6.14 HAZARDOUS MATERIALS

6.14.1 Introduction

Following the methodology described in Section 3.14, "Hazardous Materials" of Chapter 3, "Impact Methodologies," this Section evaluates whether the construction of the shaft at the E. 59th Street/Second Avenue Shaft Site would create an increased potential exposure of the public or the environment to hazardous materials. These substances could include heavy metals, volatile and semivolatile organic compounds, methane, polychlorinated biphenyls (PCBs), and other substances deemed hazardous or toxic by the United States Environmental Protection Agency (USEPA) and/or New York State Department of Environmental Conservation (NYSDEC). Consistent with the guidance presented in the *CEQR Technical Manual*, the hazardous materials assessment evaluates whether past activities in the vicinity of the E. 59th Street/Second Avenue Shaft Site would have resulted in the presence of hazardous materials at the site. Such activities could include land uses known to require the use of such materials, the presence of leaking underground storage tanks, or a history of past spill activity.

A Phase I Environmental Site Assessment (ESA) was conducted in December 2004 (revised in December 2005) to determine the potential for hazardous materials impacts as a result of construction of the shaft at this Shaft Site. The results of the Phase I ESA are summarized in this Section. A Phase II ESA—which involves environmental testing of soil and groundwater in the areas of potential disturbance to determine the presence, type and levels of contaminants that may be present—was not conducted for the EIS, but will be conducted if this Shaft Site is selected and prior to in-ground construction at the Site.

6.14.2 Existing Conditions

Current Site Conditions

The E. 59th Street/Second Avenue Shaft Site is located at the intersection of E. 59th Street and Second Avenue adjacent to the Queensboro Bridge. The Site is immediately bordered by the Queensboro Bridge to the north and east, E. 59th Street to the south, and Second Avenue to the west.

The following conditions were observed at the E. 59th Street/Second Avenue Shaft Site during the preparation of the Phase I ESA:

- The Shaft Site contains no structures and is covered by pavement, asphalt, curbing, and sidewalks.
- There are underground electrical utilities serving lamp posts and traffic signals in the area.
- A bridge overpass is located at the southern end of the Shaft Site.

The water main extension that travels from the Shaft Site along E. 59th Street to the potential First Avenue or Sutton Place water main routes is paved with asphalt and often congested with traffic because of its proximity to the Queensboro Bridge.

The E. 59th Street/Second Avenue Shaft Site and water main extension are located adjacent to a number of heavily traveled roadways including the Queensboro Bridge. As a result, historic deposition of lead from vehicle exhausts is likely to have occurred at the site. In this area, it is also common to find historic fill that contains contaminants such as polycyclic aromatic hydrocarbons (PAHs) from coal ash or other sources of fill material.

Adjacent and Vicinity Land Uses

The E. 59th Street/Second Avenue Shaft Site and water main extension to the potential First Avenue or Sutton Place water main routes are located in an area of commercial, residential and public transportation uses. Land uses immediately adjacent to the Shaft Site and water main extension include the Queensboro Bridge to the north and a high rise residential building with ground-level businesses and the Humane Society to the south across E. 59th Street. Other uses in the vicinity of the Shaft Site include residential buildings with ground floor retail.

Geology and Hydrogeology

Recent geotechnical borings in the area show that bedrock is encountered at approximately 15.5 feet below ground level. During recent monitoring at the preferred Shaft 33B Site immediately to the east, groundwater was encountered from 10 to 15 feet below grade. The general direction of groundwater flow is from west to east towards the East River. Based on topographic maps of the area, the overland flow of water (i.e., storm water and environmental releases) would also flow in a west to east direction.

Records Search

A listing of federal and state environmental enforcement sites in the area of the E. 59th Street/Second Avenue Shaft Site was obtained. The search was conducted to evaluate past and present activities involving hazardous materials on and in the vicinity of the site. The database search identified incident locations or facilities where hazardous materials may be present and are either known to have been released to the environment (e.g., spills, leaks) or may be sources of future releases.

An environmental database search for the E. 59th Street/Second Avenue Shaft Site did not reveal any historic on-site uses of hazardous materials. The environmental database did identify leaking underground storage tanks (LUSTs), reported spills (mostly petroleum products), environmental releases including 1,1,1 trichloroethylene and asbestos all within 0.25 miles of the Shaft Site, but no direct spills or releases at the site. Many of these incidents are identified as having been closed or mitigated. Although there is no history of hazardous materials use at E. 59th Street/Second Avenue Shaft Site, off-site sources of hazardous materials from adjacent properties and the surrounding area may have migrated onto the Shaft Site. Results of the records search for the area within a 0.25-mile radius are provided below.

Resource Conservation and Recovery Information System (RCRIS)

A number of registered hazardous waste generators in the USEPA database are located within 0.25 miles of the Shaft Site, including:

- Four RCRIS Large Quantity Generators
- 17 RCRIS Small Quantity Generators
- 14 RCRIS Conditionally Exempt Small Quantity Generators
- 14 RCRIS Sites with no available information.
- One RCRIS Transporter

NYSDEC Registry of Inactive Hazardous Waste Disposal Sites

There were 23 spills within 0.15 miles and another 29 spills within 0.25 miles of the Shaft Site in the records database updated in December 2004. These spills included:

- Gasoline
- Diesel Fuel
- Motor Oil
- Unknown Petroleum Products
- # 2, #4 and #6 Fuel Oil
- Transformer Oil
- Ethylene Glycol
- A Non-Petroleum Hazardous Material
- Dielectric Fluid
- Asbestos

Emergency Response Notification System (ERNS)

There is one ERNS site indicated in the USEPA database of response action to emergency spill incidents that is located within 0.15 miles of the site. The material reported was asbestos. A second site was located within 0.25 miles of the site and asbestos was also the reported material at this site.

There was one air and surface water reported release site within 0.15 miles and another nine reported release sites within 0.25 miles of the Shaft Site. These sites are a subset of the ERNS database which has impacted only air or surface water. The following materials were reported.

- Asbestos
- Dielectric Fluid
- Diesel Fuel
- Transformer Oil
- Unknown Material

Toxic Release Inventory System (TRIS)

The USEPA's database of all facilities that have had or may be prone to toxic material releases indicates two TRIS sites within 0.25 miles of the site. 1,1,1-Trichloroethane was the material reported at one site. The database did not have any information on the second TRIS site.

Hazardous Materials Incident Response System (HMIRS)

There are eight HMIRS Sites in the US Department of Transportation's database that are located within 0.25 miles of the site; one of these is within 0.15 miles of the site. The following materials were reported:

- #1, #2, #4, #5, and #6 Fuel Oils
- Gasoline
- Three unknown products having ID's: 84093, 24104 and 14196

Regulated Underground and Aboveground Storage Tanks (UST/AST)

There are 23 Regulated UST/AST sites in the NYSDEC database that are located within 0.15 miles of this site and another 23 within 0.25 miles of the site. There are seven LUST sites within 0.15 miles and another 10 within 0.25 miles. The following materials were reported:

- #2, #4, and #6 Fuel Oils
- Gasoline
- Natural Gas
- Diesel Fuel

Historical Uses of the Shaft Site and Adjacent Properties

The following sources were reviewed to obtain information on the history of the Shaft Site from 1892 to the present:

- Sanborn/Fire Insurance Maps
- Aerial Photographs

Sanborn maps are used by the insurance industry to list properties for emergency or claims purposes. As a result, the maps identify properties (e.g., company name, generic title such as filling station, etc.), but generally do not provide detail on the nature of operations that were performed at that location. Nonetheless, since these maps go back as far as the late 1800's for older, more established communities, they are useful for identifying potential hazardous material sites, particularly prior to the era of current environmental regulations.

A total of 17 Sanborn maps were obtained dating from 1892 to the most recent map published in 2003. Review of these maps indicates that prior to construction of the Queensboro Bridge, city Block No.1434 (E. 59th to E. 60th Street between First and Second Avenue) consisted primarily of small, residential/commercial buildings. The block was cleared to construct the Queensboro Bridge. Although the Queensboro Bridge was constructed in the early 1900s, Sanborn maps were

not available from 1907 to 1951, which includes the construction of the Queensboro Bridge. Other development in the area included construction of several high rise apartment buildings.

The conclusions of the historical review indicate that there was no evidence of hazardous materials issues in connection with the history of the Shaft Site. The Phase I ESA also concludes that although there is no history of hazardous materials use at this Shaft Site, off-site sources of hazardous materials from adjacent properties and the surrounding area may have migrated onto the Site. Groundwater hydrogeology at this Shaft Site flows from west to east towards the East River, suggesting that spills west of the site would flow in an easterly direction and represent spills most likely to impact Shaft Site groundwater or soils. Of the 49 spills identified in the environmental database search, 12 spills were located west of the site, adjacent to, or in the immediate vicinity of the site. All of these spills have been closed (cleaned and remediated to original site conditions prior to the spill) by the federal, state or city regulatory agency responsible for providing environmental oversight and regulatory control of the spill incident.

6.14.3 Future Conditions Without the Project

Currently, the soils left undisturbed on the E. 59th Street/Second Avenue Shaft Site do not represent a health or environmental concern in terms of hazardous material exposure to the public at or in the vicinity of the site based on information obtained and reviewed in conducting the Phase I ESA. There are no visible signs of surface contamination that would suggest that incidental contact with the Shaft Site soils would result in human health issues or diminish the environmental quality of the site or surrounding environment. Since there are no other planned construction or related activities that would directly affect the Shaft Site, the subsurface conditions should remain undisturbed in the "Future Without the Project." Therefore it is expected that the present conditions at the site would be essentially the same without the project.

6.14.4 Future Conditions With the Project

If the E. 59th Street/Second Avenue Shaft Site is selected, subsurface soils would be excavated during construction. The subsurface soils may contain contaminants resulting from a number of sources including deposition and infiltration, contamination from off-site sources, and from historic fill material commonly used throughout the City of New York. Therefore, a number of preventative measures will be utilized to minimize exposure to potentially contaminated soils during construction.

Considerably more materials would be removed from this Shaft Site under the surface excavation method than under the raise bore method. The same amount and types of soil would be removed under both methods. However, the surface excavation method would also remove bedrock from this Shaft Site. Since the bedrock would not be contaminated with hazardous materials, there would be no difference in hazardous materials removed from the site under the two methods.

Based on the Phase I ESA for the E. 59th Street/Second Avenue Shaft Site, the areas of potential excavation may contain suspected contaminated soils and groundwater similar to those at the preferred Shaft Site. A Phase II ESA, which involves environmental testing of soil and groundwater in the areas of potential disturbance to determine the presence, type and levels of contaminants that may be present, will be conducted if this Shaft Site is selected and prior to in-ground construction at the Site. Based on the Phase I ESA, the remedial measures are the same as those for the preferred Shaft Site (see Section 4.14, "Hazardous Materials," in Chapter 4, "Preferred Shaft Site") and include:

- Subsurface investigation to determine disposal requirements in accordance with a NYCDEP Bureau of Environmental Planning and Assessment (BEPA)-approved sampling plan;
- Soil removal and disposal off-site in accordance with all applicable Federal, state, and local regulations;
- Implementation of a NYCDEP-approved Construction Health and Safety Plan (CHASP);
- Implementation of an NYCDEP BEPA-approved Remedial Action Plan (RAP); and
- Testing and potential treatment of groundwater from dewatering activities to levels specified in applicable local and state permits.

During the final stage of construction, the site will be filled with certified clean fill that meets all NYSDEC recommended soil cleanup objectives in "Technical and Administrative Guidance Memorandum" (TAGM) #4046 and capped with an impervious surface.

With implementation of the measures discussed above, there would be no potential significant adverse hazardous materials impacts from construction of the shaft.

Activation and Operation

As described in Chapter 2, "Purpose and Need and Project Overview," activating the shaft includes shaft disinfection. During the disinfection step, chlorinated water would flow into the shaft from Tunnel No. 3 and be discharged to the local sewer system until a required chlorine residual was achieved within the shaft; no chlorine would be stored at the Shaft Site. However, prior to discharging the chlorinated water to local sewers, the water may need to be dechlorinated. Treatment of chlorinated water at the Shaft Site would require a maximum of one delivery of sodium bisulfite per day for a period of approximately three to five days. (See Section 4.14, "Hazardous Materials," in Chapter 4, "Preferred Shaft Site" for more information on sodium bisulfite.) The same protective measures outlined in Section 4.14 for the preferred Shaft Site would be implemented at this Shaft Site for the handling, transport, and use of sodium bisulfite.

Operation of the shaft would not require the use of chemicals. Short-term maintenance and repair activities would routinely occur at the Site, as discussed in Chapter 2, "Purpose and Need and Project Overview," but are not anticipated to involve the use of hazardous materials. Based on the nature of sodium bisulfite, the protective measures that would be in place during its use, and the lack of any further chemical use on-site after activation, no potential significant adverse hazardous materials impacts would be anticipated to occur during activation and operation of the shaft.

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