

## 4.8 INFRASTRUCTURE AND ENERGY

### 4.8.1 Introduction

This Section describes the existing infrastructure and energy conditions in the Study Area and assesses the potential for construction and operation of Shaft 33B at the preferred Shaft Site to result in impacts to these resources. The methodology used to prepare this Section is described in Section 3.8, “Infrastructure and Energy,” in Chapter 3, “Impact Methodologies.”

### 4.8.2 Existing Conditions

Utility lines, which are buried below New York City roadways near the project area, provide water, sewer, electricity, natural gas, steam, telephone, and cable services to local residential, institutional, commercial, and industrial properties. As shown in Table 4.8-1, there are several utility lines located within the vicinity of the preferred Shaft Site.

**Table 4.8-1  
Utility Lines Located on East 59<sup>th</sup> Street Between First and Second Avenues**

Type of Utility Line	Number	Size	Approximate Location
Electrical	3	3 inch	Southern section of street
Electrical	2	5 inch	Middle section of street
Oil-O-Static Electrical	2	8 inch	Middle section of street
Oil-O-Static Electrical	2	8 inch	Northern section of street
Natural Gas	1	8 inch	Middle section of street
Sewer (elliptical)	1	4 ft. x 2 ft. 8 inch	Middle section of street
Storm Drain (catch basin)	1	N/A	At northern corner of First Avenue
Storm Drain (catch basin)	2	N/A	At southern corner of First Avenue
Telecommunications	4	4 inch	Middle section of street
Water	1	12 inch	Middle section of street
<b>Note:</b>	N/A – Not applicable		

The three catch basins connect to 4-foot by 2-foot, 8-inch elliptical combined sewer located in E. 59<sup>th</sup> Street that discharges to the Newtown Creek Water Pollution Control Plant (WPCP) through the Manhattan Interceptor Sewer.

### 4.8.3 Future Conditions Without the Project

None of the projects identified for development between 2006 and 2012 would be expected to result in a change in infrastructure conditions or energy demand in the vicinity of the preferred Shaft Site. Therefore, infrastructure service conditions and energy demand would be expected to be comparable to those currently existing in the vicinity of the preferred Shaft Site.

#### 4.8.4 Future Conditions With the Project

##### Construction

The following assessment discusses the potential impacts of construction of Shaft 33B at the preferred Shaft Site, including the potential need for utility relocation, demands on water and sewer infrastructure, soil and erosion control measures to be utilized at the site, and energy demands. No other utility services would be required at the site during construction. There are no substantive differences between the base configuration and alternate site configuration with regard to infrastructure and energy impacts and, therefore, the assessment provided below would apply to both.

##### *Utility Relocation*

Construction at the Shaft Site would not involve the relocation of any existing utility lines in the streets and sidewalks near the site.

##### *Water and Sewer Infrastructure*

Water usage and wastewater discharges required during construction would be limited to that needed for the 10 to 15 construction workers at the site and activities such as dust suppression and rinsing concrete trucks that require water usage. These uses would generate only limited demands and would not adversely affect water supply or wastewater capacity in the area or at the Newtown Creek WPCP that serves the area. For a discussion of procedures for handling wastewater runoff from on-site construction activities, see “Runoff and Soil Erosion and Sediment Control,” below.

Construction activities at the preferred Shaft Site would utilize water and sewer utilities adjacent to the Site. It is expected that during construction, connections would be provided to the 12-inch water line and the 4-foot by 2-foot, 8-inch elliptical sewer located in E. 59<sup>th</sup> Street to provide necessary utility services. Prior to the start of construction, utility coordination meetings would be held between the representatives of the NYCDEP, the New York City Department of Design and Construction (NYCDDC), and the contractor to develop plans for connections to local water supply systems without affecting service delivery. This is accomplished by opening and shutting various water main distribution valves. It is possible that standard service interruptions for water services could occur during the connection to the existing water main (e.g., loss of water to a building for one day). If a customer’s water service line would be affected by construction, property owners would be notified a minimum of 24 hours in advance by person, mail and posting on the property. The interruption of water would be scheduled at the least inconvenient time to the customer, and when possible temporary service would be provided from a neighboring property or fire hydrant.

Sewer service interruption is not permitted. The contractor must maintain flow in the existing sewer system through the entire period of construction, even if bypass pumping must be provided to maintain the normal flow of the sewer system. Utility coordination meetings would be held prior to construction to identify required measures and the schedule for activities to occur.

*Runoff, Soil Erosion, and Sediment Control*

Stormwater runoff from the site is currently directed to the catch basin located at the northwest corner of E. 59<sup>th</sup> Street and First Avenue. This catch basin is connected to the combined sewer located in E. 59<sup>th</sup> Street that discharges to the Newtown Creek WPCP through the Manhattan Interceptor Sewer.

Stormwater runoff from the Shaft Site during construction would continue to be directed to the adjacent catch basin that currently accepts runoff from the site. Methods would be put in place for soil and erosion control measures during construction, including: straw bale dikes, silt fences, and storm drain inlet protection. In addition, discharges from concrete truck rinsing would be passed through a sediment trap prior to discharge into the catch basin. Treatment will be to the levels specified in NYCDEP sewer regulations (for sewer discharges).

The area of disturbance during construction at the Shaft Site would be less than one acre. Therefore, a New York State Department of Environmental Conservation State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Management is not required for construction at the Shaft Site, and a Notice of Intent (NOI) and Stormwater Pollution Prevention Plan (SPPP) would not be required.

*Energy*

Construction activities that would be conducted at the Shaft Site would utilize a combination of electrical energy that would be brought to the site through City Tunnel No. 3 from an off-site location and mobile construction equipment powered by diesel fuel for energy to power construction activities. If the electricity source were not available through City Tunnel No. 3 for the entire construction period, energy would be provided from the local power grid. The most energy-intensive process would be the raise bore process, which uses an electric motor to turn a subsurface drill head. This process would last for a period of approximately three months. The electricity that would be provided to the site would replace energy consumption at other tunnel sites as the contractor brings the power line through the tunnel to the site. No substantive increase in electricity consumption would be expected to occur.

*Conclusion*

No utilities would need to be relocated at the preferred Shaft Site. Construction activities would place limited demand on water and sewer utilities. The contractor would implement appropriate soil erosion and sediment control and other measures to control runoff from the site. Any potential disruptions during water service connection to the site, if any, would be short term and temporary. Measures would be put in place to notify affected residents and businesses and to minimize any interruptions in service. Additional energy demand would be minimal. Therefore, it is not expected that construction of Shaft 33B at the preferred Shaft Site would result in potential significant adverse impacts to infrastructure and energy. A combined impact assessment for infrastructure and energy from construction of Shaft 33B at the preferred Shaft Site and its water main connections is presented in Section 5.8, "Infrastructure and Energy," in Chapter 5, "Water Main Connections."

## Operation

### *Infrastructure*

Once Shaft 33B and the water mains are constructed, an activation procedure would be implemented prior to operations. The activation procedure is described in Chapter 2, “Purpose and Need and Project Overview,” and includes flushing water through the shaft and disinfecting the shaft prior to discharge of drinking water into the distribution system. The activation process would last for approximately one month and would require the use of water from the existing water main adjacent to the site, and discharge of activation water into the sewer system adjacent to the site. No additional utility services would be required during the activation process.

During the flushing step of the activation process, which would last for 3 to 5 days, water would flow through the shaft from the surface to the water tunnel below; approximately 300 to 500 gallons of water per minute would be utilized during this procedure. This water would come from the local water supply distribution grid.

During the disinfection step of the activation procedure, which also would last for 3 to 5 days, chlorinated water from the tunnel below would flow through the shaft to the surface. A temporary hose connection would be made to the catch basin leading to the combined sewer line located in E. 59<sup>th</sup> Street adjacent to the Shaft Site. The connection to the sewer system would occur in the same fashion described for the shaft construction process and would not require customer service interruption. The volume of water that would be discharged would be 300 to 500 gallons per minute for 3 to 5 days.

Potential impacts to the water and sewer infrastructure from the activation process would be minimal. Water would be used at a rate designed to avoid pressure changes to local buildings, and would be planned to occur during a period of low water demand. Similarly, discharge to the sewer system would occur in a measured fashion, with the rate of discharge increased slowly. During this process, sewer capacity would be visually monitored at adjacent sewer system overflow points. If sewer capacity were reached, the rate of discharge would be held constant so as not to potentially exceed sewer capacity. These discharges would not be anticipated to adversely affect the Newtown Creek WPCP, which is operating well under its capacity of 310 million gallons per day. Because both the water usage and sewer discharge rates would be managed during the activation process, no potential significant adverse infrastructure impacts would be anticipated to occur.

Shaft 33B is being proposed with the goal of improving water supply infrastructure by providing additional redundancy in significant portions of Manhattan’s east side, as described in Section 2.2, “Project Purpose and Need” in Chapter 2. Operation of the Shaft Site itself would not result in new demand on existing infrastructure. No additional paved surfaces that could significantly affect surface water runoff quantities would be created following construction. Therefore, no potential significant adverse infrastructure impacts would occur as a result of activation and operation of the shaft.

*Energy*

The shaft would utilize electrical energy during operations. A permanent connection would be made to the electrical lines located in E. 59<sup>th</sup> Street to provide electricity to the shaft. During normal operations at the shaft, electricity would be utilized to operate two pumps and dehumidifying units. The valves would also use energy and would operate infrequently, possibly once a year for a few hours. The quantity of electricity used per square foot for the pumps and dehumidifying units would be similar to an average single-family residence. This usage would not be expected to exceed the capacity of local electrical lines. Operation of the shaft would not represent an “energy intensive facility that could significantly affect the transmission or generation of energy” as defined in the *CEQR Technical Manual*. Therefore, no potential significant adverse energy impacts would be anticipated to occur.

