

3.14 HAZARDOUS MATERIALS

3.14.1 Introduction

This Section describes the methodology used to determine the existing conditions, future conditions without the project, and potential hazardous materials impacts associated with the construction and operation of the project. The potential impacts differ based on the various components of the project, including construction of the shaft, construction of the water mains, activation of the shaft, and the operation of the shaft and water mains.

Operation of the shaft would not involve any activities that could potentially generate or release hazardous materials, because no chemicals are used at the site and because ongoing activities at the site involve maintenance visits only. Similarly, no activities would be associated with operation of the water mains. Therefore, no analysis of shaft or water main operations was conducted.

3.14.2 Existing Conditions Methodology

Phase I Environmental Site Assessments

A site-specific Phase I Environmental Site Assessment (ESA) was performed in accordance with CEQR and ASTM E-1527 guidelines to determine the potential presence of hazardous materials at all of the EIS analysis sites including the preferred Shaft Site, the three alternative Shaft Sites, and the First Avenue, Sutton Place, and E. 59th Street/E. 61st Street water main route options.

The ASTM E-1527 Phase I ESA is a due diligence process used to identify “recognized environmental conditions.” A “recognized environmental condition” is defined as “...the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater or surface water of the property.” Recognized environmental conditions do not “...include *de minimis* conditions that generally do not present a material risk of harm to public health or the environment, and that generally would not be the subject of an enforcement action if brought to the attention of appropriate government agencies” (ASTM E1527 ¶3.3.31). The Phase I ESA provides factual information about the project sites and Study Areas in support of an “all appropriate inquiry” into the previous ownership and uses of property consistent with good commercial or customary practices.

For purposes of the hazardous materials assessment, the Study Area is a 0.25 mile radius, somewhat larger than the 1,000 foot Study Area for hazardous materials assessment recommended in the *CEQR Technical Manual*. The potential Shaft Sites and water main routes were visually inspected and property histories were reviewed using available historical mapping. The visual site inspection provided information regarding current site conditions and site reconnaissance of the surrounding area provided information on the types of uses in the vicinity

of the project sites and potential pathways that could result in migration of contaminants from the surrounding area to the Sites.

An environmental database search was conducted and included searches of records from federal and state agencies. These searches included environmental records, historic/landmark records, Sanborn historic maps dating back to 1892, spills, and registered facilities or structures that use or store hazardous materials (including petroleum products).

Phase II Environmental Site Assessment for the Preferred Shaft Site

For the preferred Shaft Site, a Phase II ESA was conducted, 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. A Phase II ESA will be conducted for the selected Shaft Site if it differs from the preferred Shaft Site prior to construction. A Phase II ESA will also be conducted of the selected water main route prior to construction. A work plan and investigative Health and Safety Plan (HASP) will be submitted to NYCDEP for review and approval prior to beginning any field activities.

A subsurface investigation was conducted at the site on June 20 and June 21, 2005. Two environmental soil borings were taken on the site, one up gradient to the direction of groundwater flow and declining surface contours from west to east and one down gradient location to the east. Six composite samples were taken at various intervals at each boring location via split spoon sampling. All composite samples were sent for laboratory analysis at a New York State Department of Health (NYSDOH) ELAP certified laboratory. Air monitoring for organic vapors in environmental samples was conducted with a Photoionization Detector (PID). All readings were 0.0.

The laboratory analysis followed the United States Environmental Protection Agency (USEPA) SW-846 analytical protocols, "Test Methods for Evaluating Solid Waste." Sample containers were laboratory cleaned, pre-preserved, and sealed with the appropriate documentation prior to arriving on site. All samples were analyzed by a NYSDOH ELAP certified laboratory. Compounds detected were compared to New York State Department of Environmental Conservation's (NYSDEC) recommended soil cleanup objectives in "Technical and Administrative Guidance Memorandum" (TAGM) #4046.

One groundwater sample was taken. The method of sampling was the Low Stress (Low Flow) sampling method.¹ A New York State ELAP certified laboratory also analyzed the groundwater sample. The sample was analyzed in accordance with NYSDEC Region 2 Dewatering Sampling and Testing Requirements and NYCDEP Limitations for Effluent to Sanitary or Combined Sewers.

¹ U.S. Environmental Protection Agency Region 2, 1998, Ground Water Sampling Procedure Low Stress (Low Flow) Purging and Sampling, GW Sampling SOP Final, March 16, 1998.

3.14.3 Future Conditions Without the Project Methodology

The potential for changes in the hazardous materials conditions at the potential Shaft Sites and water main routes was evaluated in light of any proposed land use changes in the Study Area.

3.14.4 Future Conditions With the Project Methodology

Based on the results of the Phase I ESAs prepared for the potential Shaft Sites and water main routes and the Phase II ESA prepared for the preferred Shaft Site, determinations on the potential for significant adverse impacts were made. The presence of hazardous or contaminated materials threatens human health and the environment only when exposure to those materials occurs. During construction of the shaft and water mains, excavation would be required which would involve the displacement of soil. In areas where hazardous materials exist, disturbance of soil can provide an exposure pathway for the contaminants to workers and the public and a Construction Health and Safety Plan (CHASP) would be required as described in Section 4.14, "Hazardous Materials," in Chapter 4, "Preferred Shaft Site." For excavated materials, testing would be required to determine appropriate disposal options (see Table 3.14-1 for a classification of hazardous materials). Section 4.14 describes the testing and other protective measures that will be undertaken prior to and during construction to protect workers and the surrounding population. In addition, potential hazardous materials that would be used onsite during construction and protective measures that would be employed are discussed in that Section.

The potential impacts of shaft activation were considered by evaluating the type and quantities of water treatment chemicals that would be used at the Site in the event dechlorination of shaft water must occur prior to discharge into the sewer system. Based on the methods of delivery, storage, use and handling proposed for the activation process, the potential for exposure to workers or the public is evaluated.

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Table 3.14-1
Hazardous Materials Classifications

Hazardous Waste	Material would be considered a characteristic hazardous waste when it exhibited any of the following characteristics: ignitability, corrosivity, reactivity, or toxicity for VOCs, semi-VOCs, metals, pesticides, or herbicides, as defined in 6 NYCRR Part 371 or 40 CFR Section 261. Under New York State regulations, a material that contains greater than 50 parts per million (ppm) of PCBs is considered a hazardous waste. The U.S. Environmental Protection Agency (USEPA) considers greater than 50 ppm of PCB to be a PCB-contaminated waste under the Toxic Substances Control Act (TSCA). All hazardous waste would be disposed of at an approved permitted hazardous waste landfill.
Industrial Waste	Solid waste generated by manufacturing or industrial processes would be considered industrial waste. Such processes may include, but are not limited to the following: electric power generation; fertilizer/agricultural chemicals; inorganic chemicals; iron and steel manufacturing; organic chemicals; and all other materials as defined in 6 NYCRR Part 360. The forms of such wastes are exemplified by but not limited to: liquids such as acids, alkalis, caustics, leachate, petroleum (and its derivatives), and processes or treatment wastewaters; sludges which are semi-solid substances resulting from process or treatment operations or residues from storage or use of liquids; solidified chemicals, paints or pigments; and dredge spoil generated by manufacturing or industrial processes, foundry sand, and the end or by-products of incineration or other forms of combustion. Soil and fill material containing industrial waste would be considered industrial waste. Evidence that a soil or fill material contains industrial waste would include visual identification of waste, chemical odors, vapor emission, chemical staining, and analytical data that exceeds the concentration limits in (1) NYSDEC Technical Administrative Guidance Memorandum (TAGM) HWR-94-4046 for VOCs, semi-VOCs, organic pesticides/herbicides, and heavy metals; or (2) Spill Technology and Remediation Series (STARS) Memo #1, NYSDEC, August 1992 guidelines, whichever is more stringent depending on the contaminant found.
Construction and Demolition (C&D) Debris	Construction and demolition debris would be any uncontaminated solid waste resulting from the construction, remodeling, repair and demolition of utilities, structures and roads; and uncontaminated solid waste resulting from land clearing. Such waste includes, but is not limited to bricks, concrete, and other masonry materials, rock, and uncontaminated soil. Uncontaminated solid waste means C&D debris that is not mixed with other solid waste (i.e., industrial waste) at the point of generation, processing or disposal, and that is not contaminated with spills of a petroleum product, hazardous waste, or industrial waste. Soil and fill material may only be considered uncontaminated if it is associated with analytical data that meets the concentration limits in the NYSDEC TAGM or STARS Memo #1, NYSDEC, August 1992 guideline, whichever is more stringent.
Petroleum Contaminated Waste	This type of waste would exhibit a discernible petroleum-type odor, contains visible petroleum product, may be associated with a reported spill, or material associated with sample data that exceeds concentration limits in STARS Memo #1, NYSDEC, August 1992.
Non-Regulated Solid Waste	Non-regulated solid waste applies to materials that, before being beneficially used (as determined by the NYSDEC), were solid waste. Material is no longer considered solid waste when it is used as: uncontaminated soil which has been excavated as part of a construction project, and which is being used as a fill material, in place of soil native to the site of disposition; non-hazardous contaminated soil which has been excavated as part of a construction project, other site in NYSDEC's inactive waste remediation program, and which is used as backfill for the same excavation or excavations containing similar contaminants at the same site. Excess materials on these projects are subject to the requirements of 6 NYCRR Part 360; non-hazardous petroleum-contaminated soil which has been decontaminated to the satisfaction of the NYSDEC and is being used in a manner acceptable to the NYSDEC; recognizable, uncontaminated concrete and concrete products, asphalt pavement, brick, glass, soil and rock placed in commerce for service as a substitute for conventional aggregate; non-hazardous petroleum-contaminated soil when incorporated into asphalt pavement products by a producer authorized by the NYSDEC; and all other uses as described in 6 NYCRR Part 360, Section 360-1.15.

