

CHAPTER 7: E. 61ST STREET SHAFT SITE

7.1 PROJECT DESCRIPTION

7.1.1 Introduction

The New York City Department of Environmental Protection (NYCDEP) is proposing to construct a vertical water supply shaft, Shaft 33B, to bring water from City Tunnel No. 3 to the local water distribution system in East Midtown and the Upper East Side in Manhattan. Chapter 2 of this EIS, “Purpose and Need and Project Overview,” describes the purpose and need for Shaft 33B. As discussed in Chapter 2, this new water shaft is needed in the general vicinity of the northeastern portion of the New York City water distribution system’s Middle Intermediate Pressure Zone (MIPZ), which is roughly bounded by Tenth Avenue on the west, the East River on the east, 34th Street on the south, and approximately 54th Street on the north. The shaft would provide water to the MIPZ and to the adjacent water pressure zone, the Northern Intermediate Pressure Zone (NIPZ). NYCDEP has identified a preferred location for Shaft 33B, at the northwest corner of E. 59th Street and First Avenue, as well as three alternative feasible Shaft Site locations.

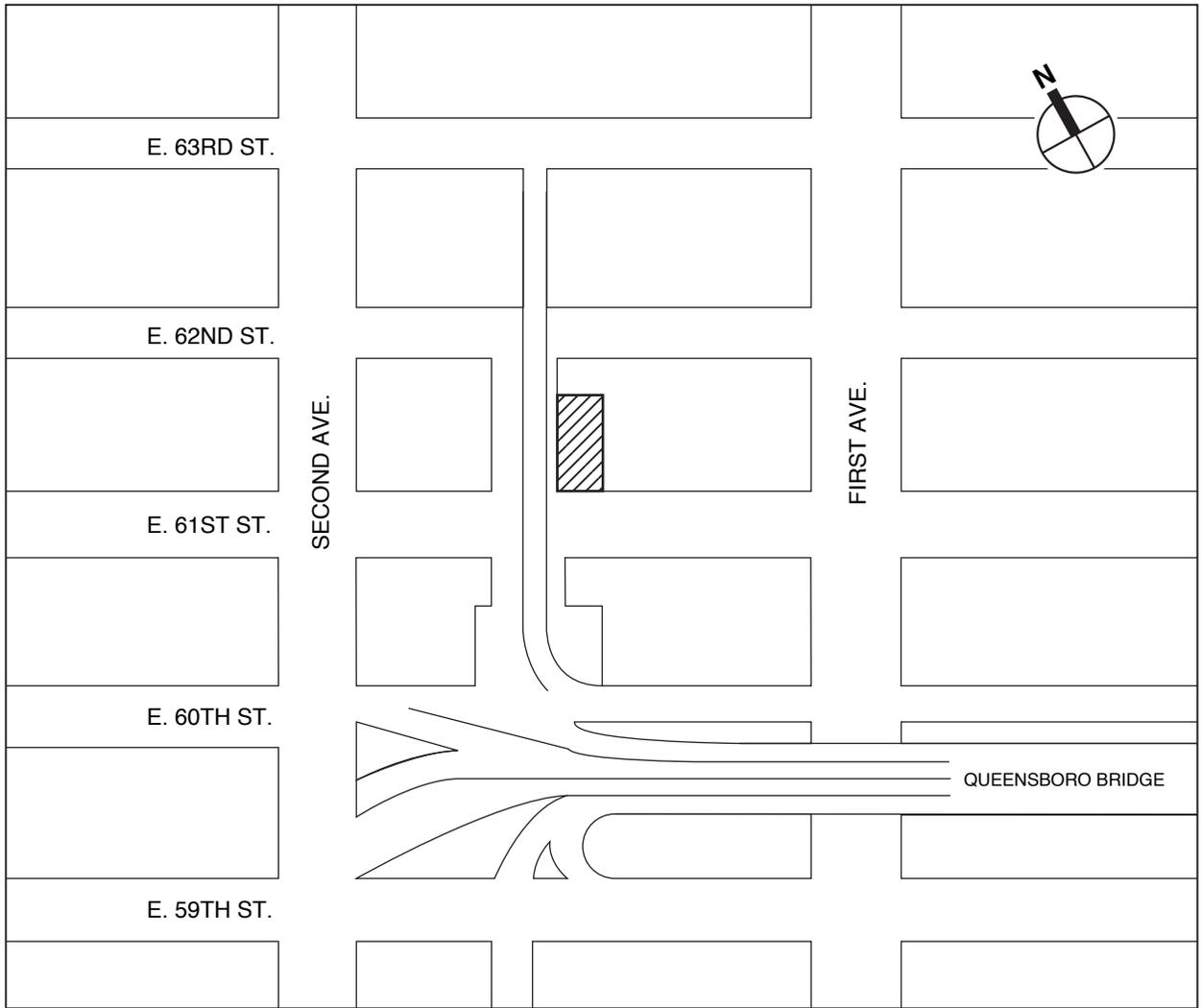
This Chapter addresses the potential environmental impacts associated with the construction and operation of Shaft 33B at the alternate Shaft Site location of E. 61st Street between First and Second Avenues (the “E. 61st Street Shaft Site”). This Section presents an overall description of the E. 61st Street Shaft Site (Section 7.1.2), the proposed site layout of Shaft 33B at the site (Section 7.1.3), and the construction activities that would be undertaken at the E. 61st Street Shaft Site to construct Shaft 33B (Section 7.1.4), activation and operation (Section 7.1.5), and the required permits and approvals for this site (Section 7.1.6). The following Sections of this Chapter, Sections 7.2 through 7.17, analyze the potential environmental impacts related to the construction and operation of Shaft 33B at the E. 61st Street Shaft Site.

The water main connections that would connect the E. 61st Street Shaft Site to the existing water distribution system via the Third Avenue trunk main are also described in Section 7.1, and the potential environmental impacts associated with construction and operation of those water main connections are considered in Sections 7.2 through 7.17.

7.1.2 Description of E. 61st Street Shaft Site

The E. 61st Street Shaft Site is located on the north side of E. 61st Street between First and Second Avenues, adjacent to an exit ramp structure from the upper level of the Queensboro Bridge (Figure 7.1-1). It is located on Block 1436, Lot 13, and consists of a fenced vacant lot owned by the Archdiocese of New York.

The alternative Shaft Site is approximately 9,000 square feet in size and abuts a residential structure owned by the Archdiocese of New York on the east, a residential structure on the northeast, and an early childhood education facility on the north. To the west of the site, a



NOT TO SCALE

Legend:

 Site Boundary



NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION
 PROPOSED SHAFT 33B TO CITY WATER TUNNEL NO. 3
 STAGE 2-MANHATTAN LEG
 E. 61ST STREET SHAFT SITE

SITE LOCATION

FIGURE 7.1-1

landscaped sidewalk that is a “Greenstreet”¹ runs beside the Queensboro Bridge ramp from E. 61st to E. 62nd Street.

This site is large enough to accommodate two risers in the shaft, a critical NYCDEP goal for Shaft 33B. As described in Chapter 2, risers are the vertical pipes that would bring water from City Tunnel No. 3 through the shaft to the surface water distribution system. The site is also regular in shape, which would facilitate construction. Before construction of Shaft 33B could commence at this location, this site would need to be acquired from the Archdiocese of New York. The process of negotiation and public review for site selection and acquisition of private property can be lengthy, and includes six to nine months for review under the City’s Uniform Land Use Review Procedure (ULURP). However, the Archdiocese is planning to develop this site with a residential structure, and has not been receptive to NYCDEP’s acquisition or use of the site.

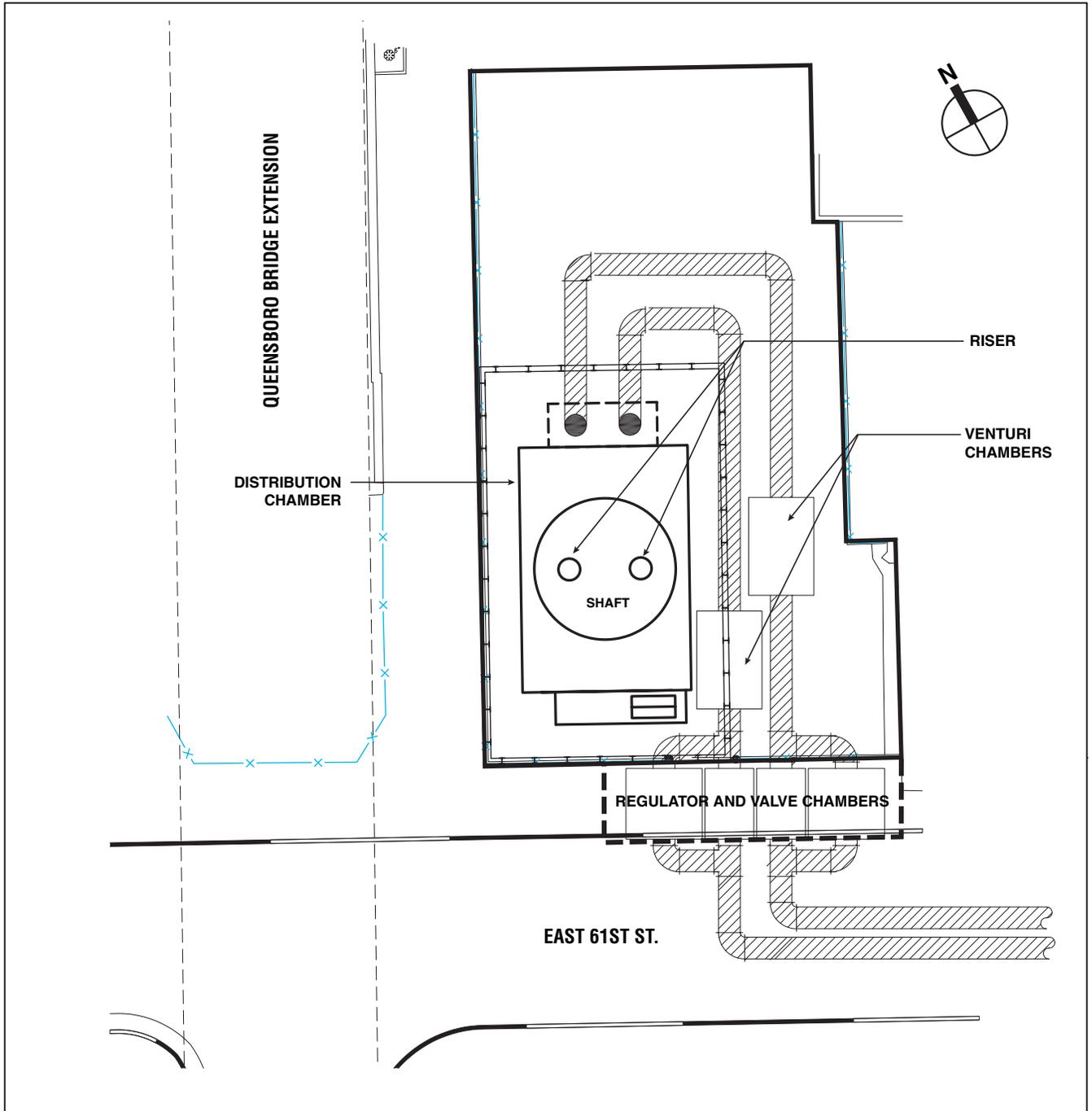
For planning purposes in this EIS, this acquisition timeframe has been estimated at 10 months. The delay of Shaft 33B construction at this site might mean that rock excavated from the shaft and chambers cannot be removed through City Tunnel No. 3. If all excavated rock must be removed from this site by truck, this would extend the construction period for Shaft 33B at this location by approximately 13 months, thus further delaying completion of the shaft at this location. The schedule associated with this site is described in more detail in Section 7.1.4 below.

7.1.3 Location of Shaft Components on the E. 61st Street Shaft Site

As described in Chapter 2, “Purpose and Need and Project Overview,” Shaft 33B would consist of a vertical shaft, approximately 450 feet deep, which would house two 48-inch riser pipes to bring water from City Tunnel No. 3 up to the neighborhood water distribution system. As detailed in Chapter 2, in addition to the riser pipes, Shaft 33B would contain several other below-grade structures required for distribution of water from City Tunnel No. 3 to the local distribution system. These would include two underground chambers at the shaft, the riser valve chamber and the distribution chamber. Above the shaft, two hatchways would provide access to these underground chambers. A 10-foot-high air vent, 14 inches in diameter, would be located permanently on the site or nearby sidewalk (above ground) to provide air into the shaft for maintenance workers, and two standard three-foot-high hydrants would provide air relief from the piping during activation. These hydrants could also be used for fire protection.

Figure 7.1-2 illustrates the potential location of these project elements at the E. 61st Street Shaft Site. As shown in the figure, the 25-foot-wide shaft would be located in the southwest corner of the site. Near the surface, the shaft would pass through the underground distribution chamber, approximately 30 feet by 45 feet in size and approximately 3 feet below the surface. The riser valve chamber would be located directly beneath the distribution chamber.

¹ Through its Greenstreets program, the New York City Department of Parks and Recreation converts paved, vacant traffic islands and medians into landscaped green spaces.



Legend:

- Site Boundary
- Stage 4B Only
- Curblines
- Existing Fence
- Cofferdam



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 PROPOSED SHAFT 33B TO CITY WATER TUNNEL NO. 3
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CONCEPTUAL SITE LAYOUT

FIGURE 7.1-2

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Two 48-inch water main connections would extend from the shaft, continuing under the street to connections to a 30-inch trunk main under Third Avenue. As described in Chapter 2 and in Section 5.1, “Project Description,” in Chapter 5, “Water Main Connections,” the specific route for the water main connections has not yet been determined. The water main route will be selected by NYCDEP after selection of the Shaft Site, for design and construction by the New York City Department of Design and Construction (NYCDDC). NYCDDC is the agency that implements the design and construction of water mains in New York City streets.

Similar to the preferred Shaft Site, water main connections from this alternative Shaft Site could follow many possible routes to the Third Avenue trunk main. For purposes of the EIS, it was assumed that the same potential routes would be followed as for the preferred Shaft Site (described in Section 5.1). These three potential water main routes were developed to evaluate the potential environmental impacts that might occur from water main construction on any selected route in the future. For the preferred Shaft Site, these three water main connection routes are: (1) a First Avenue route, traveling down First Avenue and then over to Third Avenue via E. 55th and E. 56th Streets (“the reasonable worst-case route”); (2) a Sutton Place route, traveling over to Sutton Place on E. 59th Street, down Sutton Place, and then over to Third Avenue via E. 55th and E. 56th Streets; and (3) an E. 59th Street/E. 61st Street route, in which one water main would travel to Third Avenue via E. 59th Street, and the other would travel to Third Avenue via E. 61st Street. For the E. 61st Street Shaft Site, for purposes of this EIS, it is assumed that the water main connections from this alternative Shaft Site would head east on E. 61st Street to First Avenue, and head south on First Avenue to E. 59th Street, after which they would join the First Avenue and Sutton Place water main connection routes analyzed for the preferred Shaft Site. For the E. 59th Street/E. 61st Street route from this alternative Shaft Site, it is assumed that one water main connection would extend west on E. 61st Street to Third Avenue and the other would head east on E. 61st Street to First Avenue, then south on First Avenue to E. 59th Street, where it would join the route described above for the preferred Shaft Site (west on E. 59th Street to Third Avenue). Figures 2-5, 2-6, and 2-7 in Chapter 2, “Purpose and Need and Project Overview,” illustrate the potential water main connections from this alternative Shaft Site.

Several below-ground chambers related to the water main connections would be located on or close to the Shaft Site. These include regulator, valve, and venturi chambers, providing access to valves and equipment that regulates and monitors the flow to the water main connections that would extend from the shaft. Assuming the water main connection routes described above and given the size and shape of the E. 61st Street Shaft Site, it was assumed for this EIS that the valve and regulator chambers would be located south of the alternative Shaft Site beneath the E. 61st Street sidewalk, and that the venturi chambers would be located on the alternative Shaft Site immediately east of the shaft’s distribution chamber.

7.1.4 Description of Construction at the E. 61st Street Shaft Site

Construction Activity

Chapter 2, “Purpose and Need and Project Overview,” describes the construction activities required to install Shaft 33B and its water main connections, and Chapter 4, “Preferred Shaft Site,” discusses these activities as they would occur at the preferred Shaft Site. For the E. 61st Street Shaft Site, the majority of the construction activity would be similar to that described for the preferred Shaft Site. Additional information on specific work that would be conducted at the E. 61st Street Shaft Site is provided below.

During construction, the E. 61st Street Shaft Site would be enclosed with a 20-foot-high construction barrier. An additional 10-foot-high construction barrier would be located on the sidewalk during Stage 4B for the construction of regulator and valve chambers (Figure 7.1-2). The excavation area for the shaft and distribution chamber would be in the southwestern portion of the site. Cranes used during construction would generally be in the northern end of the site. Since the site fronts the roadway only along the narrow southern boundary with E. 61st Street, all truck access would likely be through a driveway from E. 61st Street. This site access constraint would reduce the flexibility of the contractor’s equipment layout. More detail regarding truck movements is provided in Section 7.9, “Traffic and Parking.” NYCDEP would commit to providing the funding for a traffic enforcement agent (TEA) at the E. 61st Street Shaft Site during its construction to facilitate vehicular and pedestrian flow.

Construction at the E. 61st Street Shaft Site could be conducted using either the raise bore method or surface excavation, depending on the anticipated schedule. As described in Chapter 2, the raise bore method involves excavating the shaft from the bottom, working from City Tunnel No. 3 below. Excavated materials would be removed via the Tunnel. However, City Tunnel No. 3 and its staging area at Shaft 26B may no longer be available for this use after a certain date as construction in that area nears completion. At this time, based on the current Tunnel schedule, it appears that the Tunnel and Shaft 26B will not be available after July 2007. If excavation (Stage 2) for Shaft 33B at the E. 61st Street Shaft Site cannot be completed by that time, then the raise bore method cannot be used. In this case, the shaft would be constructed from the surface downward (“surface excavation”). If the raise bore method is used, most of the work on the alternative Shaft Site would occur underground. In contrast, if the surface excavation technique is used, work would occur at the surface of the site. Both techniques are described below.

Stage 1

Stage 1 would begin after necessary site acquisition. Stage 1 would consist of securing the site, removing the pavement in the work area, installing the support walls (the “cofferdam”) around the shaft area, and excavating the soils from that area. At the E. 61st Street Shaft Site, bedrock is more than 18 feet deep. An excavator would be used to remove the soil that exists on top of the bedrock and place it into dump trucks. As the depth of the excavation increases, a crane with a clamshell attachment may be used in lieu of the excavator. The excavation would be completed once bedrock is reached. During a typical day during Stage 1, one to three trucks would arrive at and depart from the site, bring deliveries and taking away debris. A maximum of three trucks

would arrive at and depart from the site in a peak hour. Stage 1 would have a total duration of four months.

Stage 2

Stage 2 would involve excavation of the shaft and distribution chamber at the E. 61st Street Shaft Site. The work involved and the schedule for Stage 2 would be substantially different depending on whether raise bore or surface excavation is used, as described below

Raise Bore Method

During Stage 2A (with a duration of 3 months), a pilot hole would be drilled from the top of the shaft down to City Tunnel No. 3 below. A power supply would be established off-site, with power supplied via the pilot hole. A 10-foot-wide shaft would be excavated from the tunnel upward using the raise bore machine. Excavated material would be removed from the bottom of the shaft and transported to an off-site location using City Tunnel No. 3.

In Stages 2B and 2C, controlled drilling and blasting would be used to excavate the rock to form the distribution chamber near the top of the shaft (Stage 2B) and to enlarge the diameter of the shaft to its full width of approximately 22 to 27.5 feet (Stage 2C). Blasting would not occur at the surface, since bedrock at the preferred Shaft Site is more than 18 feet below ground. The rock loosened during blasting of the distribution chamber and shaft would be removed through City Tunnel No. 3. During the eight-month period when blasting would be conducted (Stages 2B and 2C), blasting procedures would be the same as those described in Chapter 2, “Purpose and Need and Project Overview.” As determined necessary by FDNY, warning whistles would be used to alert the area that blasting was about to begin. For approximately the first four months of blasting (until a depth of approximately 100 feet), flag persons would halt vehicular and pedestrian flow at designated locations and blasting would be conducted only once the area near the site is clear of traffic and pedestrians.

Stage 2C would also involve pouring concrete at the site to line the shaft walls. During Stage 2 and Stage 3, the E. 61st Street Shaft Site would have an enclosed, ventilated structure that would house the concrete trucks operating at the site.

Using the raise bore method at the E. 61st Street Shaft Site, Stage 2 would last an estimated 11 months. During this period, one to three trucks would arrive at and depart from the site during the peak hour.

Surface Excavation

If City Tunnel No. 3 could not be used for removal of excavated material, Shaft 33B could not be constructed from below using the raise bore method. In that case, all excavation for the chambers and shaft at the E. 61st Street Shaft Site would have to be conducted from the surface (the “surface excavation method”). The surface excavation method would use controlled drilling and blasting, and other excavation techniques to create the shaft from the surface level, rather than a raise bore machine. Excavated soil and rock would be removed from the site by trucks for the entire shaft excavation.

During Stage 2A (6 months) using surface excavation, the distribution chamber would be excavated using controlled drilling and blasting. No pilot hole would be drilled for the shaft, and power would not be provided from City Tunnel No. 3 below; instead, NYCDEP would obtain power from Con Edison for the construction activities at the site. During Stage 2B, the shaft chamber would be excavated by blasting and the shaft and chamber would be lined with concrete. No Stage 2C (widening the shaft) would be necessary using surface excavation techniques. During the 24-month period when blasting would be conducted (Stages 2A and 2B) using surface excavation, blasting procedures would include use of the warning whistle protocol to stop vehicular and pedestrian flow at designated locations prior to blasting. This would occur for approximately the first 12 months of blasting (until a depth of approximately 100 feet).

In addition to the trucks arriving at and departing from the site each day bring materials, including concrete, an additional 5 to 10 trucks per day would haul away excavated rock from the site during Stage 2 using surface excavation. This would add a small number of trucks to the estimated three trucks in the peak hour using raise bore technique.

Stage 3

During Stage 3, riser piping would be installed in the shaft and the distribution chamber's floor, walls, columns, and roof would be constructed. Both of these activities would involve pouring of concrete at the E. 61st Street Shaft Site. Concrete trucks would operate within the enclosed, ventilated structure on the site. As explained in Section 7.8, "Infrastructure and Energy," concrete trucks would be rinsed on-site and the resulting discharge would be passed through a sediment trap prior to entering the catch basin. Throughout Stage 3, it is estimated that three trucks might arrive at and depart from the site during the peak period on a given day. A maximum of 30 concrete trucks per day would be expected on the peak days.

Stage 4

Following Stage 3, the site would be secured and inactive for 8 months while equipment is procured. Once that equipment is available, Stage 4 would consist of installation of distribution pipes, valves, and mechanical and electrical equipment, construction of regulator and valve chambers for the water main connections, and final site clean-up and restoration. Stage 4B would include construction of the regulator and valve chambers required for the water mains. Construction of these chambers would take approximately 2 to 3 months. As explained in Chapter 4, "Preferred Shaft Site," NYCDDC would construct the regulator and valve chambers. Soil would be excavated and concrete floors would be placed, followed by installation of the 48-inch piping. Concrete walls and roofs would be poured into the chambers and the open excavations would be backfilled. During a typical day during Stage 4, one to three total trucks would arrive at and depart from the E. 61st Street Shaft Site, bringing deliveries and taking away debris.

Construction Equipment

Using preliminary engineering information, estimated equipment usage factors were developed for the major pieces of equipment to be used during construction of Shaft 33B at the E. 61st

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Street Shaft Site. These equipment usage factors are estimates of the percentage of time that each piece of equipment would be used during each construction stage (assuming a 16-hour work day). The equipment usage factors for the E. 61st Street Shaft Site using the raise bore method are presented in Table 7.1-1, and the factors using the surface excavation method are presented in Table 7.1-2.

Table 7.1-1
E. 61st Street Shaft Site: Average Equipment Usage Assumptions for Construction With Raise Bore Excavation

Equipment	Percentage of Time Equipment is Used in Each Construction Stage*							
	Stage 1 (4 mos.)	Stage 2A (3 mos.)	Stage 2B (2 mos.)	Stage 2C (6 mos.)	Stage 3 (12 mos.)	Stage 4A (12 mos.)	Stage 4B (3 mos.)	Stage 4C (2 mos.)
Rock Drill (Two)			15 (per)					
Concrete Truck				15	25	5	25	
Paver						5	15	5
Pneumatic hammer			5					
Jackhammer	5						10	
Rock Drill				25				
Backhoe	10						25	
Pile Drilling Rig	25							
Excavator	25		15			5		
Front End Loader	30	10	10	5	5	10	10	10
Dump Truck at Idle	25	10	10			10	25	10
Flatbed Truck at Idle	15	5	10	5	20	20	10	10
Derrick Crane		5	5	20	25	10		
Telescoping Crane	20						10	
Pavement Cutter							10	
Compactor						5	10	
Welder	10	5	5	5	20	20	10	
Saw, electric	10	5	5	5	15	20	25	
Compressor (NYC)	5		70	70	5	5	25	
Raise Bore Machine		80						
Concrete Pump				10	25			

Note: Usage factors are based on a 16-hour workday.

As discussed in Section 7.11, “Air Quality,” NYCDEP will require the contractor for Shaft 33B to use control measures to ensure the construction is conducted in a manner protective of air quality. More specific information regarding equipment to be used at the E. 61st Street Shaft Site and their usage factors is presented in the air quality, noise, and vibration analyses in Sections 7.11, 7.12, and 7.13.

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Table 7.1-2
E. 61st Street Shaft Site: Average Equipment Usage Assumptions for Construction
With Surface Excavation

Equipment	Percentage of Time Equipment is Used in Each Construction Stage*						
	Stage 1 (4 mos.)	Stage 2A (6 mos.)	Stage 2B (18 mos.)	Stage 3 (12 mos.)	Stage 4A (12 mos.)	Stage 4B (3 mos.)	Stage 4C (2 mos.)
Rock Drill (Two)		15 (per)					
Concrete Truck			10	25	5	25	
Paver					5	15	5
Pneumatic hammer		10	10				
Jackhammer	5					10	
Rock Drill			25				
Backhoe	10					25	
Pile Drilling Rig	25						
Excavator	25	30	30		5		
Front End Loader	30	10	10	5	10	10	10
Dump Truck at Idle	25	30	30		10	25	10
Flatbed Truck at Idle	15	5	5	20	20	10	10
Derrick Crane		20	20	25	10		
Telescoping Crane	20					10	
Pavement Cutter						10	
Compactor					5	10	
Welder	10	5	5	20	20	10	
Saw, electric	10	5	5	15	20	25	
Compressor	5	70	70	5	5	25	
Concrete Pump			10	25			

Note: Usage factors are based on a 16-hour workday.

Water Main Construction

Construction of water main connections from the E. 61st Street Shaft Site would involve excavation in E. 61st Street, regardless of which route is selected. Because of the presence of an existing sewer line on the north and south sides of E. 61st Street, the new water main or mains would likely be constructed in the center of E. 61st Street.

Using the First Avenue or Sutton Place routes, two mains would be constructed in the center of E. 61st Street, requiring a trench approximately 14 feet wide, along with a construction barrier and an equipment lane. A total of 16.5 feet of roadway width would be used during this construction during peak hours, and 24.5 feet during off-peak hours. Because the construction zone would be in the center of the street, however, two lanes (the center lane and one adjacent lane) would remain closed during peak and off-peak hours. To maintain a minimum of one traffic lane on E. 61st Street, a two-foot section of the north sidewalk may be used to temporarily widen the street. For both the First Avenue and Sutton Place routes, potential water main connections would likely cross First Avenue to the east side, and continue down the east side of First Avenue to E. 59th Street, where they would join the water main connection routes from the preferred Shaft Site.

Using the E. 59th Street/E. 61st Street route, one water main would head west from the site and the other would head east. A total of 10.5 feet of roadway would be used during peak hours and 18 feet during off-peak hours. Again, to maintain traffic flow on E. 61st Street during this

construction, a two-foot-section of the north sidewalk may be used to temporarily widen the street.

Once the water main construction from this alternative Shaft Site reached E. 59th Street and First Avenue, it would join the water main connection routes developed for water main connections from the preferred Shaft Site. These water main connection routes are analyzed in Chapter 5 of this EIS. Construction of water main connections from the E. 61st Street Shaft Site would take an estimated 46 months using the First Avenue route (the reasonable worst-case route), 56 months using the Sutton Place route (an additional representative route), and 31 months using the E. 59th Street/E. 61st Street route (an additional representative route).

Construction Schedule

As shown in Table 7.1-3, construction activities at the E. 61st Street Shaft Site would require the same approximately 52-month period as at the preferred Shaft Site, if the raise bore technique can be used. However, if the site acquisition delays construction enough that raise bore excavation cannot be used, the use of blasting rather than raise bore excavation would lengthen the construction period substantially. While raise bore operations during Stage 2A would be conducted 24 hours a day for three months from within the shaft, the drilling and blasting associated with the surface excavation method would typically occur only during specified daytime hours (as discussed in Chapter 2). This would substantially reduce the speed at which the shaft could be excavated during this stage, extending the duration of Stage 2 from a total of approximately 11 months to approximately 24 months.

As a result, construction at the E. 61st Street Shaft Site could require an estimated 10 additional months (for property acquisition) to 23 additional months (including property acquisition and the delays due to surface excavation) as compared to the preferred Shaft Site. As shown in the Table 7.1-3, use of the E. 61st Street Shaft Site could therefore delay the time when Shaft 33B and the associated segment of City Tunnel No. 3 can be operational. It is anticipated that this Shaft Site would be completed in approximately mid-2011 to mid-2012, compared to approximately mid-2010 for the preferred Shaft Site.

7.1.5 Activation and Operation

Activation and operation procedures would be consistent among all potential Shaft Site locations and are described in Chapter 2, "Purpose and Need and Project Overview."

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Table 7.1-3
Shaft Construction Stages at E. 61st Street Shaft Site
Raise Bore vs. Surface Excavation
(Assuming Estimated Start Date of March 2006)

Stage	Activity		Conceptual Schedule			
	Raise Bore	Surface Excavation	Months		Dates	
			Raise Bore	Surface Excavation	Raise Bore	Surface Excavation
	Property acquisition		10	10	March 1, 2006 – December 31, 2006	March 1, 2006 – December 31, 2006
1	Cut/demolish sidewalk and asphalt pavement; install excavation support, excavate soil		4	4	January 2, 2007 – April 30, 2007	January 2, 2007 – April 30, 2007
2A	Drill pilot hole; raise bore the shaft	Excavate distribution chamber by blasting	3	6	May 1, 2007 – July 31, 2007	May 1, 2007 – October 31, 2007
2B	Distribution chamber excavation (blasting)	Shaft excavation (blasting); line shaft with concrete	2	18	August 1, 2007 – September 30, 2007	November 1, 2007 – April 30, 2009
2C	Slashing/lining the shaft (blasting)	No Stage 2C	6	NA	October 1, 2007 – March 31, 2008	NA
3	Riser piping installation, refill with concrete; distribution chamber construction (form and place reinforced concrete)		12	12	April 1, 2008 – March 31, 2009	May 1, 2009 – April 30, 2010
<i>Contracting and Equipment Procurement</i>			8	8	April 1, 2009 – November 30, 2009	May 3, 2010 – December 30, 2010
4	Equipment installation; construction of regulator and valve chambers and water main connections at site		17	17	December 1, 2009 – April 29, 2011	December 31, 2010 – May 30, 2012
Total, excluding property acquisition			52	65		

7.1.6 Permits and Approvals

Construction of Shaft 33B on the E. 61st Street Shaft Site would require similar potential permits and approvals as for the preferred Shaft Site (described in Section 4.1), with one major exception: if the E. 61st Street Shaft Site is selected, the acquisition of private property would require public review under the City’s Uniform Land Use Review Procedure (ULURP). The potential permits and approvals for this site are as follows:

- **FDNY Blasting Permits:** FDNY regulates the transport and use of explosives within the City to ensure their safe usage. All blasting at the Shaft Site would be conducted in coordination with FDNY.
- **NYCDOT Construction Activity Permits, Sidewalk Construction Permits, and Street Opening Permits:** NYCDOT permits would be required for construction-related activities on sidewalks and within streets. These permits typically provide detailed stipulations for traffic and pedestrian control during construction.
- **NYCDEP Tunneling Permit:** These permits are required for all tunnel construction in the City and set specific limits on blasting and noise levels, construction area layout, muck removal, and other aspects of tunnel construction.

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- NYCDEP Sewer Discharge Permit: A permit would be required for discharge into the sewer during the dewatering and Shaft activation process. This permit would specify the quality and quantity of water that can be discharged into a City sewer.
- NYCDEP Air Permit: A permit may be required pursuant to the City's Air Pollution Code for operation of a ventilation system for the concrete truck enclosure.
- Uniform Land Use Review Procedure: ULURP would be required to approve the site selection and acquisition of private property.

