# Chapter 18: Construction

## A. INTRODUCTION

This chapter examines the potential construction impacts of the proposed 53 West 53rd Street project. This chapter summarizes the construction plan for the proposed project, including a description of the anticipated construction stages and activities, followed by a discussion of the types of impacts likely to occur during construction of the proposed project on the development site. The assessment also describes methods that may be employed to minimize construction-related impacts.

As described below, the analysis concludes that the proposed project would not result in substantial construction-related effects with respect to any of the analysis areas of concern. Therefore, no significant adverse impacts are expected to occur as a result of construction.

## B. CONSTRUCTION STAGES AND ACTIVITIES

Construction of the building would generally involve three main stages, which would overlap at certain times: excavation and foundations, superstructure, core and shell, and interior construction and finishing. Since there are no standing structures on the development site, there would not be any substantial demolition, although connections would need to be made to the existing Museum of Modern Art (MoMA) complex. Each of these stages is described in more detail below.

### EXCAVATION AND FOUNDATIONS

During this stage, equipment may include bobcats, rockbreakers, loaders, pumps, motorized concrete buggies, concrete pumps, jack hammers, pneumatic compressors, and a variety of small, mostly hand-held tools, as well as dump trucks and concrete trucks. In addition, hoe-ram hammers may be used in combination with localized blasting to remove rock. Pile driving would not be necessary.

Blasting would only occur for short periods of time. Blasting in New York City is tightly regulated and restricted. All blasting would conform to New York City Fire Department (FDNY) and New York City Department of Building (DOB) regulations, and any other applicable regulations. Loose rock would be excavated and dumped into dump trucks and taken from the site. Only local dewatering is expected where excavation encounters trap water or small miscellaneous subsurface streams.

Foundations would be formed by perimeter concrete wall construction, supported on spread footings and caissons adjacent to the subway structure installed with rock anchors. Very little underpinning is expected given the presence of rock at relative shallow depths and that the immediately adjacent buildings are fairly new.

## SUPERSTRUCTURE, CORE AND SHELL

Construction during this stage would involve the superstructure of the building, the building's core, and the exterior enclosure, or "shell." This includes the building framework (columns and beams), floor decks, and roof as well as the exterior walls and cladding.

These activities would require the use of tower cranes, compressors, personnel and material hoists, front-end loaders, concrete pumps, on-site bending jigs, welding machines, and a variety of hand-held tools, in addition to the delivery trucks bringing construction materials to the site. Material deliveries would be staged on both West 53rd and 54th Streets, where there may be a lane closure and sidewalk closure.

## INTERIOR CONSTRUCTION AND FINISHING

This stage of work would include the interior walls, installation of lighting fixtures, installation of mechanical equipment, and interior finishes (flooring, painting, etc.), as well as mechanical and electrical work, such as the installation of elevators.

Equipment used during interior construction would include exterior hoists, pneumatic equipment, delivery trucks, and a variety of small hand-held tools.

## COMISSIONING AND START-UP

This final, short stage of construction overlaps with the final months of interior construction and finishing. It involves testing all the building systems, completing all of the punch list items (typically small tasks that were not completely finished), final clean-up and obtaining final approvals from city authorities.

## CONSTRUCTION WORKERS AND DELIVERIES

The individual and overlapping activities projected for various stages of construction would result in construction workers and deliveries at the project site, which are described later in this chapter for the Previously Approved Project, the Expanded Development Scenario, and the proposed project.

## CONSTRUCTION HOURS

The permitted hours of construction regulated by the New York City Noise Code and DOB apply in all areas of the City and are reflected in the collective bargaining agreements with major construction trade unions. It is anticipated that the bulk of construction activities would take place Monday through Friday, during the regularly allowed hours of construction (7 AM to 6 PM), but that some overtime may be required to complete some time-sensitive tasks beyond the normal work day (e.g., cement pouring) on weekdays and that some construction activities could also occur on Saturdays.

In the event that overtime or Saturday work is required, appropriate work permits from the DOB would be obtained. For Saturday work, construction permit variances typically allow construction between 9 AM and 5 PM. For this work to occur, the variance must be filed for and approved in advance of off-hour activities commencing.

For any work occurring outside the regular weekday hours, an Alternative Noise Mitigation Plan permit would need to be obtained from the New York City Department of Environmental Protection (NYCDEP) in accordance with the revised New York City Noise Control Code, as per

Section 24221 of the New York City Administrative Code (NYCAC). It is necessary to file this document with NYCDEP, and the approved plan must be accessible to inspectors. In accordance with Section 24221, any individual or entity performing construction work in the city shall adopt and implement an Alternative Noise Mitigation Plan for each construction site when any device or activity deviates from strict compliance with the noise mitigation rules as defined in Section 24219 (including work being performed outside the regularly allowed weekday construction hours). An Alternative Noise Mitigation Plan is also required when the construction devices being used on a site for any reason cannot strictly comply with the mitigation strategies and best management practices defined in 15 RCNY Section 28102.

## C. THE FUTURE WITHOUT THE PROPOSED PROJECT

### PREVIOUSLY APPROVED PROJECT

Construction of the Previously Approved Project will last approximately 26 months. Construction activities will begin in late 2009 and will be completed in 2012.

*CONSTRUCTION STAGES*

Construction will begin with an estimated 8 months of excavation and foundation work. The basement will to extend one level below grade. The second stage of construction—superstructure, core and shell—will begin in the 8th month and last 13 months. The interior construction and finishing stage of work will last from the 15th month to the end of construction. From the 20th month to the end of construction the building will be completely enclosed. Toward the end of the construction period, the commissioning and start-up phase will overlap with the final 6 months of interior construction and finishing.

*CONSTRUCTION WORKERS AND DELIVERIES*

The individual and overlapping activities projected for various stages of construction will result in the following maximum numbers of construction workers and deliveries:

- Excavation and foundation work—from the beginning to the 8th month: A maximum of 59 workers and 23 deliveries per day is expected in the 5th month.
- Superstructure, core and shell—from the 8th month to the 14th month: A maximum of 90 workers and 14 deliveries per day is expected in the 13th month.
- Superstructure, core and shell/interior construction and finishing—from the 15th month to the 20th month: A maximum of 180 workers and 12 deliveries per day is expected in the 16th month.
- Interior construction and finishing—from the 21st month to the 26 month: A maximum of 125 workers and 9 deliveries per day is expected in the 21st month.

### EXPANDED DEVELOPMENT SCENARIO

Construction of the Expanded Development Scenario will last approximately 37 months. Construction activities will begin in late 2009 and will be completed in 2013.

*CONSTRUCTION STAGES*

Construction will begin with an estimated 11 months of excavation and foundation work. The basement will to extend three levels below grade. The second stage of construction—superstructure, core and shell—will begin in the 11th month and last 18 months. Interior construction and finishing work will last from the 19th month to the end of construction. From the 29th month to the end of construction the building will be completely enclosed. Finally, commissioning and start-up work will overlap with the final two months of interior construction and finishing.

*CONSTRUCTION WORKERS AND DELIVERIES*

The individual and overlapping activities projected for various stages of construction will result in the following maximum numbers of construction workers and deliveries:

- Excavation and foundation work—from the beginning to the 11th month: A maximum of 65workers and 25 deliveries per day is expected in the 5th month.
- Superstructure, core and shell—from the 11th month to the 18th month: A maximum of 245 workers and 18 deliveries per day is expected in the 18th month.
- Superstructure, core and shell/interior construction and finishing—from the 19th month to the 28th month: A maximum of 490 workers and 25 deliveries per day is expected in the 24th month.
- Interior construction and finishing—from the 29th month to the 37th month: A maximum of 298 workers and 18 deliveries per day is expected in the 29th month.
- Interior construction and finishing/commissioning and start up—the last two months of construction: A maximum of 158 workers and 11 deliveries per day is expected in the 36th month.

# D. PROBABLE IMPACTS OF THE PROPOSED PROJECT

## CONSTRUCTION OF THE PROPOSED PROJECT

As summarized in **Table 18-1**, construction of the proposed project is expected to last approximately 44 months. Based on current plans, construction activities would begin in late 2009 and would be completed in 2013.

*EXCAVATION AND FOUNDATIONS*

Construction would begin with an estimated 10 months of excavation and foundation work. The basement is likely to extend three levels below grade. Compared with the Previously Approved Project, this stage of the proposed project would be two months longer. Compared with the Expanded Development Scenario, this stage of the project would be one month shorter.

*SUPERSTRUCTURE, CORE AND SHELL*

This second stage of construction would begin in the 11th month and last 24 months. Compared with the Previously Approved Project, this stage of the proposed project construction would last 11 months longer. Compared with the Expanded Development Scenario, this stage of the proposed project construction would last 6 months longer.

**Table 18-1**
**Stages of Construction and Number of Workers and Delivery Trucks (per day)**

| Month | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Workers | 35 | 45 | 55 | 55 | 65 | 65 | 55 | 45 | 45 | 45 | 50 | 75 |
| Deliveries | 5 | 5 | 10 | 15 | 25 | 20 | 15 | 10 | 5 | 5 | 10 | 10 |
| Stage | I | I | I | I | I | I | I | I | I | I | II | II |
| **Month** | **13** | **14** | **15** | **16** | **17** | **18** | **19** | **20** | **21** | **22** | **23** | **24** |
| Workers | 100 | 150 | 200 | 300 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 700 |
| Deliveries | 15 | 15 | 20 | 20 | 20 | 25 | 30 | 30 | 35 | 35 | 35 | 35 |
| Stage | II | II | II | II | II | II | II, III | II, III | II, III | II, III | II, III | II, III |
| **Month** | **25** | **26** | **27** | **28** | **29** | **30** | **31** | **32** | **33** | **34** | **35** | **36** |
| Workers | 650 | 625 | 625 | 450 | 425 | 400 | 375 | 300 | 275 | 250 | 225 | 225 |
| Deliveries | 35 | 30 | 25 | 25 | 25 | 20 | 15 | 15 | 15 | 15 | 15 | 15 |
| Stage | II, III | II, III | II, III | II, III | II, III | II, III | II, III | II, III | II, III | II, III | III | III |
| **Month** | **37** | **38** | **39** | **40** | **41** | **42** | **43** | **44** | | | | |
| Workers | 200 | 175 | 175 | 150 | 125 | 125 | 125 | 75 | | | | |
| Deliveries | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 5 | | | | |
| Stage | III | III | III | III | III | III | III, IV | III, IV | | | | |

**Source:** Hines
**Notes:** I. Excavation and Foundations
II. Superstructure, Core and Shell
III. Interior Construction and Finishing
IV. Commissioning and Start up

*INTERIOR CONSTRUCTION AND FINISHING*

This stage of work is expected to last from the 19th month to the end of construction. From the 34th month to the end of construction the building would be completely enclosed. Compared with the Previously Approved Project, this stage of the proposed project construction would last 14 months longer. Compared with Expanded Development Scenario, this stage of the proposed project construction would last 7 months longer.

*COMISSIONING AND START-UP*

For the proposed project, this stage of construction would overlap with the final two months of interior construction and finishing. This would be the same with construction of the Previously Approved Project and the Expanded Development Scenario.

*CONSTRUCTION WORKERS AND DELIVERIES*

As summarized in **Table 18-1**, the individual and overlapping activities projected for various stages of construction would result in the following maximum numbers of construction workers and deliveries:

- Excavation and foundation work—from the beginning to the 10th month: A maximum of 65 workers and 25 deliveries per day is expected in the 5th month. Compared with the Previously Approved Project, construction of the proposed project is expected to result in an increase of 6 employees and 2 deliveries during the peak month of this stage. Compared with the Expanded Development Scenario, construction of the proposed project is expected to result in the same number of workers and deliveries per day during the peak month of this stage.
- Superstructure, core and shell—from the 11th month to the 18th month: A maximum of 350 workers and 25 deliveries per day is expected in the 18th month. Compared with the

Previously Approved Project, construction of the proposed project is expected to result in 260 more workers and 11 more deliveries per day during the peak month of this stage. Compared with the Expanded Development Scenario, construction of the proposed project is expected to result in 105 more workers and 7 more deliveries per day during the peak month of this stage.

- Superstructure, core and shell/interior construction and finishing—from the 19th month to the 34th month: A maximum of 700 workers and 35 deliveries per day is expected in the 24th month. Compared with the Previously Approved Project, construction of the proposed project is expected to result in 575 more workers and 26 more deliveries per day during the peak month of this stage. Compared with the Expanded Development Scenario, construction of the proposed project is expected to result in 210 more workers and 10 more deliveries per day during the peak month of this stage.
- Interior construction and finishing—from the 35th month to the 42nd month: A maximum of 225 workers and 15 deliveries per day is expected in the 35th month. Compared with the Previously Approved Project, construction of the proposed project is expected to result in 100 more workers and 6 more deliveries per day during the peak month of this stage. Compared with the Expanded Development Scenario, construction of the proposed project is expected to result in 73 fewer workers and 3 fewer deliveries during the peak month of this stage.
- Interior construction and finishing/commissioning and start up—the last two months of construction: A maximum of 125 workers and 15 deliveries per day is expected in the 43rd month. Compared with the Expanded Development Scenario, construction of the proposed project is expected to result in 33 fewer workers and 4 more deliveries per day during the peak month of this stage.

## EFFECTS OF CONSTRUCTION

As with most development in New York City, construction of the proposed project may be disruptive to the surrounding area for limited periods of time throughout the construction period. The following analyses describe the proposed project's temporary effects on land use, historic resources, hazardous materials, traffic and transportation, air quality, and noise as compared to the Previously Approved Project and the Expanded Development Scenario.

### *LAND USE*

Construction of the proposed project would cause some disruptions to activities in the surrounding area. However, these disruptions would be temporary in nature. Certain construction activities, such as excavation and foundations, may be disruptive to the surrounding residential and museum uses. In later stages of construction, when work would take place within the building shell, effects on the surrounding uses would be substantially reduced. There may be some inconvenience associated with construction of any building on the project site. However, construction activities would be similar to construction activities at any other site in Manhattan, and, as discussed above, the hours of construction would be regulated by the New York City Noise Code and the DOB. Construction of the Previously Approved Project, the Expanded Development Scenario, or the proposed project would not alter surrounding land uses, and access to surrounding land uses would be maintained throughout the construction period.

*HISTORIC RESOURCES*

As described in Chapter 7, "Historic Resources," direct architectural resource impacts include demolition of a resource and alterations to a resource that cause it to become a different visual entity. A resource also can be damaged by adjacent construction, either from vibrations (i.e., from construction blasting or pile driving) or from falling objects, subsidence, collapse, or damage from construction machinery. DOB's Technical Policy and Procedure Notice (PPN) #10/88 addresses procedures for avoidance of damage to historic structures from adjacent construction. The PPN defines an adjacent historic structure as being contiguous to or within a lateral distance of 90 feet from a lot under development or alteration. PPN must be followed for construction within proximity of historic landmarks to avoid potential adverse impacts during construction. Under the PPN, a construction protection plan must be provided to the New York City Landmarks Preservation Commission (LPC) for review and approval prior to construction. With these measures in place, it is unlikely that there would be any adverse physical impacts on the historic resource.

The Warwick Hotel, at 1340 Sixth Avenue, is located within 90 feet of the development site, as are the CBS Building and 41 West 54th Street. The CBS Building is a NYCL and LPC has determined that the Warwick Hotel and 41 West 54th Street appear to be eligible for listing on the State and National Registers of Historic Places and eligible for listing as a New York City Landmark; therefore, the proposed project would avoid potential adverse physical impacts on these architectural resources through the implementation of a construction protection plan developed in consultation with LPC that would follow the guidance of TPPN 10/88. None of the other architectural resources in the study area are close enough to be affected by ground-borne construction vibrations or other potential construction-related issues.

In a letter dated February 2, 2007, LPC concluded that the development site has no archaeological significance. Therefore, construction of the Previously Approved Project, Expanded Development Scenario, or the proposed project on the development site would not result in any significant adverse impacts to archaeological resources.

*HAZARDOUS MATERIALS*

As discussed in Chapter 10, "Hazardous Materials," the potential for exposure to contamination from on-site sources could occur during construction on the project site. Legal requirements for excavation and construction activities, as well as hazardous materials requirements associated with the Restrictive Declaration for Lots 5 to 8, must be followed. Potential hazardous materials impacts would be avoided by performing construction activities in accordance with the measures identified below:

- All activities involving disturbance of existing soils would be conducted in accordance with an NYCDEP-approved Remedial Action Plan/Health and Safety Plan (RAP/HASP) that would detail measures to reduce the potential for exposure (e.g., dust control) and measures to identify and manage known contamination (e.g., petroleum storage tanks or contaminated soil) and unexpectedly encountered contamination.
- The suspect underground storage tank on Lot 66, as well as any other underground storage tanks encountered during site development would be properly registered, if required, with NYSDEC and FDNY. The tanks would be properly assessed, closed and removed in accordance with applicable requirements prior to, or as part of initial construction activities for the project.

- All material that needs to be disposed of (e.g., any contaminated soil and excess fill including demolition debris) would be properly handled and disposed of off-site in accordance with all applicable regulations.
- If dewatering is required for construction, testing would be performed to ensure that the groundwater would meet NYCDEP sewer discharge requirements. If necessary, pretreatment would be conducted prior to discharge to the City's sewer system, as required by NYCDEP permit/approval requirements.

With the implementation of these measures, no significant adverse impacts related to hazardous materials would result from construction activities on the development site.

*TRAFFIC AND TRANSPORTATION*

Construction of the proposed project would generate trips from workers traveling to and from the site, as well as from the movement of materials and equipment, and removal of construction waste. With the proposed project, the estimated number of daily construction workers on site at any one time would vary between 35 and 700, depending on the stage of construction, as follows:

- Excavation and foundation work would require between 35 and 65 workers on-site.
- The superstructure, core and shell construction work would require between 50 and 350 workers on-site for the first eight months of this stage.
- The combined work of superstructure, core and shell construction plus interior construction and finishing would require between 250 and 700 workers on-site.
- The interior construction and finishing work after the superstructure, core and shell work is finished would require between 125 and 225 workers on-site.
- The combined work of the interior construction and finishing plus commissioning and start up would require between 75 and 125 workers on-site.

Truck movements would generally be distributed throughout the day with peak activities occurring in the early morning. The estimated trucks per day for the construction of the proposed project are as follows:

- Excavation and foundations: 5 to 25 deliveries per day for approximately 10 months (trucks would enter on West 53rd Street and exit on West 54th Street);
- Building shell, and core (superstructures): 10 to 25 deliveries per day for approximately 8 months (trucks would enter and exit on both West 53rd and 54th Streets);
- The combined work of superstructure, core and shell construction plus interior construction and finishing: 15 to 35 deliveries per day for approximately 16 months (trucks would enter and exit on both West 53rd and 54th Streets);
- Interior and finishing: 15 deliveries per day for approximately 8 months after the completion of the superstructure (trucks would enter and exit on both West 53rd and 54th Streets);
- The combined work of interior construction and finishing plus commissioning and start up: 5 to 15 deliveries per day for the last 2 months (trucks would enter and exit on both West 53rd and 54th Streets).

Delivery of material, truck holding and staging would occur on West 53rd and 54th Streets between Fifth and Sixth Avenues, where one parking lane adjacent to the project site would be closed during the construction period. During the interior construction and finishing stage, it is

likely that there would be fewer large trucks and a greater number of smaller delivery vehicles. Wherever possible, the scheduling of deliveries and other construction activities would take place during off-peak travel hours. Based on the anticipated future levels of traffic and with the utilization of scheduling measures to avoid peak periods, significant interruptions of traffic would not be expected during the construction period for the proposed project. While truck staging is expected on both the north and south sides of the construction site, moving lanes of traffic would be available at all times. To the extent that there would be any disruption in traffic flow from construction, the changes would be relatively minor and short-term.

*Construction Worker Vehicle and Truck Trips*

The estimated daily vehicle trips were distributed throughout the workday based on projected work shift allocations and conventional arrival/departure patterns of construction workers and trucks. For construction workers, the majority (80 percent) of the arrival and departure trips would take place during the hour before and after each shift (6-7 AM for arrival and 3-4 PM for departure on a regular day shift). Based on the survey conducted at the construction site of the New York Times Building in 2006, it is anticipated that construction workers' travel within or commute to Manhattan would be primarily by public transportation (approximately 70 percent), with a smaller percentage by private auto (approximately 30 percent). For construction trucks, deliveries would occur throughout the day when the construction site is active. Construction truck deliveries typically peak during the hour before the normal work day (25 percent of daily total), overlapping with construction worker arrival traffic. **Table 18-2** presents the monthly breakdown of construction vehicle trips (including the worker and truck trips) for the construction related early morning (6-7 AM) and early afternoon (3-4 PM) peak hours. The construction of the proposed project would result in peak construction trips during the end of the second year and the beginning of the third year of construction, with maximum vehicle-trip generation occurring in the 24th month of construction—97 and 79 vehicle trips during the early morning (6-7 AM) and early afternoon (3-4 PM) peak hours, respectively. On average, construction of the proposed project would result in 38 and 29 vehicle trips during the 6-7 AM and 3-4 PM peak hours, respectively.

**Table 18-2**
**Number of Construction Vehicle Trips (peak hours)**

| **Month** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 – 7 AM | 6 | 7 | 12 | 14 | 19 | 17 | 14 | 11 | 7 | 7 | 12 | 15 |
| 3 – 4 PM | 4 | 5 | 6 | 6 | 7 | 7 | 6 | 5 | 5 | 5 | 6 | 9 |
| **Month** | **13** | **14** | **15** | **16** | **17** | **18** | **19** | **20** | **21** | **22** | **23** | **24** |
| 6 – 7 AM | 19 | 25 | 33 | 44 | 44 | 52 | 61 | 67 | 75 | 80 | 86 | **97** |
| 3 – 4 PM | 11 | 17 | 23 | 34 | 34 | 40 | 45 | 51 | 57 | 62 | 68 | **79** |
| **Month** | **25** | **26** | **27** | **28** | **29** | **30** | **31** | **32** | **33** | **34** | **35** | **36** |
| 6 – 7 AM | 92 | 87 | 83 | 63 | 60 | 55 | 51 | 42 | 39 | 36 | 34 | 34 |
| 3 – 4 PM | 74 | 71 | 71 | 51 | 48 | 45 | 43 | 34 | 31 | 28 | 26 | 26 |
| **Month** | **37** | **38** | **39** | **40** | **41** | **42** | **43** | **44** | **Average** | | | |
| 6 – 7 AM | 31 | 28 | 28 | 25 | 22 | 22 | 22 | 11 | 38 | | | |
| 3 – 4 PM | 23 | 20 | 20 | 17 | 14 | 14 | 14 | 9 | 29 | | | |

**Notes:** Numbers of construction worker vehicles were calculated using a 28.9-percent auto split with an auto-occupancy of 2.04, based on survey conducted by AKRF, Inc. at the construction site of the New York Times Building in 2006.

Since construction activities vary among different construction stages and tasks, representative daily construction traffic is typically summarized using quarterly averages. The 24th month to the 26th month of the construction schedule would be the peak quarter of construction, with 91 and 75 vehicle trips during the 6-7 AM and 3-4 PM peak hours, respectively, as shown in **Table 18-3**.

**Table 18-3**
**Peak Construction Vehicle Trip Projections**

| Hour | Auto Trips | | | Truck Trips | | | Total | | |
|---|---|---|---|---|---|---|---|---|---|
| | In | Out | Total | In | Out | Total | In | Out | Total |
| **Proposed Project** | | | | | | | | | |
| 5 AM – 6 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **6 AM - 7 AM** | 75 | 0 | 75 | 8 | 8 | 16 | 83 | 8 | **91** |
| 7 AM - 8 AM | 18 | 0 | 18 | 3 | 3 | 6 | 21 | 3 | 24 |
| 8 AM - 9 AM | 0 | 0 | 0 | 3 | 3 | 6 | 3 | 3 | 6 |
| 9 AM - 10 AM | 0 | 0 | 0 | 3 | 3 | 6 | 3 | 3 | 6 |
| 10 AM - 11 AM | 0 | 0 | 0 | 3 | 3 | 6 | 3 | 3 | 6 |
| 11- AM - Noon | 0 | 0 | 0 | 3 | 3 | 6 | 3 | 3 | 6 |
| Noon - 1 PM | 0 | 0 | 0 | 3 | 3 | 6 | 3 | 3 | 6 |
| 1 PM - 2 PM | 0 | 0 | 0 | 3 | 3 | 6 | 3 | 3 | 6 |
| 2 PM - 3 PM | 0 | 9 | 9 | 2 | 2 | 4 | 2 | 11 | 13 |
| **3 PM - 4 PM** | 0 | 75 | 75 | 0 | 0 | 0 | 0 | 75 | **75** |
| 4 PM - 5 PM | 0 | 9 | 9 | 0 | 0 | 0 | 0 | 9 | 9 |
| 5 PM - 6 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Previously Approved Project** | | | | | | | | | |
| 5 AM – 6 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **6 AM - 7 AM** | 19 | 0 | 19 | 3 | 3 | 6 | 22 | 3 | **25** |
| 7 AM - 8 AM | 4 | 0 | 4 | 1 | 1 | 2 | 5 | 1 | 6 |
| 8 AM - 9 AM | 0 | 0 | 0 | 1 | 1 | 2 | 1 | 1 | 2 |
| 9 AM - 10 AM | 0 | 0 | 0 | 1 | 1 | 2 | 1 | 1 | 2 |
| 10 AM - 11 AM | 0 | 0 | 0 | 1 | 1 | 2 | 1 | 1 | 2 |
| 11- AM - Noon | 0 | 0 | 0 | 1 | 1 | 2 | 1 | 1 | 2 |
| Noon - 1 PM | 0 | 0 | 0 | 1 | 1 | 2 | 1 | 1 | 2 |
| 1 PM - 2 PM | 0 | 0 | 0 | 1 | 1 | 2 | 1 | 1 | 2 |
| 2 PM - 3 PM | 0 | 2 | 2 | 1 | 1 | 2 | 1 | 3 | 4 |
| **3 PM - 4 PM** | 0 | 19 | 19 | 0 | 0 | 0 | 0 | 19 | **19** |
| 4 PM - 5 PM | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 2 | 2 |
| 5 PM - 6 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Expanded Development Scenario** | | | | | | | | | |
| 5 AM – 6 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **6 AM - 7 AM** | 52 | 0 | 52 | 6 | 6 | 12 | 58 | 6 | **64** |
| 7 AM - 8 AM | 14 | 0 | 14 | 2 | 2 | 4 | 16 | 2 | 18 |
| 8 AM - 9 AM | 0 | 0 | 0 | 2 | 2 | 4 | 2 | 2 | 4 |
| 9 AM - 10 AM | 0 | 0 | 0 | 2 | 2 | 4 | 2 | 2 | 4 |
| 10 AM - 11 AM | 0 | 0 | 0 | 2 | 2 | 4 | 2 | 2 | 4 |
| 11- AM - Noon | 0 | 0 | 0 | 2 | 2 | 4 | 2 | 2 | 4 |
| Noon - 1 PM | 0 | 0 | 0 | 2 | 2 | 4 | 2 | 2 | 4 |
| 1 PM - 2 PM | 0 | 0 | 0 | 2 | 2 | 4 | 2 | 2 | 4 |
| 2 PM - 3 PM | 0 | 7 | 7 | 1 | 1 | 2 | 1 | 8 | 9 |
| **3 PM - 4 PM** | 0 | 52 | 52 | 0 | 0 | 0 | 0 | 52 | **52** |
| 4 PM - 5 PM | 0 | 7 | 7 | 0 | 0 | 0 | 0 | 7 | 7 |
| 5 PM - 6 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**Notes:** Hourly construction worker and truck trips were derived from an estimated quarterly average number of construction workers and truck deliveries per day, with each truck delivery resulting in two daily trips-(arrival and departure).

Using the same methodology, construction vehicle trip projections were also developed for the Previously Approved Project and the Expanded Development Scenario (see **Table 18-3**). The construction vehicle activities associated with these scenarios represent the future conditions without the proposed project and the baseline to which projected construction activities would be compared to determine potential construction traffic impacts.

As shown in **Table 18-4**, compared to the Previously Approved Project, whose peak quarter construction activities are expected to yield 25 and 19 vehicle trips during 6-7 AM and 3-4 PM,

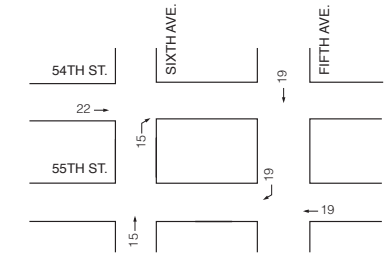
respectively, the proposed project would generate 66 and 56 more construction vehicle trips during these construction peak hours. With a public parking garage located across from the project site on West 54th Street and another adjacent to the project site on West 53rd Street, it is expected that most, if not all, construction worker vehicles would be accommodated at these locations. Access to these garages could be made from the west and south onto West 54th Street or from the east and north onto West 53rd Street. Construction truck deliveries would arrive and depart via similar travel patterns. Because there are these different choices of access and egress, the projected incremental construction vehicle trips, as illustrated in **Figure 18-1**, are expected to result in fewer than 50 vehicle trips through any intersection near the project site. Hence, in accordance with guidelines from the *CEQR Technical Manual*, a detailed construction traffic analysis is not warranted and the proposed project is not expected to result in significant adverse construction traffic impacts.

As shown in **Table 18-4**, compared with the Expanded Development Scenario, whose peak quarter construction activities are expected to yield 64 and 52 vehicle trips during 6-7 AM and 3-4 PM, respectively, the proposed project would generate 27 and 23 more construction vehicle trips during these construction peak hours (also illustrated in **Figure 18-1**). Since these incremental construction vehicle trips are below the 50 vehicle-trip CEQR analysis threshold, a detailed construction traffic analysis is not warranted and the proposed project is not expected to result in significant adverse construction traffic impacts.

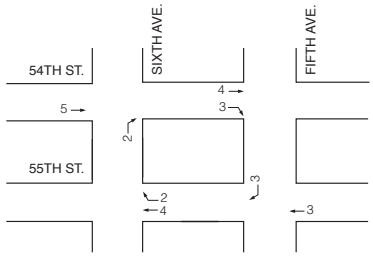
**Table 18-4**
**Peak Construction Vehicle Trip Projections: Net Increment**

| Hour | Auto Trips | | | Truck Trips | | | Total | | |
|---|---|---|---|---|---|---|---|---|---|
| | In | Out | Total | In | Out | Total | In | Out | Total |
| **Comparison to the Previously Approved Project** | | | | | | | | | |
| 5 AM – 6 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **6 AM - 7 AM** | 56 | 0 | 56 | 5 | 5 | 10 | 61 | 5 | **66** |
| 7 AM - 8 AM | 14 | 0 | 14 | 2 | 2 | 4 | 16 | 2 | 18 |
| 8 AM - 9 AM | 0 | 0 | 0 | 2 | 2 | 4 | 2 | 2 | 4 |
| 9 AM - 10 AM | 0 | 0 | 0 | 2 | 2 | 4 | 2 | 2 | 4 |
| 10 AM - 11 AM | 0 | 0 | 0 | 2 | 2 | 4 | 2 | 2 | 4 |
| 11- AM - Noon | 0 | 0 | 0 | 2 | 2 | 4 | 2 | 2 | 4 |
| Noon - 1 PM | 0 | 0 | 0 | 2 | 2 | 4 | 2 | 2 | 4 |
| 1 PM - 2 PM | 0 | 0 | 0 | 2 | 2 | 4 | 2 | 2 | 4 |
| 2 PM - 3 PM | 0 | 7 | 7 | 1 | 1 | 2 | 1 | 8 | 9 |
| **3 PM - 4 PM** | 0 | 56 | 56 | 0 | 0 | 0 | 0 | 56 | **56** |
| 4 PM - 5 PM | 0 | 7 | 7 | 0 | 0 | 0 | 0 | 7 | 7 |
| 5 PM - 6 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Comparison to the Expanded Development Scenario** | | | | | | | | | |
| 5 AM – 6 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **6 AM - 7 AM** | 23 | 0 | 23 | 2 | 2 | 4 | 25 | 2 | **27** |
| 7 AM - 8 AM | 4 | 0 | 4 | 1 | 1 | 2 | 5 | 1 | 6 |
| 8 AM - 9 AM | 0 | 0 | 0 | 1 | 1 | 2 | 1 | 1 | 2 |
| 9 AM - 10 AM | 0 | 0 | 0 | 1 | 1 | 2 | 1 | 1 | 2 |
| 10 AM - 11 AM | 0 | 0 | 0 | 1 | 1 | 2 | 1 | 1 | 2 |
| 11- AM - Noon | 0 | 0 | 0 | 1 | 1 | 2 | 1 | 1 | 2 |
| Noon - 1 PM | 0 | 0 | 0 | 1 | 1 | 2 | 1 | 1 | 2 |
| 1 PM - 2 PM | 0 | 0 | 0 | 1 | 1 | 2 | 1 | 1 | 2 |
| 2 PM - 3 PM | 0 | 2 | 2 | 1 | 1 | 2 | 1 | 3 | 4 |
| **3 PM - 4 PM** | 0 | 23 | 23 | 0 | 0 | 0 | 0 | 23 | **23** |
| 4 PM - 5 PM | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 2 | 2 |
| 5 PM - 6 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

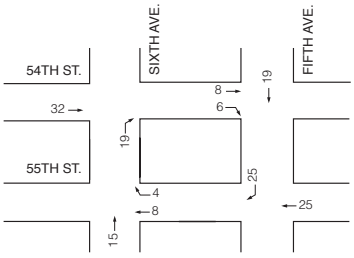
**PROPOSED PROJECT**




Construction Worker Autos: 6-7 AM

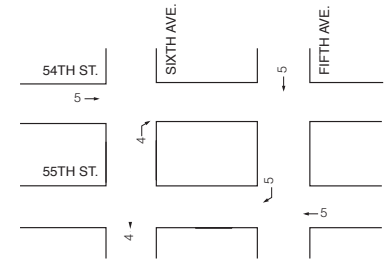



Construction Trucks: 6-7 AM

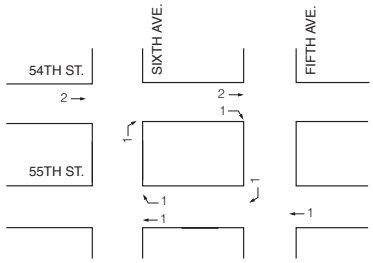



Construction Vehicle PCE's: 6-7 AM

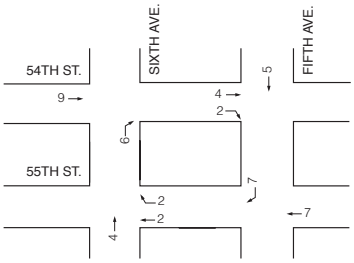
**PREVIOUSLY APPROVED PROJECT**




Construction Worker Autos: 6-7 AM

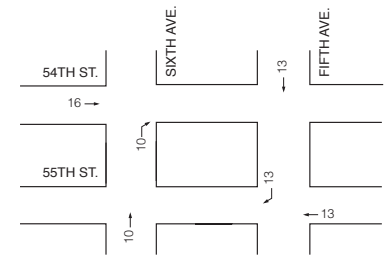



Construction Trucks: 6-7 AM

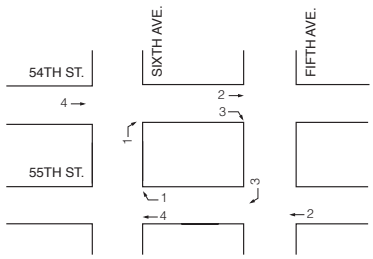



Construction Vehicle PCE's: 6-7 AM

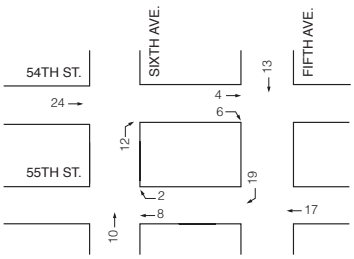
**EXPANDED DEVELOPMENT SCENARIO**




Construction Worker Autos: 6-7 AM

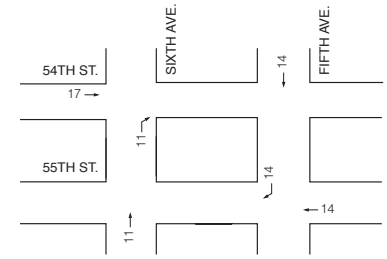



Construction Trucks: 6-7 AM

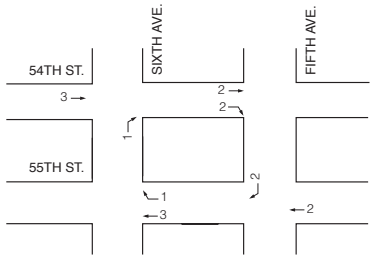



Construction Vehicle PCE's: 6-7 AM

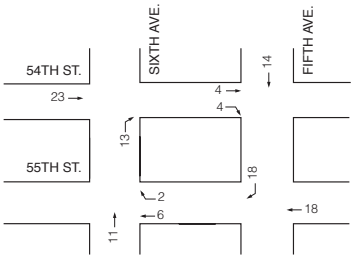
**PROPOSED PROJECT NET PREVIOUSLY APPROVED PROJECT**




Construction Worker Autos: 6-7 AM

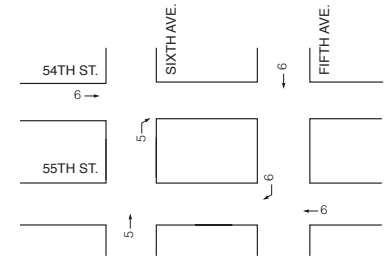



Construction Trucks: 6-7 AM

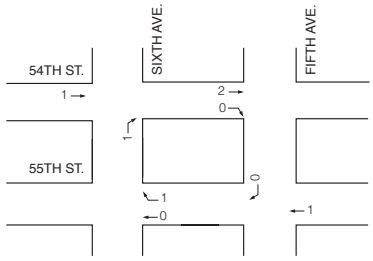



Construction Vehicle PCE's: 6-7 AM

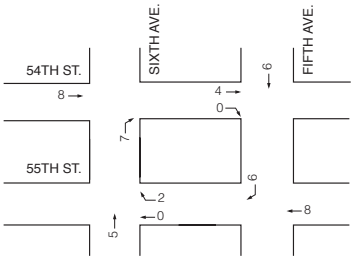
**PROPOSED PROJECT NET EXPANDED DEVELOPMENT SCENARIO**




Construction Worker Autos: 6-7 AM




Construction Trucks: 6-7 AM




Construction Vehicle PCE's: 6-7 AM

Construction Trip Increments and Screening
Figure 18-1

*Street Lane and Sidewalk Closures*

There could be various parking lane and/or sidewalk closures associated with the project's construction activities. A lane closure is practical for both West 53rd and 54th Streets for the width of the development site. Truck movements would be spread throughout the day and would generally occur between the hours of 6:00 AM and 3:00 PM, depending on the stage of construction. No rerouting of traffic is anticipated and, as mentioned above, moving lanes of traffic are expected to be available at all times. It is anticipated that the sidewalks immediately adjacent to the project site would also be closed to accommodate heavy loading areas for at least several months of the construction period. Pedestrians would either walk on the opposite side of the street or in a sectioned-off portion of the street. The New York City Department of Transportation (NYCDOT) would be consulted to determine the appropriate protective measures for ensuring pedestrian safety surrounding the development site.

*Parking*

The construction activities would generate an estimated maximum daily parking demand of up to 100 spaces during peak construction. This parking demand could be fully accommodated by the off-street spaces available within a ¼-mile radius, where more than 2,000 spaces are available overnight and more than 1,000 spaces are available during the AM commuter peak period, as shown in Chapter 14, "Traffic and Parking."

*Transit*

**Table 18-5** provides a summary of hourly person trip generation during peak construction under the proposed project and the two no action scenarios. With approximately 30 percent of the construction workers predicted to commute via auto, the remaining 70 percent are expected to travel to and from the project site via transit. During the peak quarter of construction, up to approximately 660 workers could be at the project site on a given day. This would result in approximately 380 construction-related transit trips during the 6-7 AM and 3-4 PM construction peak hours, respectively, as compared to approximately 100 under the Previously Approved Project and 260 under the Expanded Development Scenario. Since the study area is well served by mass transit including the B, D, E, F, and V subway lines and various bus routes along Fifth and Sixth Avenues, only nominally incremental increases in transit demand would be experienced along each of those routes and at each of the transit access locations (fewer than the CEQR threshold of 200 trips each). Furthermore, with these trips also occurring during hours outside of the typical commuter peak periods, incremental construction transit trips are not expected to result in significant adverse impacts to transit services and station facilities.

*Pedestrians*

For the same reasons discussed above, with respect to transit operations, a detailed pedestrian analysis to address the projected demand from the travel of construction workers to and from the project site is also not warranted. Compared to the Previously Approved Project and the Expanded Development Scenario, the proposed project would yield up to approximately 390 and 160 more pedestrian trips during the 6-7 AM and 3-4 PM construction peak hours, respectively. Considering that these pedestrian trips would primarily occur outside of peak hours and be distributed among numerous sidewalks and crosswalks in the area, there would not be a potential for significant adverse pedestrian impacts attributable to the projected construction worker pedestrian trips. During construction, where temporary sidewalk closures are required, adequate protection or temporary sidewalks and appropriate signage would be provided in accordance with NYCDOT requirements.

**Table 18-5**
**Peak Construction Person Trip Projections**

| Hour | Proposed Project | | | Previously Approved Project | | | | | | Expanded Development Scenario | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total | | | Net Increment | | | Total | | | Net Increment | | |
| | In | Out | Total | In | Out | Total | In | Out | Total | In | Out | Total | In | Out | Total |
| 5 AM – 6 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **6 AM - 7 AM** | 527 | 0 | 527 | 135 | 0 | 135 | 392 | 0 | 392 | 369 | 0 | 369 | 158 | 0 | 158 |
| 7 AM - 8 AM | 131 | 0 | 131 | 33 | 0 | 33 | 98 | 0 | 98 | 93 | 0 | 93 | 38 | 0 | 38 |
| 8 AM - 9 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 AM - 10 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 AM - 11 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11- AM - Noon | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Noon - 1 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 PM - 2 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 PM - 3 PM | 0 | 66 | 66 | 0 | 17 | 17 | 0 | 49 | 49 | 0 | 47 | 47 | 0 | 19 | 19 |
| **3 PM - 4 PM** | 0 | 527 | 527 | 0 | 135 | 135 | 0 | 392 | 392 | 0 | 369 | 369 | 0 | 158 | 158 |
| 4 PM - 5 PM | 0 | 65 | 65 | 0 | 16 | 16 | 0 | 49 | 49 | 0 | 46 | 46 | 0 | 19 | 19 |
| 5 PM - 6 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**Notes:** Hourly construction worker trips were derived from an estimated quarterly average number of construction workers per day.

*AIR QUALITY*

Air pollutants during construction are emitted from off-site mobile sources (i.e., worker vehicles and trucks on public roadways) and on-site construction equipment and trucks. In addition, fugitive dust can be suspended in air by construction activities such as demolition, excavation, and transferring and loading soil or loose material. Fugitive dust can also be re-suspended by construction vehicles traveling on unpaved surfaces and from wind erosion of stockpiled materials. Described in greater detail below, the possible impacts on local air quality during construction on the project site would be related to on-site sources and off-site mobile sources.

*On-Site Emissions*

Actual quantities of fugitive dust depend on the extent and nature of the excavation operations, the type of equipment employed, the physical characteristics of the underlying soil, the speed at which construction vehicles are operated, and the type of fugitive dust control methods employed. The U.S. Environmental Protection Agency (EPA) has delineated procedures in AP-42 (Table 13.2.3-1) from construction operations with no fugitive dust control measures. However, this is a national estimate and actual emissions would vary widely depending on many factors, including the intensity and type of land-clearing operations. Much of the fugitive dust generated by construction activities consists of relatively large-sized particles, which are expected to settle within a short distance from the construction site and not significantly affect the buildings or people nearby.

Excavation and construction on the project site would be conducted with the care mandated by the site's proximity to active uses. All appropriate fugitive dust control measures—including watering of exposed areas and dust covers for trucks—would be employed. In addition, all necessary measures would be implemented to ensure that the New York City Air Pollution Control Code regulating construction-related dust emissions is followed. As a result, no significant adverse air quality impacts from fugitive dust emissions are expected.

During the construction period, air pollutants would also be emitted from non-road engines. Not all on-site equipment, discussed in the previous sections would be expected to operate

simultaneously or continuously. Best practices would be used to reduce the amount of fugitive particulate matter emissions and dust from demolition and excavation.

*Mobile Source Emissions*

Mobile-source emissions are emissions of air pollutants from motor vehicles. During construction, such emissions may result from: (1) trucks delivering construction materials and removing debris, (2) workers' private vehicles, and (3) disruptions in traffic near the construction site.

Local increases in mobile-source emissions would be minimized by incorporating traffic maintenance requirements into the construction contract documents to ensure that:

- Construction requiring temporary lane closings for the relocation of utilities and for other purposes in heavily traveled areas would be performed, to the maximum extent possible, during off-peak hours;
- The existing number of traffic lanes would be maintained to the maximum extent possible; and
- Idling of delivery trucks or other fossil-fuel powered construction equipment would not be permitted during periods when they are being unloaded or are not in active use.

As described above in Traffic and Parking, the construction on the project site is not expected to result in 75 or more hourly vehicle trips. The number of construction truck trips would also be below the NYCDEP emission screening threshold; therefore, a mobile source analysis is not warranted.

*NOISE*

Potential effects on community noise levels during construction on the project site would include noise from construction equipment operation, and noise from construction vehicles and delivery vehicles traveling to and from the site. The level of impact of these noise sources depends on the noise characteristics of the equipment and activities involved, the construction schedule, and the location of potentially sensitive noise receptors.

Noise levels at a given location depend on the type and quantity of pieces of construction equipment being operated, the acoustical utilization factor of the equipment (i.e., the percentage of time a piece of equipment is operating at full power), the distance from the construction site, and any shielding effects (from structures such as buildings, walls, or barriers). Typical noise levels of construction equipment are presented in **Table 18-6**. Noise levels caused by construction activities would vary widely, depending on the stage and location of construction.

Increased noise levels caused by construction activities can be expected to be greatest during the early stages of construction. It is anticipated that the most significant noise source associated with the construction equipment would be jackhammers, hoe rams, paving breakers, saws, cranes, various types of trucks, and earth moving equipment. While some localized blasting would occur, such blasting would not be anticipated to result in significant noise impacts. All blasting would be performed to conform to FDNY regulations and any other applicable regulations. Blasting would be limited to a maximum of two blasts on any given day, and timed multiple charges of limited intensity, and blastmats would be utilized to limit potential impacts. With these measures, the limited amount of blasting that may occur would not be expected to result in any significant adverse noise impacts.

**Table 18-6**
**Typical Noise Emission Levels for Construction Equipment**

| Equipment Item | Noise Level at 50 ft. (dBA) |
|---|---|
| Air compressor | 81 |
| Backhoe | 80 |
| Ballast Equalizer | 82 |
| Ballast Tamper | 83 |
| Compactor | 82 |
| Concrete Mixer | 85 |
| Concrete Pump | 82 |
| Concrete Vibrator | 76 |
| Crane, Derrick | 88 |
| Crane, Mobile | 83 |
| Dozer | 85 |
| Generator | 81 |
| Grader | 85 |
| Impact Wrench | 85 |
| Jack Hammer, Drills | 88 |
| Loader | 85 |
| Paver | 89 |
| Pile Driver (Impact) | 101 |
| Pile Driver (Sonic) | 96 |
| Pneumatic Tool | 85 |
| Pump | 76 |
| Rail Saw | 90 |
| Rock Drill | 98 |
| Roller | 74 |
| Saw | 76 |
| Scarifier | 83 |
| Scraper | 89 |
| Shovel | 82 |
| Spike Driver | 77 |
| Tie Cutter | 84 |
| Tie Handler | 80 |
| Tie Inserter | 85 |
| Truck | 88 |

**Source:** Transit Noise and Vibration Impact Assessment, Federal Transit Administration (FTA), May 2006.

Construction noise is regulated by the requirements of the New York City Noise Control Code (also known as Chapter 24 of the Administrative Code of the City of New York, or Local Law 113), the NYCDEP Notice of Adoption of Rules for Citywide Construction Noise Mitigation (also known as Chapter 28), and EPA's noise emission standards. These local and federal requirements mandate that specific construction equipment and motor vehicles meet specified noise emission standards; that construction activities be limited to weekdays between the hours of 7 AM and 6 PM; and that construction materials be handled and transported in such a manner as not to create unnecessary noise. If weekend or after-hour work is necessary, additional special construction permits would be required to be obtained, as specified in the New York City Noise Control Code. Permit authorization for weekend or after hour construction work may be granted for circumstances such as emergency work, cases of public safety, City construction projects, construction activities with minimal impact, and for a claim of undue hardship resulting from

unique site characteristics, unforeseen conditions, scheduling conflicts and/or financial considerations. All regulations would be followed. A wide variety of measures can be used to minimize construction noise and reduce potential noise impacts. As part of the New York City Noise Control Code, a site-specific noise mitigation plan is to be developed and implemented that would include required source controls, path controls, and receptor controls. In addition, appropriate low-noise emission level equipment and operational procedures would be used, when practicable. During periods of extensive excavation activity, measures would be taken to ensure that no structural damage to adjacent structures would occur. Any noise impacts resulting from construction of the Previously Approved Project, Expanded Development Scenario, or proposed project would be temporary and short term. ✷