7.8 INFRASTRUCTURE AND ENERGY

7.8.1 Introduction

This Section assesses the potential for construction and operation of Shaft 33B at the E. 61st Street Shaft Site to result in impacts to infrastructure and energy resources. The methodology used to prepare this Section is described in Section 3.8, "Infrastructure and Energy" in Chapter 3, "Impact Methodologies."

7.8.2 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 7.8-1, there are several utility lines that run along E. 61st Street between the Queensboro Bridge Extension and First Avenue, which are located within the vicinity of this Site.

Table 7.8-1
Utility Lines Located on East 61st Street Between First and Second Avenues

Type of Utility Line	Number	Size	Approximate Location
Electrical	14	4 inch	Various
Natural Gas	1	6 inch	Middle Section of Street
Sewer (elliptical)	1	4 ft. x 2 ft. 8 inch	Northern Section of Street
Sewer (elliptical)		7 ft. x 8 ft.	Southern Section of Street
Storm Drain (catch basin)	1	N/A	Northern Section of Street
Storm Drain (catch basin)	2	N/A	Southern Section of Street
Water	1	12 inch	Southern Section of Street

Note: N/A – Not applicable

The catch basins connect to 4-foot by 2-foot, 8-inch elliptical combined sewer located in E. 61st Street that discharges to the Newtown Creek Water Pollution Control Plant (WPCP) through the Manhattan Interceptor Sewer.

7.8.3 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 E. 61st Street Shaft Site. Therefore, infrastructure service conditions and energy demand would be expected to be comparable to those currently existing in the vicinity of the E. 61st Street Shaft Site.

7.8.4 Future Conditions With the Project

Construction

The following sections discuss the potential impacts of construction of Shaft 33B at the E. 61st Street 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.

Utility Relocation

Construction at this Shaft Site would not involve the relocation of existing utility lines in the streets and sidewalks near the site. It is expected that the water main connections extending from this Shaft Site before coinciding First Avenue route or Sutton Place route would travel along the Middle section of E. 61st Street to avoid utilities, but a final determination would be made during final design. Section 5.8, "Infrastructure and Energy" in Chapter 5, "Water Main Connections" describes the process undertaken to coordinate infrastructure issues during water main design and construction

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 E. 61st Street 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. 61st Street to provide necessary utility services. Procedures to be put in place to minimize the potential for service disruptions, if any, when the service connection is made are discussed in Section 4.8, "Infrastructure and Energy," of Chapter 4, "Preferred Shaft Site."

Runoff, Soil Erosion and Sediment Control

Stormwater runoff from the site is currently directed to the nearby catch basin, which is connected to the combined sewer located in E. 61st 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 will 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 NYSDEC 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

If Shaft 26B were still available as a construction shaft, 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. 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 consumption at other tunnel sites as the contractor brings the power line through the tunnel to the site. If Shaft 26B was no longer available as a construction shaft, energy would be provided from the local power grid; raise boring would not be conducted under this scenario. No substantive increase in electricity consumption would be expected to occur.

Water Main Connections

As discussed in Section 5.8, no significant adverse infrastructure or energy impacts from construction of the water main connections are anticipated. Construction activities would place limited demand on water and sewer utilities. NYCDDC would implement appropriate soil erosion and sediment control and other measures to control runoff from the site. Additional energy demand would be minimal. Because NYCDDC has established procedures in place to coordinate all potentially affected utility services and minimize potential infrastructure and other impacts during construction in City streets, construction of the water main connections to Shaft 33B at this alternative Shaft Site would not be anticipated to result in potential significant adverse impacts to infrastructure or energy.

Conclusions

No utilities would need to be relocated at the 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 will 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 E. 61st Street Shaft Site would result in potential significant adverse impacts to infrastructure and energy. Furthermore, no significant adverse impacts on infrastructure and energy are anticipated during construction of the water main connections for this Shaft Site. Therefore, overall, construction of Shaft 33B at this Shaft

Site and its water main connections would not result in significant adverse impacts on infrastructure and energy.

Activation and 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. 61st Street. 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. When sewer capacity was 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 (mgd). 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, "Purpose and Need and Project Overview." 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. 61st 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.

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