

A. INTRODUCTION

This chapter addresses potential adverse effects of hazardous materials associated with construction of the proposed project, including the potential presence of subsurface hazardous materials (in soil and/or groundwater) that would be disturbed during construction. The project area has a history of commercial/industrial and residential uses. Any required disturbance to bridges, elevated roadways, or buildings could entail addressing any asbestos and/or lead-based paint (LBP) or lead-containing paint (LCP) that might be present on those structures and disturbed during construction. This chapter addresses the potential effects of hazardous materials and any remediation that may be required during construction.

B. PRINCIPAL CONCLUSIONS

During the subsurface investigation of the project area, subsurface contamination consistent with historical manufactured gas plants (MGPs) and other sources of petroleum waste were found in both soil and groundwater. These contaminants, including MGP-related free product (also known as non-aqueous phase liquid or NAPL), were found in Project Area One (predominately in the northern portion) and throughout the majority of Project Area Two. Three nearby former MGPs (historically known as East 11th Street Works, East 14th Street Works, and East 21st Street Works) have been or are being investigated and, as deemed necessary by the New York State Department of Environmental Conservation (NYSDEC) to protect human health or the environment, remediated by the Consolidated Edison Company of New York (Con Edison). These activities were being conducted under the former NYSDEC Voluntary Cleanup Program (VCP) (Sites V00534, V00535, and V00536) and now, following termination of the VCP statewide by NYSDEC, under an Order on Consent and Administrative Settlement with NYSDEC.

Within the northern portion of Project Area Two, adjacent to the Asser Levy Recreation Center building, there is known petroleum contamination from a No. 2 fuel oil release (open-status NYSDEC Spill No. 0814102). Additionally, within the northern portion of Project Area Two, at Solar One in Stuyvesant Cove Park, there is known gasoline and No. 6 fuel oil contamination (NYSDEC Spill No. 9506959). Both of these spills have active remediation systems.

In addition, throughout the project area, historical fill material of unknown origin was encountered throughout the borings, as expected. Laboratory analysis found, as is typical with historical fill material, variable, and sometimes elevated levels of a range of contaminants—especially certain metals and semivolatile organic compounds (SVOCs).

NO ACTION ALTERNATIVE (ALTERNATIVE 1)

Under the No Action Alternative, no new comprehensive coastal flood protection systems would be implemented within the project area. However, several projects planned or under construction

in the project area might disturb the subsurface and any hazardous materials present there, and potentially increase pathways for human or environmental exposure. These projects are subject to applicable regulatory requirements.

PREFERRED ALTERNATIVE (ALTERNATIVE 4): FLOOD PROTECTION SYSTEM WITH A RAISED EAST RIVER PARK

The Preferred Alternative has the potential to disturb hazardous materials in existing structures and the subsurface, as it would involve demolition and excavation activities. However, with the implementation of appropriate measures governing the construction (such as air monitoring, proper storage and handling of materials, and, if required, odor suppression), the potential for significant adverse effects related to hazardous materials would be avoided.

OTHER ALTERNATIVES

The Flood Protection System on the West Side of East River Park – Baseline Alternative (Alternative 2), The Flood Protection System on the West Side of East River Park – Enhanced Park and Access Alternative (Alternative 3), and The Flood Protection System East of FDR Drive (Alternative 5) would be similar in terms of all having the potential to disturb hazardous materials in existing structures and the subsurface, as they all involve demolition and excavation activities. Any potential for construction-phase effects would be avoided in the same manner as described for the Preferred Alternative. However, the level of disturbance within East River Park and the importation of fill materials would be substantially less for Alternatives 2 and 3, as compared to the Preferred Alternative.

C. ENVIRONMENTAL EFFECTS

Chapter 5.7, “Hazardous Materials,” describes the regulatory context related to hazardous materials, summarizes the existing conditions in the project area, and assesses the potential environmental concerns related to hazardous materials following construction of the proposed project. The discussion below focuses on the potential effects of construction of the proposed project on hazardous materials and how applicable federal, state and local laws and guidelines would be complied with. As all alternatives that include implementation of the proposed project (i.e., Alternatives 2 through 5) involve substantial demolition, excavation, and general subsurface disturbance, the bulk of the potential effects, and methods that would be employed to mitigate those effects are described below under the Preferred Alternative. Discussions of Alternatives 2, 3, and 5 highlight issues specific to those particular alternatives, as necessary. This chapter focuses on potential human health effects. Potential effects on natural resources are assessed in Chapters 5.6, “Natural Resources,” and 6.5, “Construction—Natural Resources.”

NO ACTION ALTERNATIVE (ALTERNATIVE 1)

As described in **Appendix A1**, there are a number of projects planned or currently under construction in the project area. These projects are independent of the proposed project and include the Pier 42 project and the Solar One Environmental Education Center project. These projects are subject to applicable regulatory requirements.

PREFERRED ALTERNATIVE (ALTERNATIVE 4): FLOOD PROTECTION SYSTEM WITH A RAISED EAST RIVER PARK

Construction of the Preferred Alternative requires both demolition and subsurface disturbance, which can increase exposure to hazardous materials if conducted without proper controls. The demolition and subsurface disturbance required, and controls/measures that would be implemented, are described below.

To build the shared-use flyover bridge, shafts would be drilled extending to bedrock. This would likely entail additional soil disturbance and, for some of the flyover shafts, sediment disturbance. Testing of soil/sediment and groundwater would be conducted once the shaft locations are determined and any required sediment testing would be performed as a required in the permits issued by NYSDEC and the U.S. Army Corps of Engineers (USACE).

DEMOLITION

Limited demolition of existing above-grade structures (such as fencing) would be required. This work, at a minimum, would conform to the following regulatory requirements (additional requirements may be incorporated into the project specifications):

- Prior to any demolition activities with the potential to disturb (aboveground or underground) petroleum storage tanks, these tanks would be properly closed and removed, along with any contaminated soil, in accordance with applicable regulatory requirements and guidelines including NYSDEC spill reporting and tank registration requirements. If tanks are unexpectedly discovered, they would be properly registered, if required, with NYSDEC and/or the New York City Fire Department. The NYSDEC Petroleum Bulk Storage registrations would be maintained with tank status.
- Prior to any demolition activities, an asbestos survey would be completed by qualified persons, unless information exists to indicate that suspect asbestos-containing materials (ACM) do not contain asbestos. All ACM that would be disturbed by demolition would be removed and disposed of in accordance with local, state, and federal regulations and guidelines.
- Any demolition activities with the potential to disturb positively identified or suspected LBP/LCP would be performed in accordance with the applicable Occupational Safety and Health Administration regulation (OSHA 29 CFR 1926.62—Lead Exposure in Construction).
- Unless labeling or laboratory testing data indicates that suspected polychlorinated-biphenyls (PCB)-containing fluorescent lighting fixtures, transformers, or other electrical equipment do not contain PCBs, disposal would be performed in accordance with applicable federal, state, and local regulations and guidelines, including but not limited to 40 CFR Part 761, the EPA regulations implementing the Toxic Substances Control Act (TSCA). Similarly, without labeling or laboratory testing data to indicate that fluorescent lights and older thermostats do not contain mercury, disposal would be performed in accordance with applicable federal, state, and local regulations and guidelines,
- Disposal of chemicals would be done in accordance with applicable regulations and guidelines.

MGP-RELATED RECOVERY WELLS

Although the proposed project would include below-grade elements (e.g., foundations of the flood walls and solidification of the shoreline) that would be expected to impede the flow of MGP wastes (associated with the former MGPs and identified in the project area subsurface investigations), there is a possibility that flow the new elements would result in migration of contamination to areas not currently affected by MGP wastes. In an effort to reduce this potential migration a series of MGP-related recovery wells are anticipated to be installed in certain affected areas in conjunction with project construction, landward (west) of the proposed alignment. At the surface, most likely only a manhole-sized cover would be visible. Access to these wells by trained personnel would be required (during which time public access to the immediate vicinity would be restricted), typically for an hour or so monthly or less frequently (perhaps more frequently shortly after installation and during project construction). These wells would extend below the water table, deeper than the flood protection system foundations. These wells would be used to recover (i.e., actively pump/vacuum or hand bail) MGP residual materials from the subsurface. In accordance with a Memorandum of Agreement with NYSDEC,¹ a Mitigation Work Plan (MWP)² proposing these activities was previously submitted to NYSDEC for implementation in conjunction with the proposed project. However, it will be revised based upon project design changes since the previous version was submitted, and resubmitted to NYSDEC for approval. This revised plan will be approved prior to the start of construction.

SUBSURFACE DISTURBANCE

The Preferred Alternative would involve soil disturbance for foundation construction; utility relocation/installation (including construction of interceptor gates and modifications to existing combined sewer infrastructure and Con Edison utility lines); and reconstruction of three pedestrian bridges (Corlears Hook, Delancey Street, and East 10th Street Bridges). The exact depth of excavation required for the Preferred Alternative would depend on construction details (e.g., conflicts with other infrastructure), which will be determined during final design.

All soil and groundwater management during construction would be implemented in accordance with a project Remedial Action Plan (RAP), which would be approved by DEP. As discussed above, MGP contamination has been found in the project area, and management of this material would be incorporated into the MWP, as would required health and safety procedures.

Both agencies would also need to approve Site Management Plans (SMPs), addressing post-construction requirements. The DEP SMP would address site-wide inspection and maintenance of the cap and procedures to be followed should excavation or other disturbance beneath the cap be required. The NYSDEC MGP-SMP would address additional procedures to be followed should MGP materials need to be disturbed, as well as operation and maintenance of the MGP-related recovery wells. It is anticipated that these plans would be approved during project construction.

¹ Memorandum of Agreement between New York State Department of Environmental Conservation and The City of New York, Index No.: CO 2-20170614-01

² Mitigation Work Plan for Manufactured Gas Plant-Related Non-Aqueous Phase Liquid Contamination, prepared for DDC by AKRF, Inc., October 30, 2017.

The entire project area includes a layer of fill material of unknown origin, even in areas not contaminated by wastes from historical MGPs or petroleum spills. Although testing did not indicate widespread contamination in this fill, localized areas with elevated metals, such as lead, were found and may be present in other locations not tested. Project-related excavation could disturb these soils and potentially increase pathways for human or environmental exposure.

Based on the testing and other available information discussed above, shallow subsurface soil contamination is known to be present in certain areas and possibly present in other locations not tested. However, the levels of contaminants in the shallow subsurface are generally lower than those in soils below the water table, especially in areas close to the former MGPs. This is because MGP contamination includes compounds denser than water, allowing it to migrate below the water table. Where construction requires dewatering—which is more likely for the L-walls than for levees, landscaped berms, or sheetpile walls—testing indicated pre-treatment of the removed water would be required prior to its discharge, particularly in areas affected by the former MGP operations.

The RAP and CHASP are to be submitted to DEP for review and approval. The potential effects associated with subsurface disturbance of soil and groundwater would be mitigated by performing the excavation-related procedures in accordance with the MWP, RAP, and CHASP during construction. The MWP and RAP would outline soil management procedures, described below, including appropriate clean fill importation criteria (both for surface soils in landscaped areas and for other material that would be beneath landscaping or paving) and criteria for allowable reuse of excavated soils (whether in the uppermost layer of landscaped areas or elsewhere), handling, stockpiling, testing, transportation, and disposal of excavated materials, including any unexpectedly encountered contaminated soil and petroleum storage tanks, in accordance with applicable regulatory requirements. The CHASP (and the health and safety procedures in the MWP) would ensure that soil disturbances are performed in a manner protective of workers, the community, and the environment, including procedures for odor, dust, and nuisance control.

In addition to the soil management procedures, if dewatering is required, the discharges must comply with DEP and/or NYSDEC regulatory requirements and administrative guidelines. The results of analyses performed for the DEP's groundwater discharge parameters indicated that the only exceedance of the DEP limits for effluent to the sanitary/combined sewer system was for total suspended solids (TSS) indicating the potential need for treatment in the form of settling and/or filtration prior to discharge. However, the groundwater samples were collected from shallow temporary wells, and based on the findings of the deep soil samples and Con Edison data for deeper wells located inland of the project area, there is likely more extensive deeper groundwater contamination. Therefore, it is probable that groundwater pumped during construction throughout much of the project area, especially in the vicinity of the former MGP facilities, would require treatment for organic compounds, e.g., by using oil-water separators and/or absorption on granulated activated carbon, before discharge.

SOIL MANAGEMENT PROCEDURES

The RAP would include procedures for soil screening, excavated material characterization, disposal, demarcation, stockpiling, material reuse, backfill and cover soil import, water and other fluid management, and a contingency plan, as further described below. The MWP would include appropriate procedures, specific to the management of MGP-contaminated material.

Soil Screening Methods

Visual, olfactory, and instrument-based soil screening would be performed under the supervision of a Qualified Environmental Professional during construction that involves subsurface disturbance. Soils would be segregated based on screening results, existing environmental data, and additional data (e.g., waste characterization) into material intended for off-site disposal, material intended for re-use as backfill material, and material requiring further sampling and testing.

Characterization of Excavated Materials Intended for Disposal

Material to be transported off-site for disposal would be sampled in a manner required by the receiving facility, and in compliance with applicable laws, regulations and guidelines.

Off-Site Transportation and Disposal

As discussed in Chapter 6.0, “Construction Overview,” off-site transportation could be accomplished through a combination of trucks and barges.

Outbound trucks would be inspected and cleaned, if necessary, before leaving the site; access/egress points for trucks and equipment would be kept clean of site-derived materials. Exit locations would be inspected daily for evidence that soil is being transported off premises. Truck wash facilities would be used as necessary to limit soil transport onto adjacent streets, and adjacent streets would be cleaned, as needed. Loaded vehicles leaving the site would comply with all applicable materials transportation requirements (including appropriate covering, manifests, and placards) in accordance with applicable laws, regulations, and guidelines. Material transport to the site would be regimented and scheduled to minimize truck queuing. A manifest-based tracking system would be used to document the proper management of material to its destination. Truck transport routes would consider the following: (1) limiting transport through residential areas and near sensitive sites; (2) using mapped truck routes; (3) using schedules to minimize or avoid queuing of trucks entering the work area; (4) limiting total distance to major highways; (5) promoting safety in access to highways; and (6) increasing overall safety in transport. All material would be managed as regulated material and would be disposed in accordance with applicable laws, regulations and guidelines. A documentation/manifest process would be used to document conformance with applicable laws, regulations and guidelines.

Barges would be loaded at predetermined locations to reduce traffic on-site and in the surrounding neighborhood. Loaded barges leaving the site would comply with applicable materials transportation requirements (including required covering, manifests, and placards), which are generally similar to truck transportation but there would also be U.S. Coast Guard and, depending on the type of waste, NYC Fire Departments requirements that would have to be followed.

Stockpile Methods

Stockpiles of excavated material would be used only when necessary and would be removed as soon as practicable. While stockpiles are on site, they would be inspected daily, and before and after every storm event to ensure they are not subject to excessive erosion. Stockpiles of soil exhibiting evidence of contamination would be at minimum placed on double layers of 8-mil polyethylene sheeting, which would keep contaminated soil from contact with other material, and covered with anchored plastic tarps when not being loaded/unloaded. Stockpiles would be

surrounded with rigid barriers and/or silt fencing. Excavated materials from suspected areas of contamination would be separated from materials intended for re-use. Imported materials would be stockpiled separately. All stockpile areas would be kept free of standing water. Stockpiles would be managed to control run-off in accordance with applicable regulatory requirements. Stockpiles would be located away from the East River and property boundaries, where possible.

Materials Reuse On-Site

Site soil and fill intended for reuse on-site beneath impervious paving or a two-foot clean soil cover layer would be managed in accordance with NYSDEC's requirements for beneficial reuse, found at 6 NYCRR 360-1.15(b)(8). These requirements apply to "*Nonhazardous, contaminated soil which has been excavated as part of a construction project... and which is used as backfill for the same excavation or excavations containing similar contaminants at the same site,*" with the additional project-specific provisions that such material be only used above the (seasonal high) water table. Soil meeting the definition of hazardous wastes or containing petroleum, MGP, or other gross contamination (e.g., visibly contaminated or petroleum/chemical odors) would not be reused, but would rather be disposed of off-site at an appropriately licensed waste disposal facility. Organic matter (wood, roots, stumps, etc.) or other waste derived from clearing and grubbing would not be reused, but rather would be disposed of or recycled off-site at an appropriately permitted facility. Re-use of materials within the two-foot soil cover layer would require sampling and testing to demonstrate compliance with 6 NYCRR Part 375 Residential and Protection of Groundwater Soil Cleanup Objectives (SCOs). Testing would be in accordance with NYSDEC DER-10 *Technical Guidance for Site Investigation and Remediation*, Table 5.4(e) 10, unless approval from NYSDEC has been obtained for alternative requirements.

Importation of Backfill and Cover Soil from Off-Site Sources

It is expected that large volumes of soil (approximately 775,000 cubic yards) may be required as excavation backfill, for raising the grades and as clean cover/cap material in new landscaped areas of the park. The source(s) of this fill have not yet been determined, but evaluation of imported soils would include examination of the source location's current and historical use(s), and any applicable documentation. Materials from industrial sites, spill sites, environmental remediation sites, or other potentially contaminated sites would not be used. Testing proposed for imported soils would be conducted in accordance with DER-10 Table 5.4(e) 10, unless regulatory approval has been obtained for alternative requirements. In excavated areas, imported materials to be used either below or as a part of the surface clean cover layer would comply with the 6 NYCRR Part 375 Residential and Protection of Groundwater SCOs, though, in accordance with DER-10, the following material may be used without testing (beneath cap only), provided that it contains less than 10 percent by weight material which would pass through a size 80 sieve: virgin quarried material, clean recycled concrete aggregate derived from recognizable and uncontaminated concrete from facilities permitted or registered by NYSDEC. Testing requirements for soil from the NYC Office of Environmental Remediation (OER) New York City Clean Soil Bank would be in accordance with a NYSDEC Beneficial Use Determination and also in accordance with DER-10 Table 5.4(e) 10.

Imported Material Screening and Testing

Materials would be subject to inspection, as follows: trucks would be in compliance with applicable laws, regulations, and guidelines and would enter the site at designated locations; material would be inspected for evidence of contamination using visual, olfactory, and instrument-based screening for evidence of contamination; material would be free of solid waste,

including paving materials, construction debris, municipal waste, stumps, roots, and other organic matter, as well as ashes, oil, perishables, or foreign matter. Five-part composite samples and discrete grab samples would be collected from the segregated stockpile at the source, at the frequency required in DER-10 Table 5.4(e)10 (unless approval from DEP, as part of the RAP, or in writing thereafter, has been obtained for alternative requirements) and analyzed in a laboratory, for the following: volatile organic compounds (VOCs) by United States Environmental Protection Agency (USEPA) Method 8260C (rev. 2006) (grab, not composite sample); SVOCs by USEPA Method 8270D (rev. 2007); Pesticides by EPA Method 8081B (rev. 2000); PCBs by USEPA Method 8082A (rev. 2000); and Target Analyte List Metals by USEPA Method 6010C (rev. 2007). The laboratory results would be provided to DEP for their review and approval. In addition to laboratory data, the following would be provided to DEP: a summary of samples collected and analyzed; tabulated data and comparison to the SCOs; analytical data sheets and chain of custody documentation; a summary of anticipated quantity (tons/cubic yards) proposed for import; photographs of the segregated stockpile with sampling locations identified; an affidavit from the source/facility on their letterhead stating that the segregated stockpile has been properly maintained and complies with the requirements above; and a copy of source/facility state permit.

Water and Other Fluids Management

Due to proximity to the East River, and elements of construction requiring deep excavation, substantial dewatering is anticipated. All liquids removed from the site would be handled, transported, and disposed of at a qualified off-site waste disposal or treatment facility in accordance with applicable laws, regulations and guidelines. Discharge to the New York City sewer system will require an authorization and sampling data demonstrating compliance with the City's discharge criteria, possibly following pre-treatment such as settling for suspended solids and/or use of an oil-water separator and/or with activated carbon for removal of organics. Direct discharge to the East River or to sewers or outfalls draining to surface water rather than a wastewater treatment plant would require a NYSDEC permit. Limited dewatering fluids could also be managed at an off-site treatment facility.

Contingency Plan

Given the unknown origin of the fill material, the discovery of unknown structures or contaminated media during excavation is possible. Any such findings would be reported to the appropriate regulatory and/or emergency management agencies. Petroleum spills would immediately be reported to the NYSDEC Spill Hotline. Petroleum tanks would be addressed in accordance with applicable NYSDEC requirements, including those relating to spill reporting and tank registration.

Odor Control

Excavation, especially in areas with MGP contamination, can result in odor concerns, as well as health and safety issues. All necessary means would be employed to prevent on- and off-site odor nuisances, including the following: (1) limiting the area of open excavations; (2) shrouding open excavations with tarps and other appropriate covers; and/or (3) using foams to cover exposed odorous soils. If odors cannot otherwise be controlled, additional means to eliminate odor nuisances include direct load-out of soil to trucks for off-site disposal and chemical odorants in spray or misting systems. Appropriate regulatory agencies would be notified of any such odor issues. In addition, during excavation/and loading of any hazardous waste or MGP-contaminated or petroleum-contaminated soil, real-time vapor monitoring would be performed

through a Community Air Monitoring Program (CAMP). If necessary, additional odor mitigation measures as approved by NYSDEC and outlined in the MWP would be implemented during disturbance of MGP materials.

Dust Control and Monitoring

Dust management during soil-disturbing work would include the following: (1) use of water spray for roads, trucks, excavation areas and stockpiles; (2) use of anchored tarps to cover stockpiles; (3) use of truck covers during soil transport within site limits and during off-site transport; (4) employment of extra care during dry and/or high-wind periods; (5) use of gravel or recycled concrete aggregate on egress and other roadways to provide a clean and dust-free road surface; and (6) use of a truck wheel wash at site access/egress points to prevent fugitive dust and off-site migration of dust and other particulates. The source(s) of any dust emissions would be identified and addressed immediately and appropriately. In addition, during excavation/and loading of any hazardous waste or MGP-contaminated or petroleum-contaminated soil, real-time dust monitoring would be performed through a CAMP. If necessary, additional dust mitigation measures as approved by NYSDEC and outlined in the MWP would be implemented during disturbance of MGP materials.

CLOSEOUT DOCUMENTATION

Following completion of the demolition and soil disturbance associated with construction, a Closure Report would be prepared documenting compliance with the MWP, RAP, and the CHASP. The Closure Report would include documentation of off-site soil disposal, imported material, locations of clean soil cap, and other relevant information. Two SMPs would also be prepared: one for DEP addressing inspection and maintenance of the cap and procedures to be followed should excavation or other disturbance beneath the cap be required and the other for NYSDEC addressing additional procedures to be followed should MGP materials need to be disturbed, as well as operation and maintenance of the MGP-related recovery wells. These documents would be subject to agency approval.

OTHER ALTERNATIVE (ALTERNATIVE 2): FLOOD PROTECTION SYSTEM ON THE WEST SIDE OF EAST RIVER PARK – BASELINE

Compared with the Preferred Alternative, Alternative 2 would have substantially less volume and areal extent of soil disturbance and excavation within East River Park. This alternative would not include the removal and replacement of the existing bulkhead and the park's underground water and drainage infrastructure (including existing stormwater outfalls).

The procedures related to soil and groundwater management during construction to minimize adverse construction effects associated with this alternative would be similar to those described for the Preferred Alternative. A system of MGP-related recovery wells would also be installed. Additional soil testing is expected to be required related to soil management during construction, including waste characterization testing that will need to be performed shortly before construction to determine the most appropriate off-site soil disposal facilities for soils that are contaminated or otherwise excess.

OTHER ALTERNATIVE (ALTERNATIVE 3): FLOOD PROTECTION SYSTEM ON THE WEST SIDE OF EAST RIVER PARK – ENHANCED PARK AND ACCESS

Soil disturbance under Alternative 3 would be of a similar type to that described above for the Preferred Alternative, with the exception of the level of disturbance within East River Park and a lesser importation of fill materials. This alternative would also not include the removal and replacement of the existing bulkhead and the park's underground water and drainage infrastructure (including existing stormwater outfalls). A system of MGP-related recovery wells would be installed. The procedures to minimize the potential for adverse construction-phase effects (associated with demolition and subsurface disturbance) related to hazardous materials would be similar to those described above for the Preferred Alternative.

ALTERNATIVE 5 – FLOOD PROTECTION SYSTEM EAST OF FDR DRIVE

Alternative 5 changes the alignment and the area of soil and groundwater disturbance. However, the level of activities required to construct the raised FDR Drive platform would not represent a substantial change in disturbance as compared to the construction of flood protection elements described in the other alternatives. Therefore, the procedures to minimize the potential for adverse construction-phase effects associated with demolition and subsurface disturbance would be similar to Alternatives 2 through 4.

D. MITIGATION MEASURES

As described above, construction of the proposed project has the potential to disturb hazardous materials due both to demolition and excavation. Demolition would be addressed in accordance with the existing regulatory programs, e.g., for asbestos-containing materials (ACM) and LBP. Asbestos surveys would be completed by a qualified individual/contractor, and all ACM that would be disturbed by the demolition would be removed in advance, accordance with local, state, and federal regulations and guidelines. LBP would be addressed in accordance with applicable regulatory requirements including OSHA *Lead in Construction* requirements. If PCBs, or mercury containing fluorescent lights or older thermostats require removal, disposal would be performed in accordance with applicable regulations and guidelines. In addition, disposal of any chemicals would be performed in accordance with applicable local, state, and federal regulations and guidelines.

To avoid any impacts due to the potential presence of subsurface hazardous materials during project construction, the following measures would be included as part of the construction specifications:

- A Materials Handling Plan that covers the management, handling, transportation, and disposal of non-hazardous contaminated soils, regulated hazardous wastes, and all other soil/fill would be prepared and submitted to DDC for review and approval.
- It is expected that dewatering would be necessary for construction of the proposed project. If dewatering is proposed to discharge into a New York City sewer, then a DEP Sewer Discharge Permit must be obtained in advance of dewatering. In addition, any discharges proposed to the East River, either directly or via a storm sewer, must comply with NYSDEC effluent discharge limitations and a NYSDEC SPDES permit will likely be required. Pretreatment may also be required prior to discharge. It is expected that additional water sampling would also be required as part of the review of these approvals.

- Prior to demolition or excavation activities with the potential to disturb aboveground or underground petroleum storage tanks, the tanks would be properly closed and removed along with any associated contaminated soil in accordance with applicable regulations and guidelines, including NYSDEC spill reporting and tank registration requirements.
- Dust suppression would be employed during excavation, grading and other soil disturbing activities and it is expected that a Community Air Monitoring Plan (CAMP) would be implemented to provide protections for the workers and the surrounding community from potential airborne releases.
- To address contamination in the soil and groundwater during construction, a MWP, RAP, and CHASP would be prepared and submitted to NYSDEC and/or DEP for review and approval. The MWP would provide soil and groundwater management procedures for any excavated material with MGP-related contamination including criteria for identifying, handling, storing, transportation, and disposal of soil and groundwater affected by MGP-related wastes.
- The RAP would provide soil management procedures for all other soils, including soils for filling and grading (including raising the grade of East River Park) and the appropriate clean fill importation criteria; criteria for allowable reuse of soil as backfill; handling; stockpiling; testing; transportation; and disposal.
- The RAP would also address encountering known and unexpected petroleum storage tanks.
- The CHASP, describing worker safety protocols would ensure that subsurface disturbance would be performed in a manner protective of workers, the community, and the environment and would also address odor, dust and nuisance control. The CHASP would include security measures to prevent public access (to areas where soil disturbance is taking place or where other hazards might be present).
- Additionally, to reduce the potential migration of MGP-related contamination, the design plan for recovery wells, as part of the MWP, would be updated and then implemented in conjunction with construction. The MWP would be submitted to NYSDEC for review and approval.
- Both NYSDEC and DEP agencies would also approve SMPs, addressing post-construction requirements. The DEP SMP would address site-wide inspection and maintenance of the cap and procedures to be followed should excavation or other disturbance beneath the cap be required. The NYSDEC MGP-SMP would address additional procedures to be followed should MGP materials need to be disturbed, as well as operation and maintenance of the MGP-related recovery wells.
- ACM and LCP surveys were conducted in 2018 of the East 10th Street Comfort Station, and the East 10th Street and Delancey Street Bridges (Asbestos and Lead Paint Survey Report for East Side Coastal Resiliency, AKRF, Inc., revised June 2018). No ACM was identified in samples collected but ACM may be present in areas that were not accessible. Before any demolition or other disturbance, additional testing would be performed once it is possible to obtain samples from the inaccessible areas and contractor specifications would address the contingency that ACM is hidden or will otherwise not be encountered until later. Lead was detected in nine of the 22 paint chip samples. Demolition or other activities with the potential to disturb lead-based paint and LCP must be performed in accordance with applicable regulations (including OSHA 29 CFR 1926.62-Lead Exposure in Construction). Based on the testing results, all paint on steel components of the East 10th Street Comfort Station and East 10th Street Bridge, and all paint throughout the Delancey Street Bridge

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should be considered to be LCP. Independent of the environmental review associated with the proposed project, management and/or removal of these materials during construction is subject to a large number of federal, state, and local regulatory requirements that would be incorporated into the project documents and contractor specifications. *