHASP). This would mitigate potential risk and exposure relating to the presence of hazardous materials in the subsurface by implementing institutional and/or engineering controls, as necessary.

By implementing the OER-approved RAWP and CHASP, no potential exposure or significant adverse impacts related to hazardous materials would be expected to occur during or after construction of the Proposed Project.

Methodology

To evaluate the potential for hazardous materials at the Development Site, several documents were reviewed including Phase I ESAs and subsurface investigation reports (e.g., Phase II Site Investigations).

The goal of a Phase I ESA is to identify Recognized Environmental Conditions (RECs), which means the presence of hazardous substances or petroleum products in, on, or at the subject property due to a release to the environment; the likely presence of hazardous substances or petroleum products in, on, or at the subject property due to a release or likely release to the environment; or the presence of hazardous substances or petroleum products in, on, or at the subject property under conditions that pose a material threat of a future release to the environment. Per the American Society of Testing and Materials (ASTM) E1527, a Phase I ESA reviews a variety of information sources, including current and historic Sanborn Fire Insurance Maps and aerial photographs; state and federal environmental regulatory databases identifying listed sites; and local environmental records.

As stated in ASTM E1527, there may be environmental issues or conditions at the site, which may be requested by the user to be addressed as part of the Phase I ESA, which are not covered within the

scope of ASTM E1527. These additional environmental issues (or non-scope considerations) could evaluate for the potential present of radon, lead-based paint (LBP), asbestos-containing materials (ACM), wetlands, and mold and water damage. Additional environmental issues, or non-scope considerations, are typically characterized in a Phase I ESA as Business Environmental Risks (BERs), which are risks that can have a material environmental or environmentally driven impact on the business associated with the current or planned use of a parcel of commercial real estate, not necessarily limited to those environmental issues required to be investigated.

The goal of a Phase II or other subsurface investigation is to evaluate subsurface conditions for the potential presence of contamination that could be encountered during site redevelopment or to satisfy regulatory requirements.

The potential for hazardous materials at the Development Site was evaluated based on the review of the following documents and reports:

- February 2006 Phase II Environmental Site Investigation (ESI) for Shea Stadium, prepared by AKRF, Inc. (AKRF)
- July 2006 Phase I Environmental Site Assessment (ESA) for Shea Stadium, prepared by AKRF
- August 2007 Remedial Action Plan for Citi Field, prepared by TRC Environmental Corporation (TRC)
- September 2010 Remedial Closure Report for Citi Field, prepared by TRC
- October 18, 2010 NYCDEP Letter of Approval for Remedial Closure Report
- March 7, 2011 Site investigation Findings Report: Infrastructure Improvements for Willets Point Redevelopment, prepared by Environmental Planning and Management, Inc. (EPM)
- April 1, 2011 Letter from NYCDEP Regarding the (March 7, 2011) Site Investigation Findings Report
- June 2013 Subsurface Investigation Sampling Protocol and Health and Safety Plan prepared by AKRF
- December 2013 Final Environmental Impact Statement for Willets Point Development
- June 7, 2022 Phase I ESA, prepared by Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C. (Langan)
- August 16, 2023 Addendum to June 7, 2022 Phase I Environmental Site Assessment, prepared by Langan

Assessment

Existing Conditions

The Development Site is bounded by Seaver Way to the east, the Metropolitan Transportation Authority (MTA) Corona Yard to the south, Grand Central Parkway and Shea Road to the west, and Northern Boulevard to the north. It consists of surface parking lots (7,423 spaces) and is bisected by the MTA 7 Subway Line along Roosevelt Avenue. The surface parking area south of Roosevelt Avenue also contains two active MTA structures associated with the Subway Line. This “Southfield Lot” is also used for commuter parking as well as parking for games or events held at Citi Field. The Development Site is comprised of approximately 78 acres of land.

Site History

Before the 1900s, the Development Site and the surrounding area were primarily undeveloped marshland with a rail line that transected the southern portion of the Development Site. The Development Site was reportedly part of the much larger Corona Ash Dump that received coal furnace and incinerator ash in the early part of the 20th century. It was filled in with 8 to 12 feet of landfill between 1910 and 1916. By 1931 the area along Roosevelt Avenue was developed with several uses, including auto sales/repair and a marble works facility; the elevated subway tracks and Roosevelt Avenue Station were also present by 1931. Much of the northern portion of the Development Site was paved around 1950 and used for parking for the World's Fair until 1961, when Shea Stadium began construction. The South Lot has been used for parking since the mid-1960s. In 2009, Shea Stadium was demolished, the area was paved, and the Development Site has since been used for parking.

Phase I Environmental Site Assessments

The potential for hazardous materials at the Development Site was evaluated in Phase I ESAs that were prepared over the past 15 years; these are summarized below, with the most recent Phase I ESA prepared by Langan in 2022.

In 2006, a Phase I ESA was prepared by AKRF, dated July 2006, for a portion of the Development Site located west of 126th Street and north of Roosevelt Avenue. At the time of site reconnaissance, the Development Site was improved with the former Shea Stadium. The July 2006 Phase I ESA, identified the following RECs:

- The site is covered with approximately 8-12 feet of artificial fill placed between 1910 and 1916 in the Flushing Meadow marshlands. The soil analyses reported in the February 2006 Phase II report show the presence of variable levels of metals and Polycyclic aromatic hydrocarbons (PAHs), some of which exceed NYSDEC's Recommended Soil Cleanup Objectives, as well as trace levels of some petroleum-related volatile organic compounds. The analyses are typical of the fill material found in the Flushing Meadow area, which is known to contain coal ash, incinerator ash, demolition debris, and other waste materials. Any construction activities which disturb the fill material on the site should be conducted in conformance with a Construction Health and Safety Plan to minimize exposure of workers and others to contaminants in the fill. Any excavated fill material removed from the site must be disposed of in accordance with applicable regulations.
- The soil gas survey performed as part of the February 2006 Phase II ESI study showed the presence of high levels of methane at many locations. Methane is generated by anaerobic decomposition of the organic matter in the old swamp deposits beneath the fill on the site. Methane can pose a fire or explosion hazard if it can accumulate in unventilated spaces. Any new structures on the site should incorporate measures to prevent the accumulation of methane in enclosed, unventilated spaces where it may pose a fire or explosion hazard.
- The area to the south of the site, across Roosevelt Avenue, contains a subway car repair shop and bus garage. The area to the east of the site, across 126th Street, contains many junk yards and auto repair shops. Groundwater testing performed as part of the February 2006 Phase II ESI study found methyl-tert-butyl ether (MTBE), a gasoline additive, to be present in the groundwater on the site. Other contaminants may be present at locations not tested or may enter the site in the future. If dewatering is required for construction activities, groundwater must be tested and disposed of in accordance with applicable regulations and guidelines.

A Phase I ESA was prepared in 2012 by Integral Consulting, Inc. in support of the *2013 Willets Point Development FSEIS* for a portion of the Development Site north of Roosevelt Avenue (defined as "Willets West" in the FSEIS) and south of Roosevelt Avenue to the west of the Passerelle Bridge (defined as the "South Lot" in the FSEIS). The 2012 Phase I ESA, *"found no evidence of historical or current petroleum storage tanks or other historical uses of concern. Prior to development, a Phase II ESA would be performed for the Willets West and South Lot areas to assess potential contamination and assist in preparation of remedial plans, if necessary, and health and safety procedures to be implemented during construction."*

The 2022 Phase I ESA prepared by Langan for the Development Site identified two RECs, as follows:

- Historical and current use of the subject property include auto sales and repair shops, a marble works facility, and a substation. Former facilities along Roosevelt Avenue, now corresponding to Roosevelt West, Roosevelt East, and Southfield portions of the Development Site, appear to have been associated with up to 42 underground storage tanks (USTs). Inadvertent releases of petroleum products or other hazardous substances associated with these uses may have impacted soil, soil vapor, and/or groundwater.
- Current and historical use of the adjoining properties include former auto repair shops, gasoline filling stations, a bus depot, tire service center, a subway repair shop, and MTA maintenance shop. There is also a new development enrolled in the New York State Brownfield Cleanup Program (BCP) adjacent to the site, where investigation and remediation of volatile organic compounds (VOCs) in groundwater is ongoing. Documented or suspected contaminants at these sites may have migrated and impacted groundwater and/or soil vapor at the Development Site.

To further explore the potential for USTs at the Development Site, Hager-Richter Geoscience, Inc. (Hager-Richter) conducted a ground penetrating radar (GPR) survey along Roosevelt Avenue, which was summarized in an August 16, 2023 Addendum to the June 7, 2022 Phase I ESA prepared by Langan. The GPR survey, which scanned the subsurface from two to five feet below grade, found one anomaly consistent with that of a UST on the north side of Roosevelt Avenue. Approximately 50 additional metal anomalies were identified within the scanned areas along the Roosevelt corridor. These anomalies were not conclusively identified as UST-like signatures and appear consistent with metallic debris identified in other parts of the site. Based on these results, Langan concluded that the likelihood of encountering USTs during redevelopment of the Development Site is limited.

Phase II Environmental Site Investigation and Site Investigation Findings

A Phase II Environmental Site Investigation (ESI) was performed by AKRF on portions of the Development Site north of Roosevelt Avenue, west of Seaver Way, south of Northern Boulevard, and east of the midway point of the existing Citi Field parking lot. Results of the ESI were documented by AKRF in a Phase II ESI report dated February 2006. The scope of the 2006 Phase II ESI included the following sample locations, shown on **Figure 10-1**:

- Collection and analysis of 38 soil samples from 19 soil borings across the footprint of the former parking lots located north and east of the former Shea Stadium;
- Installation of nine groundwater monitoring wells and the collection and analysis of nine groundwater samples; and
- Installation of 80 soil gas sampling locations and the use of a landfill gas meter to measure subsurface methane concentrations.

The March 2011 Site Investigation Findings Report conducted by EPM, in connection with a public infrastructure improvement project for the redevelopment of Willets Point, included additional locations with soil, groundwater, and/or soil gas sampling within the footprint of the Willets West project area. The scope of the 2011 Investigation included the following samples, shown on **Figure 10-1**:

- Collection and analysis of a total of 15 soil samples from six soil borings across the footprint of the former parking lots located north and east of the former Shea Stadium;
- Collection and analysis of four groundwater samples; and
- Installation of four temporary soil gas sampling locations for measuring subsurface methane concentrations.

The March 2011 Site Investigation Findings Report indicated similar soil results to the February 2006 Phase II ESI study. The one soil gas sample showed both elevated levels of methane and some low levels of VOCs. Groundwater laboratory analysis results were consistent with typical urban fill sites with no evidence of petroleum contamination; however, the groundwater at one location was noted to have a petroleum sheen and odor.

The results provided in the February 2006 Phase II ESI study and subsequent 2011 Site Investigation Findings Report indicate the presence of historic/urban fill materials that exceed the applicable NYSDEC Part 375 cleanup criteria on portions of the Development Site. Furthermore, chlorinated and petroleum VOCs were detected in soil gas samples, but were not detected at concentrations that exceed New York State Department of Health (NYSDOH) regulatory criteria. Methane was also detected in soil gas surveys.

Prior Remedial Action Activities

Based on the results of the 2006 Phase II ESI, a NYCDEP-approved RAP was developed by TRC dated August 2007, which was implemented during construction of Citi Field to address regulatory requirements relating to the management of excavated soil and dewatered groundwater, clean soil cover requirements, a sub slab methane venting and monitoring system, and site-specific environmental health and safety plan requirements during construction. TRC also prepared an Environmental Health and Safety Plan (HASP), dated August 2007.

At the conclusion of remediation for the Citi Field redevelopment project, a NYCDEP-approved Remedial Closure Report (RCR) was prepared by TRC, dated September 2010. The RCR summarizes the remedial activities completed, including removal and proper disposal of contaminated soil and fill material in accordance with New York State Department of Environmental Conservation (NYSDEC) regulations, installation of a sub-slab gas venting and monitoring system, and installation of certified clean fill/topsoil cap in landscaped/grass covered areas not capped with concrete/asphalt.

In connection with a public infrastructure improvement project for the redevelopment of Willets Point, a March 7, 2011 Draft Site Investigation Findings Report was developed by EMP. The Site Investigation was performed on portions of the Development Site along Shea Road between Seaver Way and the Grand Central Parkway. The Findings Report was submitted to NYCDEP, which requested that a RAP and a site-specific Construction Health and Safety Plan (CHASP) be submitted to NYCDEP for review and approval and an additional investigation be conducted once plans were available.

Figure 10-1 Phase II Environmental Site Investigation and Site Investigation Findings Sample Location Map



PHASE II ESI SOIL BORING LOCATION (FEBRUARY 2006, AKRF)

PHASE II ESI MONITORING WELL (FEBRUARY 2006, AKRF)

DRAFT SITE INVESTIGATION FINDINGS REPORT SOIL BORING LOCATION (MARCH 2011, EPM)

DRAFT SITE INVESTIGATION FINDINGS REPORT SOIL BORING LOCATION WITH TEMPORARY MONITORING WELL (MARCH 2011, EPM)

NOTES:
1. BASEMAP IS FROM PROPOSED DEVELOPMENT PLANS COMPLETED BY SHoP ARCHITECTS, DATED MARCH 2024
2. SOIL BORING LOCATIONS AND PROPERTY BOUNDARIES ARE APPROXIMATE
3. DEVELOPMENT FOOTPRINTS FOR ILLUSTRATIVE PURPOSES ONLY

Summary

Based on the documents reviewed, the environmental concerns identified for the Development Site are summarized in the following sections. While supplemental characterization of subsurface conditions at specific areas of ground disturbance at the Development Site will likely be required by OER pursuant to the (E)-designation, the nature of the subsurface environmental impacts at the Development Site is not expected to change significantly from the following.

Fill Constituents

The Development Site has been filled with a variety of material since the early 1900s, including areas of coal furnace and incinerator ash and areas with 8-12 feet of artificial fill. Based on analytical data from the prior sub-surface investigations, SVOC and metal concentrations are highly variable across the Development Site but do exceed regulatory standards at some locations. Given these observations, the Development Site is considered impacted with historic fill constituents commonly found in New York City.

Potential Petroleum Impacts

The 2010 RCR for Citi Field (which is not part of the Development Site and cross-gradient) indicated that petroleum impacted soil and groundwater was encountered during construction of Citi Field in 2008. While the location of these impacts was not indicated in the RCR, and the extent of these conditions are not known, similar conditions may be present on the Development Site. Additionally, stained and odorous soil were identified in the vicinity of the sewer line generally following Shea Road north and east of Citi Field. However, sample analytical data did not reveal petroleum-related VOC impacts, and SVOC concentrations were mostly typical of fill material encountered throughout New York City. MTBE, a gasoline additive, was detected in groundwater above the applicable groundwater standard. Given these prior observations, there is a potential for petroleum impacted soil and/or groundwater to be encountered during construction activities, though the extents are not expected to be widespread.

Potential Underground Storage Tanks

Based on the findings of the geophysical survey summarized in the Langan August 16, 2023 Phase I ESA Addendum, one UST-like anomaly was identified on the northside of Roosevelt Avenue (about 100 feet northwest of the defunct NYCT substation). However, there may be additional USTs at the Development Site that were not identified in the prior environmental reports. Therefore, there is a potential for encountering USTs during redevelopment construction activities.

Methane and VOCs in Soil Vapor

Elevated methane concentrations in soil vapor, attributed to decomposition of organic material in the former marshland, have been documented at the Development Site. Additionally, some petroleum-related VOCs in soil vapor have been documented at the Development Site. Given these observations, soil vapor at the Development Site is considered to be impacted by methane and VOCs.

Potential Impacts from Off-site Sources

The adjoining properties to the south and east of the Development Site have historically included auto repair services, gasoline filling stations, and bus garage/depots with petroleum bulk storage.

Undocumented releases of petroleum products or hazardous substances at these locations may have migrated and impacted groundwater and/or soil vapor at the Development Site. The ongoing Willets Point Development Project (east of the Development Site) is remediating some of the impacts associated with the noted off-site uses. However, given these observations, there is potential for soil and groundwater at the Development Site to be impacted from off-site sources, though the extents are not expected to be widespread.

No-Action Condition

Absent the Proposed Actions, it is assumed that the Development Site would continue operating under existing conditions; it would remain as a paved parking area for Citi Field under the current lease agreement with the City. The surface parking lots currently contain 7,423 parking spaces. Several new developments will be completed within the study area by the 2030 analysis year. These include developments associated with the Willets Point Development Project to the east of the Development Site and several nearby infrastructure improvements. No environmental remediation or mitigation would be performed.

With-Action Condition

As detailed in **Chapter 1, Project Description**, the Proposed Action would facilitate the redevelopment of the Development Site with up to approximately 3.7 million square feet of new construction, with destination entertainment that includes a gaming facility, music hall, a hotel with up to 2,300 rooms, convention and meeting space, restaurant and retail space, and office and community facility space. The Proposed Action would also include at least 20 acres of public park space, amenity space for the hotel, and structured parking facilities to accommodate up to 13,750 spaces. The structures associated with the Proposed Action include at least one level of ventilated parking at the lowest level. While the design of the Proposed Project will undergo further development, the lowest parking elevation is expected to be at or slightly below existing grade, and minimal occupied space at or below existing grade is anticipated.

While additional characterization of the subsurface conditions will be necessary to supplement the existing data, the nature of the subsurface environmental impacts at the Development Site is not expected to change significantly from what is presented herein. A subsurface RI would be undertaken to supplement the existing known subsurface contamination relating to the conditions identified in this assessment for the specific areas of subsurface disturbance identified in the design document(s). The RI would characterize these areas for the contaminants described herein (i.e. fill constituents, potential petroleum impacts, potential underground storage tanks, methane and VOCs in soil vapor, and potential impacts from off-site sources).

Subsurface contaminants would subsequently be addressed through the development and implementation of a RAWP and CHASP under the jurisdiction of OER. This would mitigate potential risk and exposure relating to the presence of hazardous materials in the subsurface by implementing institutional and/or engineering controls, as necessary.

The following elements will be included in the remedial approach presented in the RAWP, as necessary:

› Excavate, handle, transport, and dispose of excavated fill in accordance with New York State Department of Environmental Conservation (NYSDEC) regulations Part 360: Solid Waste

Management Facilities and Part 364: Waste Transporter Permits, and other applicable local, state, and federal regulations;

- Import of backfill for excavations and raising site grade, as necessary, in compliance with applicable laws and regulations;
- Register and remove petroleum storage tanks encountered during excavation, in accordance with NYSDEC requirements;
- Implement a Community Air Monitoring Plan and dust/odor control;
- Install appropriate soil vapor mitigation system(s) beneath the proposed buildings;
- Cap the site with impervious surface cover (e.g., concrete, asphalt, pavers) and/or a minimum of two feet of clean material; and
- A Site Management Plan (SMP) that describes management of the institutional controls and engineering controls following completion of the remediation.

Additionally, the following elements will be included in the CHASP for construction activities to protect workers and the community from potentially significant adverse impacts associated with contaminated soil and/or groundwater:

- A job hazard analysis that identifies and evaluates potential hazards (e.g. chemical, physical, biological, etc.) for specific tasks;
- Specification of necessary personal protective equipment (PPE) for different tasks and site conditions along with requirements for worker training, certifications, and medical monitoring;
- Site control measures including the procedures for site security and control, including signage, barriers, and restricted areas and strategies, to minimize worker exposure to hazardous substances;
- Emergency response plan, including emergency response procedures such as evacuation routes, assembly points, and emergency contact information; and
- Measures to protect nearby residents and the environment from adverse impacts of site activities.

In addition to implementing the RAWP and CHASP, regulatory requirements relating to asbestos, lead-based paint and PCBs in building materials would be followed as part of standard demolition practices.

(E)-Designation

The Proposed Action would include an (E)-Designation (E-834) for hazardous materials for Block 1787, Lot 1 and 20 and Block 2018, Lot 1500, which would be applied to the Development Site. Applying an (E)-Designation for hazardous materials provides a mechanism to conduct supplementary site investigation and regulatory oversight of future remedial action that would reduce or eliminate the potential for future risk or exposure as it relates to hazardous materials and the conditions identified in this assessment. The Applicant would be responsible under the terms of a lease agreement for any testing and/or remediation required for the Block and Lots listed above under the provisions of New York City Zoning Resolution Chapter 1, 11-15 and the requirements of NYC R.R.§ 43-1473. Implementation of the hazardous materials (E)-Designation on the Development

Site would be conducted under the supervision of OER[1]. The applicable text for the (E)-Designation to be applied to the Development Site would be as follows:

Task 1: Sampling Protocol

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

No sampling should begin until written approval of a protocol is received from OER. The number and location of sample sites should be selected to adequately characterize areas of subsurface disturbance and the specific source of suspected contamination (i.e., petroleum-based contamination and non-petroleum-based contamination). The characterization should be complete enough to determine what remediation strategy (if any) is necessary after review of the sampling data. Guidelines and criteria for selecting sampling locations and collecting samples are provided by OER upon request.

Task 2: Remediation Determination and Protocol

A written report with findings and a summary of the data must be submitted to OER after completion of the testing phase and laboratory analysis for review and approval. After receiving such results, a determination is made by OER if the results indicate that remediation is necessary. If OER determines that no remediation is necessary, written notice shall be given by OER.

If remediation is indicated from the test results, a proposed Remedial Action Work Plan (RAWP) must be submitted to OER for review and approval. The applicant must complete such remediation as determined necessary by OER, in accordance with the approved RAWP. The applicant should then provide proper documentation that remedial action has been satisfactorily completed.

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

[1] Should the Proposed Project not proceed, the E-Designation would be removed from the subject Block and Lots. Any future development would be fully subject to applicable requirements for hazardous waste investigation and remediation in effect at that time.