Chapter 20: Construction Impacts

A. INTRODUCTION

This chapter summarizes the conceptual construction plan for the development associated with the proposed project, and considers the potential for adverse impacts during construction. As discussed below, the development site would be redeveloped with a new commercial office building with a retail base (that may or may not also include trading floor uses), below-grade accessory parking, and new below-grade subway improvements. As part of the project, significant mass transit improvements would be undertaken, including the relocation and significant upgrade of the existing subway entrances on West 32nd and West 33rd Streets and the re-opening and renovation of the passageway under the south side of West 33rd Street.

Two development scenarios are under consideration for this project (Single-Tenant Office Scenario and Multi-Tenant Office Scenario), which have very similar construction schedules and would require similar numbers of workers and deliveries. However, because the Single-Tenant Office Scenario was found to have the more intensive construction program, its construction, in conjunction with the construction associated with the subway improvements (that would be undertaken to complement either office scenario) has been chosen for detailed analysis. The effects of construction of the Multi-Tenant Office Scenario would be very similar to those described below for the Single-Tenant Office Scenario, and would generally be identical to, or of slightly smaller magnitude during certain phases of project construction.

Collectively, the construction schedules and associated activities for the Single-Tenant Office Scenario and the below-grade subway improvements have been combined to represent a reasonable worst-case development scenario (RWCDS) for the construction analyses presented in this chapter. The development site is occupied by the Hotel Pennsylvania, which contains hotel rooms and ground-floor retail space along Seventh Avenue and West 32nd and West 33rd Streets. The project site consists of the development site and the remainder of the block (Block 808, Lot 40), which is occupied by the Manhattan Mall, containing a mix of chain retail stores. The existing Hotel Pennsylvania on the development site would be demolished to make way for the new commercial mixed-use building, and the Manhattan Mall would remain unaltered, except for the alterations that would occur as a result of the subway improvements associated with re-opening and renovating of the pedestrian passageway under the south side of West 33rd Street. The conceptual construction phasing and schedule for the RWCDS is described, followed by the types of activities likely to occur during the construction of the various project components. An assessment of potential impacts of construction activity and the methods that may be employed to avoid, minimize, or mitigate the potential for significant adverse construction impacts is then presented.

PRINCIPAL CONCLUSIONS

LAND USE

Construction activities would affect land use on the development site but would not alter surrounding land uses. Certain types of construction activities, such as excavation and foundation work, would be intrusive to the adjacent businesses, residences, and religious uses; however, all construction staging activities for the proposed project would occur within the development site or within portions of sidewalks, curbs, and travel lanes of public streets immediately adjacent to the development site. In later stages of construction, when work would take place within the building shell, effects on the surrounding uses would be substantially reduced. Additionally, access to surrounding land uses would be maintained throughout the construction period, and adherence to the provisions of the New York City Building Code and other applicable regulations would reduce the potential adverse effects of construction activities on land use patterns and neighborhood character. Moreover, although the project anticipates an approximately 4½-year construction schedule, the level of activity would vary depending on the types of construction activities being undertaken at development site or at the locations of the subway improvements, and no one area would experience the effects of the project's construction activities for the full duration of project construction. Potential noise effects on The Epic, a residential use, and the St. Francis Roman Catholic Church, both south of the development site, are discussed below under "Noise."

SOCIOECONOMIC CONDITIONS

Construction would create direct benefits resulting from expenditures on labor, materials, and services, as well as substantial indirect benefits created by expenditures by material suppliers, construction workers, and other employees involved in the direct activity. Construction would also contribute to increased tax revenues for the City and State, including those from personal income taxes. Construction of the RWCDS would not affect the access to and therefore the viability of any business. It is not expected that construction activities would cause the failure of any business thereby affecting neighborhood character. Overall, there would be no significant adverse impacts on socioeconomic conditions resulting from construction.

COMMUNITY FACILITIES

There are two community facilities located in the area surrounding the development site: the St. Francis Roman Catholic Church and the New York City Fire Department (FDNY) Engine 1 and Ladder 24. While construction of the proposed project would result in temporary increases in noise and traffic during the construction period, access to and from these facilities would not be affected during the construction period. As discussed below (see "Noise"), construction activities may result in interior noise levels at the church that would be above the noise level recommended by CEQR; while temporary, this is considered a significant adverse impact. Because the church already has double-glazed windows and central air conditioning (i.e., alternate ventilation), no mitigation measures are currently proposed.

OPEN SPACE

There are no publicly-accessible open spaces within the development site, and no open space resources would be used for staging or other construction activities. Therefore, the proposed project would not limit access to open space resources in the vicinity of the development site. At

limited times, activities such as excavation and foundation construction may generate noise that could impair the enjoyment of nearby open space resources, but such noise effects would be temporary. Therefore, construction of the proposed project would not result in significant adverse impacts on open space.

HISTORIC RESOURCES

Like the No Action condition, the demolition of the 22-story, brick- and stone-clad Hotel Pennsylvania will remove a S/NR-eligible resource from the development site. Because the S/NR-eligible Hotel Pennsylvania will be demolished with the No Action project in the future without the proposed actions, the redevelopment of the development site with the proposed project would not constitute a significant adverse impact on architectural resources. Historic American Buildings Surgery (HABS) Level II documentation would be undertaken by the project sponsor prior to the hotel's demolition to record the history and appearance of the Hotel Pennsylvania. This commitment would be set forth in a Restrictive Declaration. The HABS documentation would be submitted to an appropriate public repository.

The development site is within 90 feet of one architectural resource—the former Equitable Life Assurance Company Building. To avoid potential inadvertent construction-related impacts on this architectural resource, including ground-borne vibration, falling debris, and accidental damage from heavy machinery, a Construction Protection Plan (CPP) would be developed in consultation with the New York City Landmarks Preservation Commission (LPC) and would be implemented by a professional engineer prior to any demolition at the development site. Other architectural resources in the study area would not be expected to be adversely affected by the proposed project as they are at a greater distance from the development site.

TRAFFIC

The construction of the proposed project would generate its peak construction traffic at the end of the fourth quarter of 2012. Levels of construction traffic would; then taper off somewhat, but remain at consistently elevated levels though 2013 and into the first quarter of 2014. The construction of the No Action development would generate slightly lower amount of traffic in the second quarter of 2013. Comparing to the construction of the No Action development, the construction of the proposed project would not result in substantial increase in construction-related vehicle trips. Therefore, the construction of the proposed project is unlikely to result in any significant adverse traffic impacts.

Delivery trips would follow the New York City Department of Transportation (NYCDOT) designated truck routes. Delivery trips made by over-size construction truck, and temporary curbside lane or sidewalk closures made by these deliveries would take place in accordance with the detailed NYCDOT Office of Construction Mitigation and Coordination (OCMC)-approved Maintenance and Protection of Traffic (MPT) Plans.

PARKING

The construction of the proposed project would generate a maximum parking demand of approximately 160 spaces for construction workers commuting by private auto during the peak construction periods. This parking demand would be accommodated by numerous off-street parking facilities with more than 1,900 parking spaces available within the study area during the early morning peak accumulation periods. Hence, the construction of the proposed project is not expected to result in any significant adverse parking impacts.

TRANSIT

With the projected construction workers distributed among the various subway and bus routes, station entrances, and bus stops near the study area, only nominal increases in transit demand would be experienced along each of these routes and at each of the transit access locations during hours outside of the typical commuter peak periods. Hence, there would not be a potential for significant adverse transit impacts attributable to the projected construction worker transit trips. While there are likely to be temporary stairway closures at nearby subway stations, adequate circulation and access to transit service would be maintained through coordination with NYCDOT and Metropolitan Transportation Authority-New York City Transit (NYCT).

PEDESTRIANS

For the same reasons discussed above for transit, the construction activities would not result in any significant adverse pedestrian impacts. During construction, where temporary sidewalk closures are required, adequate protection or temporary sidewalks and appropriate signage would be provided and coordinated with NYCDOT.

AIR QUALITY

During construction of the proposed project, work activities and engine emissions from on-site equipment could have the potential to impact local air quality. While construction air emission sources would increase the ambient level of some pollutants in the immediate area surrounding the construction site, it is not expected that the intensity or duration of the construction activities would increase those pollutants by amounts that would be considered significant in ambient air. In most cases, heavy equipment would operate intermittently over the course of a day, and over the course of the construction period. The active construction zone would also move from one area to the next as construction progresses throughout the development site. Finally, the affects of construction activities on air quality would be minimized by implementing a range of measures as follows: minimizing use of diesel engines, using ultra-low sulfur diesel, restricting idling time, locating large emissions sources away from sensitive receptors, using best available tailpipe reduction technologies, and using Tier 2 or newer equipment, implementing a fugitive dust control plan, watering truck routes and exposed excavation areas, washing truck wheels, stabilizing truck routes, and covering dump trucks. Components of the emissions control program may be adjusted between the Draft Environmental Impact Statement (DEIS) and the Final Environmental Impact Statement (FEIS) based on refined analyses, as appropriate.

NOISE

During construction, a variety of measures that exceed standard construction practices would be employed to minimize construction noise and reduce potential noise impacts. While these noise reduction measures would be expected to substantially reduce noise levels, it is likely that during construction, the two sensitive receptors in the vicinity of the site—The Epic and the St. Francis Roman Catholic Church—would experience interior noise levels that would be above the 45 dBA L_{10} noise level recommended by CEQR for these uses over a period exceeding two or more consecutive years. This is considered a significant adverse noise impact. Because both The Epic and the church currently have double-glazed windows and central air conditioning (i.e., alternative ventilation), no mitigation measures are currently proposed.

VIBRATION

The buildings and structures of most concern with regard to the potential for structural or architectural damage due to vibration are those immediately adjacent to or across the street from the proposed development site. With the exception of the Manhattan Mall, which is immediately adjacent to the development site, vibration levels at nearby buildings and structures would be well below the 0.50 inches/second PPV limit for structural damage. At the Manhattan Mall, special measures would be utilized and a monitoring program would be implemented to ensure that this limit is not exceeded, and that no architectural or structural damage would occur. At all other locations, the distance between construction equipment and receiving buildings or structures is large enough to avoid vibratory levels that would result in architectural or structural damage.

In terms of potential vibration levels that would be perceptible and annoying, the pieces of equipment that would have the most potential for producing levels which exceed the 65 VdB limit are the clam shell drop and vibratory roller. A clam shell drop would produce perceptible vibration levels (i.e., vibration levels exceeding 65 VdB) at receptor locations within a distance of approximately 232 feet. However, the operation would only occur for limited periods of time at a particular location and therefore would not result in any significant adverse impacts. (No pile driving or blasting are expected as part of the proposed project's construction.) In no case are significant adverse impacts from vibrations expected to occur.

CUMULATIVE EFFECTS

There are a number of large-scale transportation projects that will be under construction in the vicinity of the development site in the future without the proposed project. These projects include the Empire State Development Corporation's Moynihan Station, New Jersey Transit's Access to the Region's Core (ARC) project, and possibly, Metro-North's project to bring service to the Penn Station Complex. While these projects are all expected to be completed after the proposed project's estimated 2014 completion year, some construction phases for these projects will occur at the same time the proposed project would be constructed.

An assessment was undertaken to determine whether there would be the potential for cumulative impacts from construction of the proposed project and these transportation projects. It is anticipated that because construction efforts for these three projects would occur at a distance from the development site, the potential for cumulative effects would be minimal. However, construction of the proposed project would be coordinated with these other projects to the extent practicable, to minimize the potential for adverse construction impacts of the concurrent efforts.

B. OVERVIEW OF CONSTRUCTION ACTIVITIES

A description of the proposed project's general construction practices (including those associated with deliveries and access, hours of work, sidewalk and lane closures, staging and laydown, and construction parking), construction methods, and a conceptual schedule of anticipated construction activities, is provided in the discussion below.

GENERAL CONSTRUCTION PRACTICES

Certain practices would be observed throughout the construction of the proposed project. For construction on the development site, as well as for construction at the locations of the various subway improvements, the construction manager for each location would designate a contact

person for community relations throughout the construction period. This person would serve as the contact for the community to voice concerns about construction activities, and would be available to meet with the community to resolve concerns or problems.

The following describes typical construction practices in New York City. In certain instances, practices employed at the individual construction sites may vary from those described below.

DELIVERIES AND ACCESS

Access to the construction sites would be controlled. The work areas would be fenced off, or otherwise isolated from the general public, and limited access points for workers and trucks would be provided. Typically, worker vehicles would not be allowed into the construction area, as there would be no place for them to park. Security guards and flaggers would be posted, and all persons and trucks would have to pass through security points. Workers or trucks without a need to be on-site would not be allowed entry. After work hours, the gates or other portals allowing access to the construction sites would be closed and locked. Unauthorized access would be prevented after work hours and during weekends. Material deliveries to the sites would be controlled and scheduled.

HOURS OF WORK

Construction activities for the RWCDS would take place in accordance with New York City laws and regulations, which allow construction activities to take place between 7 AM and 6 PM. Construction work would begin at 7 AM on weekdays, with most workers arriving between 6 AM and 7 AM. Typically, work would end at 3:30 PM, but could be extended until 6 PM for such tasks as finishing a concrete pour for a pad, or completing the bolting of a steel frame erected that day. Extended workday activities would not include all construction workers on-site, but only those involved in the specific task. Extended workdays would occur during foundation and superstructure tasks, and limited extended workdays could occur during other tasks over the course of construction but would be minimized to the greatest extent practicable.

At limited times over the course of constructing a building, weekend work could be required. Weekend work requires a permit from the New York City Department of Buildings (DOB) and, in certain instances, approval of a noise mitigation plan from New York City Environmental Protection (NYCEP) under the City's Noise Code. The New York City Noise Control Code, as amended in December 2005 and effective July 1, 2007, limits construction (other than special circumstances as described below) to weekdays between the hours of 7 AM and 6 PM, and sets noise limits for certain specific pieces of construction equipment. Construction activities occurring after hours (weekdays between 6 PM and 7 AM and on weekends) may be permitted only to accommodate: (1) emergency conditions; (2) public safety; (3) construction projects by or on behalf of City agencies; (4) construction activities with minimal noise impacts; and (5) undue hardship resulting from unique site characteristics, unforeseen conditions, scheduling conflicts, and/or financial considerations. In such cases, the numbers of workers and pieces of equipment in operation would be limited to those needed to complete the particular authorized task. Therefore, the level of activity for any weekend work would be less than a normal workday. If it were to become necessary, the typical weekend workday would be on Saturday, beginning with worker arrival and site preparation at 7 AM, and ending with site cleanup at 5 PM.

A few tasks may have to be completed without interruption, and the work can extend past 6 PM. In certain situations, concrete must be poured continuously to form one structure without joints.

This type of concrete pour is usually associated with foundations and structural slabs at grade, which would require a minimum of 12 hours or more to complete, depending on the size of the area being poured.

SIDEWALK AND LANE CLOSURES

For the construction of the new building, it is anticipated that standard sidewalk and street lane closures, typical for construction of high-rise buildings, would be required, as described in more detail below.

Construction activities at the development site may require the closing of curbside traffic lanes immediately adjacent to the site on the south side of West 33rd Street between Sixth and Seventh Avenues, the eastern-most lane on Seventh Avenue between 32nd and 33rd Streets, and possibly the curbside lane adjacent to the site on the north side of West 32nd Street between Sixth and Seventh Avenues.. These lanes may be closed and used for staging of cranes and other equipment for part of the duration of construction. NYCDOT would have to approve any lane closures and would do so only if the lane closure would not unduly interfere with traffic flow. In addition, construction activities may require the closing and/or relocation of pedestrian sidewalk paths at these same locations. It is expected that these closings or relocations would occur over a period of approximately 4½ years.

Some sidewalks may have protective sheds or pedestrian access may be within barriers when construction is taking place next to the sidewalk. To the extent possible, pedestrian traffic would be maintained via covered pedestrian walkways to ensure public safety. In addition, it is expected that in certain locations temporary access ways for trucks and worker vehicles into the construction sites would cross sidewalks. However, during some construction activities, it may be necessary to close sidewalks adjacent to the construction sites and temporarily re-route pedestrian traffic.

Construction activities related to the subway improvements, particularly the stairways and entrances to the subways, may require some re-routing of pedestrian flows both above and below grade. In addition, construction activities may affect some subway station movements during stairway construction. It is intended that construction would be performed during normal hours by segregating pedestrian flows with barriers. While measures would be taken, in coordination with NYCT, to minimize inconveniences to subway and commuter rail patrons (including scheduling construction activities during off-peak periods to the extent possible), construction activities may result in some temporary disruptions to pedestrian circulation. For the construction work associated with the subway improvements, no street lane closures are assumed to be required. Some sidewalk closures may occur during some work around subway entrances.

As discussed above, construction activities would require the closing of portions of one traffic lane on the streets immediately adjacent to the construction site, and may also require the closing and/or relocation of pedestrian sidewalk paths at some locations. A plan would be developed in coordination with the Mayor's Office of Construction to minimize disruptions to traffic and pedestrian flows during the construction period. At all locations where either curbside or moving lanes of traffic are closed, measures would be taken to provide the maximum number of moving lanes to maintain traffic flows.

STAGING AND LAYDOWN AREAS

Because of the density of the finished building, laydown areas would likely be on the curb lane of the local streets bordering the development site. It is not expected that any streets would be closed and used for material laydown. Materials that are needed during the day are usually delivered early that day. These materials, such as reinforcing bars and prefabricated pieces, would be stored at the site until needed.

CONSTRUCTION WORKER PARKING

Because of the excellent transit access to the development site, as well as the locations of the subway improvements, it is anticipated that many of the workers would travel to the site via mass transit. It is not anticipated that any notable number of construction worker vehicles would have the ability to park on the streets in the area. However, for workers choosing to drive to the site, off-street parking is available at a number of nearby lots and garages in the study area. The combined construction activities for the development site and the subway improvements would generate a maximum daily parking demand of approximately 160 spaces at the end of 2012, with daily worker parking needs ranging between approximately 125 to 155 spaces between the first quarter of 2013 and the first quarter of 2014. During other times of construction of the proposed project, daily worker parking demand would average between 50 and 125 spaces.

CONSTRUCTION METHODS AND ACTIVITIES

The mixed-use commercial building would utilize conventional construction techniques. The building site would be prepared, the foundation built, and then the building erected. The skeleton or core of the building would be built, and then the exterior or shell installed as the core rises to 6 to 8 stories. The building on the development site, as well as the subway improvements, would involve extensive interior finishing for the walls, floors and the associated electrical and mechanical systems. It is important to note that there is often overlap between one or more of the various phases of construction. The construction methods to be employed are described in more detail below.

GENERAL SITE PREPARATION

The first step would be to prepare the development site for construction. This would involve site cleanup and demolition. The activities associated with these general site preparation steps are outlined below and will occur in the No Action condition in preparation for the No Action building (or for the proposed project, if approved). Many, but not all, of the following activities would also be necessary at the subway improvement sites (construction of the subway improvements would occur only with the proposed project, not with the No Action building).

Site Cleanup and Demolition

At the development site, site cleanup and demolition activities would begin in mid-2010 and last for approximately 16 months, finishing by the end of 2011. The activities associated with this stage of project construction would be the same with the No Action building. For the various subway improvements, these activities would be expected to take about 9 months each, commencing at different times.

The purpose of these activities is to remove all loose materials and complete the demolition of the building. It is notable that because of the size and location of the existing Hotel Pennsylvania

(particularly as it is situated partially over active railroad tracks), that the demolition of this structure will involve the deconstruction or dismantling of the building, rather than more traditional demolition using wrecking balls or implosion. One of the steps in general demolition is to remove any economically salvageable materials, and then large equipment is used to deconstruct the building. Typical demolition, including the deconstruction techniques that would be utilized at the development site, requires solid temporary walls around the building to prevent accidental dispersal of building materials into areas accessible to the general public. After the building has been deconstructed, front-end loaders would be used to load materials into dump trucks. The demolition debris would be sorted prior to being disposed at landfills to maximize recycling opportunities. The activities associated with this stage of construction would include:

- Installation of a site perimeter security fence;
- Removal of residual materials, loose debris, furniture, and garbage;
- Inventory and removal of small containers, and loose items requiring special disposal, such as paints, oils, petroleum containers, etc.;
- Demolition of the building above ground, and of any portions of the existing subway facilities necessary for renovation or expansion, and segregating materials for disposal/recycling; and
- Breakup and removal of concrete floor slabs for recycling/disposal.

Demolition and excavation may disturb or involve certain materials (e.g., asbestos-containing materials, lead-based paint) that are governed by existing federal, state, and local regulations. Adherence to all applicable regulations related to the disturbance and disposal of these materials would avoid significant adverse impacts.

Accounting for the size of the building to be demolished, about 220 workers are expected to be on-site during these activities for the development site, with an additional 10 to 20 workers needed at the various subway improvement sites. The equipment would include forklifts, small trucks, barrel handlers, and various small tools. About 27 trucks per day are expected to travel to and from the development site during this phase of construction, with another approximately 4 to 5 trucks per day associated with each of the subway improvement sites.

CONSTRUCTION OF THE DEVELOPMENT SITE BUILDING

Building construction would begin after all site cleanup and demolition is largely completed; foundation work would overlap with those initial activities by about four months. Typical construction stages for commercial buildings do not vary greatly, and it is estimated that the construction of the commercial building proposed for the development site would require approximately 3 years to be completed after the demolition work is finished, because of its size and specialized building systems. Building construction would generally involve four phases: foundations, core and shell construction, exteriors, and interior finishing. The development site's commercial office building would be built as a steel frame structure, with poured-in-place steel reinforced concrete on metal decks. To construct the taller components of the building, construction of building cores and shells would include installation of steel beams and columns and roof construction. These activities would require the use of cranes, compressors, material hoists, on-site reinforcing bar bending jigs, welding equipment, and a variety of hand-held tools. At this point in the construction, electric service may be provided, and generators would no longer be needed. The building structure and the interior finishing stages would overlap one another, as the upper parts of the structure would be under construction while finishing of the

lower floors would be completed. Interior finishing involves electrical installation; heating, ventilation and air conditioning; sheet-rocking; and painting. Mostly small hand tools are used for interior finishing, but a high number of deliveries for materials such as sheet rock, ceiling tiles, flooring, and interior electrical, mechanical and plumbing fixtures are required.

It is expected that almost all work would be done during normal construction hours of 7 AM to 4 PM, five days a week. On occasion, some extended shift work to 6 PM may be required to complete a particular task. Weekend and night work is not expected to be required.

Foundations

One of the steps that would occur during this stage of construction activities would be to excavate into bedrock for the footings that will be needed to set the column foundations that would support the building. Because of the shallow depth to bedrock at the development site, pile driving is not anticipated. It is also not anticipated that blasting would be necessary for the bedrock excavation, and that the necessary excavation would be accomplished by cutting into the bedrock. Some of the early foundation work can be undertaken independent of the demolition of the hotel that would occur during the previous construction phase, which allows for an overlap of approximately four months for these two phases of construction. This involves the construction of a new crash wall being built beneath the development site at track level adjacent to the tracks leading in and out of Penn Station, in an area beneath West 33rd Street and Seventh Avenue. A variety of other equipment would be used for the demolition and site cleanup activities. Foundation work would include the use of bobcats, rockbreakers, loaders, pumps, motorized concrete buggies, concrete pumps, jackhammers, pneumatic compressors, a variety of small (mostly hand-held) tools, as well as dump trucks and concrete trucks. Approximately 130 workers would be "on-site" during these tasks, with deliveries estimated to require between 10 and 20 trucks per day, depending on which stage of site preparation activity is underway. Because of the complex nature of erecting such a large structure partially over active rail lines, these activities would take longer than would be expected for a typical office building; for this project these activities are expected to last about 16 months.

Core and Shell

It has been estimated that the core and shell construction of the proposed building would last approximately 28 months and would include construction of the building's framework (installation of beams and columns) and floor decks. These activities would require the use of the tower crane, compressors, personnel and material hoists, concrete pumps, on-site reinforcing bar bending jigs, welding equipment, and a variety of hand-held tools, in addition to the delivery trucks that would bring construction materials to the site. Each day, between 300 and 700 workers and about 20 to 30 truck deliveries would be required for this stage of building construction.

Exteriors

The exterior would likely be either concrete or steel and glass. In either case, the exterior is typically assembled off-site and trucked to the site. Either concrete planks or steel and glass sheets would be lifted by large cranes from the beds of the tractor trailers and secured into place on the face of the building. Exterior construction work, which also includes roofing and waterproofing, would overlap with the tower building core and shell construction. This stage of construction would require about 180 workers and about 5 truck deliveries per day per building, and would last for about 18 months.

Interior Fit-out and Finishing

This stage would include the construction of interior partitions, installation of lighting fixtures, interior finishing (flooring, painting, etc.), and mechanical and electrical work, such as the installation of elevators. Mechanical and other interior work would overlap almost completely with the tower building core and shell construction, extending for about an additional month beyond the core and shell activities, for a total of about 24 months. The activities during this stage of construction would employ about 150 to 250 workers. In addition, anywhere from 10 to 20 truck deliveries would be expected per day at the building site. Equipment used during interior construction would include exterior hoists, pneumatic equipment, delivery trucks, and a variety of small hand-held tools. This stage of construction is the quietest and does not generate fugitive dust.

SUBWAY IMPROVEMENTS

During construction of the various subway improvements, the necessary activities would include stairway widening, renovation and expansion of other subway facilities, widening of the pedestrian passageway under the south side of West 33rd Street, and the associated water- and fire-proofing, as well as the interior finishing of the renovated or expanded subway facilities, which would involve electrical installation; heating, ventilation and air conditioning; sheet-rocking; and painting. Mostly small hand tools are used for interior finishing. As with the construction of the commercial office building, deliveries for materials, such as sheet rock, ceiling tiles, flooring and interior electrical, mechanical and plumbing fixtures are required. The overall duration for construction activities at each of the three given subway improvement sites is expected to be about 29 months, including the associated site preparation activities at each location. These activities would be significantly less worker-intensive than the construction of the new office building; for any of the three given subway improvement sites, a maximum of about 70 workers per site would be required each day. On average, approximately 4 to 7 delivery trucks would arrive at and leave each of the subway improvement sites each working day in connection with this task.

For the construction of the subway improvements, it is expected that almost all work would be done during normal construction hours of 7 AM to 4 PM, five days a week. On occasion, some extended shift work to 6 PM may be required to complete a particular task. Weekend and night work is not expected.

CONCEPTUAL CONSTRUCTION PHASING AND SCHEDULE

The anticipated construction activities for the proposed project can be divided into three general categories: site preparation, above-grade building construction, and construction of subway improvements. Construction of the various components of the proposed project would occur over a number of years, with construction activities and intensities varying, depending on which components of the overall development are under way at any given time. Site preparation activities on the development site are anticipated to begin in September 2010, with construction activities to begin late in the third quarter of 2011, and with complete build-out of the development assumed to be completed in the fourth quarter of 2014. The various subway improvements to be undertaken as part of the proposed project would fall within this timeframe, with construction on the Sixth Avenue and Seventh Avenue improvements anticipated to begin in the fall of 2010, continuing through early 2013, and the improvements and expansion of the

pedestrian passageway anticipated to commence in mid-2011, with completion anticipated in early 2014.

Figure 20-1 presents a conceptual schedule of construction for the RWCDS construction plan for the proposed project, indicating the estimated start and end dates for each general construction activity (site preparation/demolition, foundations, core and shell, exteriors, interiors/finishing) for each of the proposed project components that would be constructed, and when these activities would be expected to overlap.

Table 20-1 presents the maximum daily number of construction workers and delivery trucks expected for each quarter during the construction of the proposed project (including construction at the development site and at the three subway improvement sites).

Table 20-1
Quarterly Peak Numbers of Daily Construction Workers and Delivery Trucks: Proposed Action (Single-Tenant Office Scenario with Subway Improvements)

Year	2010				2011				2012			
Quarter	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Workers	0	0	276	276	298	298	396	396	308	326	589	1,145
Trucks	0	0	35	35	37	37	51	51	29	30	58	67
Year	2013				2014				Overall RWCDS			
Quarter	1st	2nd	3rd	4th	1st	2nd	3rd	4th	Maximum		Average	
Workers	1,070	1,075	1,090	1,083	1,070	874	833	736	1,145		639	
Trucks	57	49	49	49	50	44	44	41	67		43	

Notes: The number of construction workers and delivery trucks represents the highest number over a several week period and may not reflect the absolute peak day.
1st Quarter: January-March; 2nd Quarter: April-June; 3rd Quarter: July-September; 4th Quarter: October-December.
Estimates have assumed construction work would occur weekdays during regular allowable construction hours for most activities, with some selected activities (e.g., concrete pouring) requiring extended shifts involving approximately 20 percent of the daily workers.

The number of workers would peak at the end of 2012, with up to 1,145 workers per day. During the same period there would also be a peak of 67 trucks per day associated with project construction activities. This worker and truck peak occurs at the end of the fourth quarter of 2012, based on the projected schedule. These numbers represents the highest number of workers and deliveries sustained over a several week period and may not reflect the single highest day.

C. THE FUTURE WITHOUT THE PROPOSED PROJECT

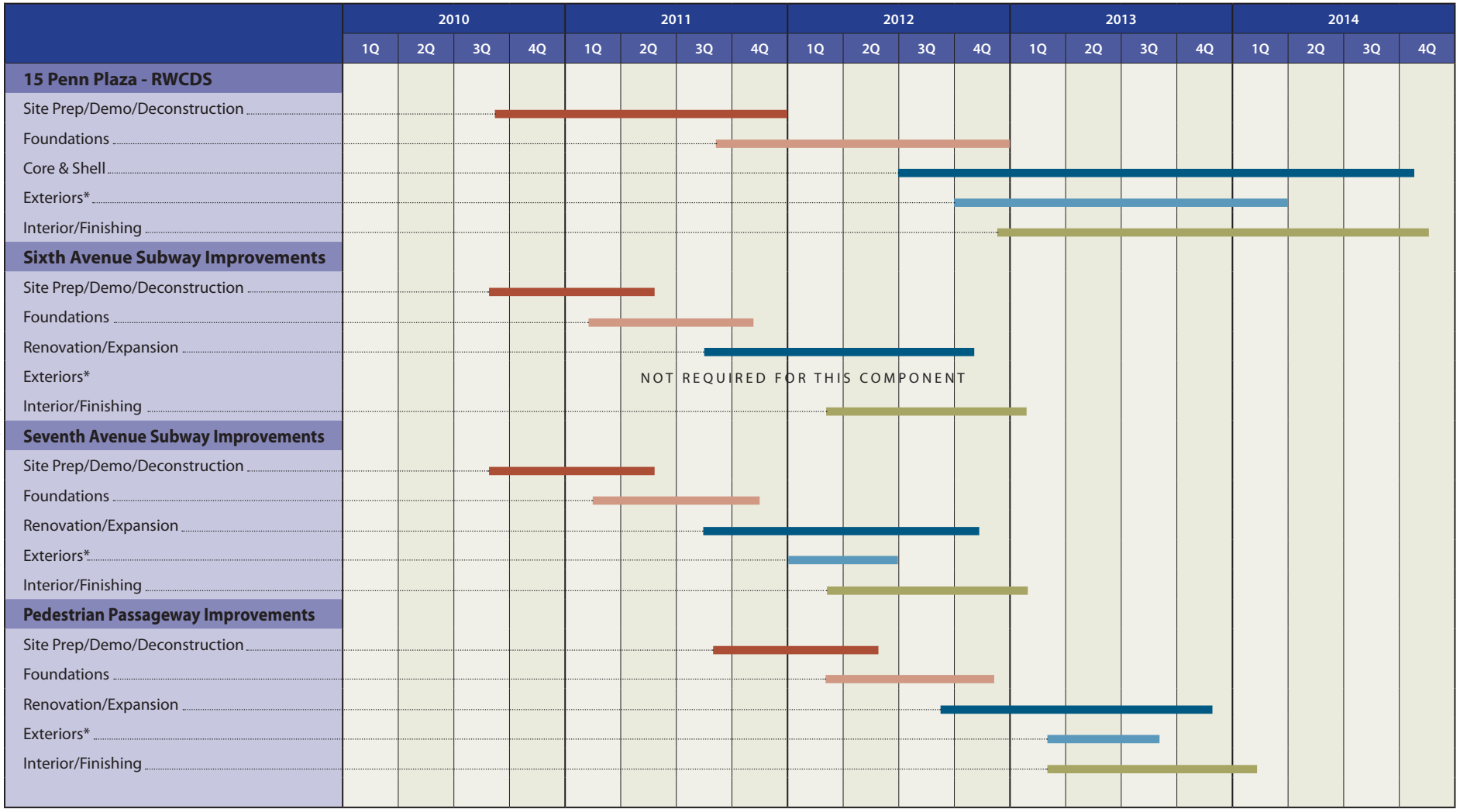
DEVELOPMENT SITE AND PROJECT SITE

In the future without the proposed project (the "No Action" condition), the existing Hotel Pennsylvania will be demolished and an as-of-right commercial office building development of approximately 1.6 million gross square feet (gsf) will be constructed on the development site (the No Action Building), which will include a mix of commercial office, retail, lobby and amenity spaces, and mechanical space, as well as below-grade accessory parking for 100 vehicles.

No changes are anticipated to occur at the Manhattan Mall site.

Therefore, in the No Action condition, the development site will be transformed from a site containing hotel use to a site containing commercial office and retail uses. The remainder of the project site (the Manhattan Mall site) will continue to contain retail and office uses.

2.4.2010



RWCDS Construction Schedule

Figure 20-1

Construction of the No Action development would be expected to take a total of about 42 months to complete. Of this construction duration, approximately 18 months would be devoted to the site preparation, demolition, and foundations phases—which would be nearly identical to the Single-Tenant Office Scenario building—with about 28 months of general construction activities for the No Action development. Construction of the No Action development would involve the same construction phases with similar durations and worker intensities as the proposed Single-Tenant Office Scenario. The shorter duration of construction for the No Action development would largely be a result of the smaller building to be constructed (fewer stories, and commensurate less building finishing work) when compared with the proposed project. Additionally, the No Action development would not include any of the construction activities associated with the various subway improvements, so that the worker, truck movements, and construction activities and temporary disruptions to certain sidewalk and transit elements will not occur in the No Action condition.

Table 20-2 presents the maximum daily number of construction workers and delivery trucks expected for each quarter during the construction of the No Action development (excluding the three subway improvement sites). The number of workers would peak during the first and second quarters of 2013 with up to 880 workers per day, during this period there would also be a maximum of 29 trucks per day associated with project construction activities. Similarly, it should be noted that the peak for trucking activity associated with the No Action development would not occur during the same period, and instead would occur in the fourth quarter of 2011, with up to 32 trucks per day. Worker levels during this period would be lower than the peak for the overall No Action development, peaking at approximately 320 workers per day during the 2011 truck peak, and accounting for the various construction sites. These numbers represent the highest number of workers and deliveries sustained over a period of several weeks and may not reflect the single highest day.

Table 20-2
Quarterly Peak Numbers of Daily Construction Workers and Delivery Trucks: No Action Development (without Subway Improvements)

Year	2010				2011				2012			
Quarter	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Workers	0	0	221	221	221	221	221	316	125	398	404	688
Trucks	0	0	24	24	24	24	24	32	11	26	20	23

Year	2013				2014				Overall RWCDS	
Quarter	1st	2nd	3rd	4th	1st	2nd	3rd	4th	Maximum	Average
Workers	880	880	607	504	48	0	0	0	880	299
Trucks	29	29	15	14	5	0	0	0	32	17

Notes: The number of construction workers and delivery trucks represents the highest number over a several week period and may not reflect the absolute peak day.
1st Quarter: January-March; 2nd Quarter: April-June; 3rd Quarter: July-September; 4th Quarter: October-December.
Estimates have assumed construction work would occur weekdays during regular allowable construction hours for most activities, with some selected activities (e.g., concrete pouring) requiring extended shifts involving approximately 20 percent of the daily workers.

Construction of the No Action building would result in elevated noise levels—$L_{eq(1)}$ noise levels in the high-70 to mid-80 dBA range—at the two sensitive receptor locations adjacent to the development site on West 32nd Street between Sixth and Seventh Avenues (The Epic and the St. Francis Roman Catholic Church). Noise reduction measures could be incorporated into construction of the No Action building (see "Noise," under section D, below); however, even with such measures it is likely that during construction of the No Action building noise levels

would be increased by more than 3 dBA comparing the noise levels due to construction activities with existing noise levels.

SURROUNDING AREA

There are a number of large-scale transportation projects that are anticipated to be under construction in the vicinity of the development site in the future without the proposed project. These projects include the Empire State Development Corporation's Moynihan Station, New Jersey Transit's Access to the Region's Core (ARC) project, and possibly, Metro-North's project to bring service to the Penn Station Complex. These projects will be constructed in the following areas:

- Moynihan Station. Construction will occur predominantly below grade west of Eighth Avenue and within the Farley Complex located between Eighth and Ninth Avenues between 31st and 33rd Streets. One high rise building will constructed on an associated development transfer site on the western portion of the One Penn Plaza block, between West 33rd and 34th Streets at Eighth Avenue, a full block west of the 15 Penn Plaza development site. This site would involve construction typical of a high-rise building.
- ARC Project. NJ Transit's ARC Project includes the construction of two new tracks in the Meadowlands in New Jersey, two new single-track tunnels under the Hudson River and platform and station capacity improvements at a new station under 34th Street in Manhattan that will have connections to Penn Station, including new station entrances at Sixth, Seventh and Eighth Avenues, and will include direct connections to New York City subway concourses at Eighth, Seventh, and Sixth Avenues, as well as to the PATH train service. Most of the ARC construction would occur below grade, with the tunnel spoils and much of the staging for ARC project construction efforts in Manhattan to be located at Twelfth Avenue and West 28th Street, well west of the 15 Penn development site. The ARC project would also include two additional minor spoils removal fan plant and access shaft sites that would be located at 33rd Street between Sixth and Seventh Avenues and 35th Street between Seventh and Eighth Avenues, both north of the 15 Penn Plaza development site.
- Metro-North at Penn Station. There are existing track connections from Metro-North's New Haven and Hudson Lines to Penn Station on the West Side of Manhattan which could be used to provide access for Metro-North trains into Penn Station. Connections of Metro-North's Harlem Line may require track reconstruction. However, at Penn Station, these construction activities would be below grade and any necessary above ground work would not be anywhere near the 15 Penn development site.

It is anticipated that these three projects would include, where necessary, the coordination of construction schedules and activities for these projects as they would affect overall access to, and circulation within, the Penn Station Complex. This coordination will avoid or minimize, to the extent practicable, adverse construction impacts of the concurrent efforts on the station.

D. PROBABLE IMPACTS OF THE PROPOSED PROJECT

LAND USE AND NEIGHBORHOOD CHARACTER

Construction activities would affect land use on the development site but would not alter surrounding land uses. Certain types of construction activities, such as excavation and foundation work, would be intrusive to the adjacent businesses, residences, and religious uses;

however, all construction staging activities for the proposed project would occur within the development site or within portions of sidewalks, curbs, and travel lanes of public streets immediately adjacent to the development site. In later stages of construction, when work would take place within the building shell, effects on the surrounding uses would be substantially reduced. Additionally, access to surrounding land uses would be maintained throughout the construction period, and adherence to the provisions of the New York City Building Code and other applicable regulations would reduce the potential adverse effects of construction activities on land use patterns and neighborhood character. Moreover, although the project anticipates an approximately 4½-year construction schedule, the level of activity would vary depending on the types of construction activities being undertaken at development site or at the locations of the subway improvements, and no one area would experience the effects of the project's construction activities for the full 4½-year duration. The potential noise effects on The Epic, a residential use south of the project site, are discussed in detail in "Noise."

SOCIOECONOMIC CONDITIONS

Construction would create direct benefits resulting from expenditures on labor, materials, and services, as well as substantial indirect benefits created by expenditures by material suppliers, construction workers, and other employees involved in the direct activity. Construction would also contribute to increased tax revenues for the City and State, including those from personal income taxes. Construction of the RWCDS would not affect the access to and therefore the viability of any business. It is not expected that construction activities would cause the failure of any business thereby affecting neighborhood character. Overall, there would be no significant adverse impacts on socioeconomic conditions resulting from construction of the proposed project.

COMMUNITY FACILITIES

There are no public schools, hospital facilities, day care facilities, or public libraries within the area immediately surrounding the development site. The St. Francis Roman Catholic Church is located directly south of the development site with its main entrance on West 31st Street, and the New York City Fire Department (FDNY) Engine 1 and Ladder 24 facilities are located on the south side of West 31st Street. While construction of the proposed project would result in temporary increases in noise and traffic during the construction period, access to and from these facilities would not be affected during the construction period. As discussed below (see "Noise"), construction activities may result in interior noise levels at the church that would be above the noise level recommended by CEQR; while temporary, this is considered a significant adverse impact. Because the church already has double-glazed windows and central air conditioning (i.e., alternate ventilation), no mitigation measures are currently proposed.

OPEN SPACE

There are no publicly-accessible open spaces within the development site, and no open space resources would be used for staging or other construction activities. Therefore, construction of the proposed project would not limit access to open space resources in the vicinity of the development site. At limited times, activities such as excavation and foundation construction may generate noise that could impair the enjoyment of nearby open space resources, but such noise effects would be temporary. Therefore, construction of the proposed project would not result in significant adverse impacts on open space.

HISTORIC RESOURCES

Like with the No Action development, the demolition of the 22-story, brick- and stone-clad Hotel Pennsylvania will remove a S/NR-eligible resource from the development site. Because the S/NR-eligible Hotel Pennsylvania will be demolished with the No Action project in the future without the proposed actions, the redevelopment of the development site with the proposed project would not constitute a significant adverse impact on architectural resources. HABS Level II documentation would be undertaken by the project sponsor prior to the hotel's demolition to record the history and appearance of the Hotel Pennsylvania. This commitment would be set forth in a Restrictive Declaration. The HABS documentation would be submitted to an appropriate public repository.

As described in Chapter 8, "Historic Resources," the development site is within 90 feet of one architectural resource—the former Equitable Life Assurance Company Building, which is approximately 60 feet south of the development site. To avoid potential inadvertent construction-related impacts on this architectural resource, including ground-borne vibration, falling debris, and accidental damage from heavy machinery, a Construction Protection Plan (CPP) would be developed in consultation with the New York City Landmarks Preservation Commission (LPC) and would be implemented by a professional engineer prior to any demolition at the development site. The CPP would follow the guidelines set forth in section 523 of the *CEQR Technical Manual*, including conforming with LPC's *New York City Landmarks Preservation Commission Guidelines for Construction Adjacent to a Historic Landmark* and *Protection Programs for Landmark Buildings*. The CPP would also comply with the procedures set forth in DOB's *Technical Policy and Procedure Notice* (TPPN) #10/88. Other architectural resources in the study area would not be expected to be adversely effected by the proposed project as they are at a greater distance from the development site.

TRAFFIC AND PARKING

CONSTRUCTION TRAFFIC PROJECTIONS

Average daily construction worker and truck activities by quarter were projected for the entire period of construction. These projections were further refined to account for worker modal splits and vehicle occupancy, and arrival and departure distribution.

Daily Workforce and Truck Deliveries

For a reasonable worst-case analysis of potential transportation-related impacts during construction, the daily workforce and truck trip projections in the peak quarters were used as the basis for estimating peak hour construction trips. Based on a schedule of commencing construction in mid-2010, the combined construction worker and truck traffic peak would occur at the end of the fourth quarter of 2012. The daily average numbers of construction workers and truck deliveries during this construction peak quarter were estimated at 1,145 workers and 67 truck deliveries per day, as shown in **Table 20-1**. These estimates of construction activities are further discussed below.

Under the same methodology, as shown in **Table 20-2**, the construction of the No Action development would peak during the first and second quarters of 2013, with a total of approximately 880 daily workers and 29 daily truck deliveries.

Construction Worker Modal Splits

Based on the survey conducted at the construction site of the New York Times Building (located at Eighth Avenue and West 42nd Street) in 2006 and the recently approved *53 West 53rd Street Final Environmental Impact Statement*, it is anticipated that construction workers' travel within or commute to midtown Manhattan would be primarily by public transportation (approximately 70 percent), with a smaller percentage by private auto (approximately 30 percent) and an average auto occupancy rate of 2.04.

Peak Hour Construction Worker Vehicle and Truck Trips

The construction schedule assumed that all site activities would take place during the typical construction shift of 7:00 AM to 3:30 PM. While construction truck trips would be made throughout the day (with more trips made during the early morning), and trucks would remain in the area for shorter durations, construction worker travel would typically take place during the hours before and after the work shift.

Table 20-3 summarizes construction worker vehicle and truck trips during the peak construction periods for the proposed project and the No Action development. The construction of the proposed project would result in maximum construction traffic in the fourth quarter of 2012, as 164 and 134 vehicle trips during the 6 to 7 AM and 3 to 4 PM peak hours, respectively. The construction of the No Action development would result in maximum construction traffic in the second quarter of 2013, as 114 and 102 vehicle trips during the 6 to 7 AM and 3 to 4 PM peak hours, respectively.

Comparing to the construction of the No Action development, the construction of the proposed project would result in a net increase of construction-generated traffic of 50 and 32 vehicle trips during the AM and PM peak hours, respectively. Distributed to various roadways and parking facilities near the project site, these incremental construction vehicle trips would not result in more than 50 vehicle-trips (the CEQR analysis threshold) at any intersection. Therefore, a detailed construction traffic analysis is not warranted and the proposed project is not expected to result in significant adverse construction traffic impacts.

Street Lane and Sidewalk Closures

There could be various curbside lane and/or sidewalk closures associated with the project's construction activities. 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 development site would also be closed to accommodate heavy loading areas for at least several months of the construction period. Flaggers are expected to be present during construction to manage the access and movements of trucks. Pedestrians would either walk on the opposite side of the street or in a sectioned-off portion of the street. Detailed Maintenance and Protection of Traffic (MPT) Plans approved by NYCDOT's Office of Construction Mitigation and Coordination (OCMC) would implement the appropriate protective measures for ensuring pedestrian safety surrounding the development site.

Table 20-3
Peak Construction Vehicle Trip Projections

Hour	Auto Trip			Truck Trip			Total Vehicle Trip		
	In	Out	Total	In	Out	Total	In	Out	Total
Proposed Project (Fourth Quarter of 2012)									
5 AM – 6 AM	0	0	0	0	0	0	0	0	0
6 AM - 7 AM	130	0	130	17	17	34	147	17	164
7 AM - 8 AM	32	0	32	7	7	14	39	7	46
8 AM - 9 AM	0	0	0	7	7	14	7	7	14
9 AM - 10 AM	0	0	0	7	7	14	7	7	14
10 AM - 11 AM	0	0	0	7	7	14	7	7	14
11- AM - Noon	0	0	0	7	7	14	7	7	14
Noon - 1 PM	0	0	0	7	7	14	7	7	14
1 PM - 2 PM	0	0	0	3	3	6	3	3	6
2 PM - 3 PM	0	16	16	3	3	6	3	19	22
3 PM - 4 PM	0	130	130	2	2	4	2	132	134
4 PM - 5 PM	0	16	16	0	0	0	0	16	16
5 PM - 6 PM	0	0	0	0	0	0	0	0	0
No Action Development (Second Quarter of 2013)									
5 AM – 6 AM	0	0	0	0	0	0	0	0	0
6 AM - 7 AM	100	0	100	7	7	14	107	7	114
7 AM - 8 AM	25	0	25	3	3	6	28	3	31
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	2	2	4	2	2	4
2 PM - 3 PM	0	13	13	1	1	2	1	14	15
3 PM - 4 PM	0	100	100	1	1	2	1	101	102
4 PM - 5 PM	0	12	12	0	0	0	0	12	12
5 PM - 6 PM	0	0	0	0	0	0	0	0	0
NET INCREMENT									
5 AM – 6 AM	0	0	0	0	0	0	0	0	0
6 AM - 7 AM	30	0	30	10	10	20	40	10	50
7 AM - 8 AM	7	0	7	4	4	8	11	4	15
8 AM - 9 AM	0	0	0	4	4	8	4	4	8
9 AM - 10 AM	0	0	0	4	4	8	4	4	8
10 AM - 11 AM	0	0	0	4	4	8	4	4	8
11- AM - Noon	0	0	0	4	4	8	4	4	8
Noon - 1 PM	0	0	0	4	4	8	4	4	8
1 PM - 2 PM	0	0	0	1	1	2	1	1	2
2 PM - 3 PM	0	3	3	2	2	4	2	5	7
3 PM - 4 PM	0	30	30	1	1	2	1	31	32
4 PM - 5 PM	0	4	4	0	0	0	0	4	4
5 PM - 6 PM	0	0	0	0	0	0	0	0	0

Notes:
1. Construction auto trips for the proposed project were based on 1,145 daily workers with a 28.9-percent auto split and an average auto occupancy rate of 2.04.
2. Construction truck trips for the proposed project were based on 67 daily trucks with 25% of daily deliveries occurring in the early morning hour.
3. Construction auto trips for the No Action development were based on 880 daily workers with a 28.9-percent auto split and an average auto occupancy rate of 2.04.
4. Construction truck trips for the No Action development were based on 29 daily trucks with 25% of daily deliveries occurring in the early morning hours.

PARKING

The construction activities would generate a maximum daily parking demand of approximately 140 spaces during the peak construction periods in the third quarter of 2013. However, as discussed in Chapter 16, "Traffic and Parking," within a quarter mile radius of the project site, there is an estimated off-street parking capacity of nearly 7,050 spaces in the 2014 No Action

Condition. During the peak hour of construction arrivals, about 70 percent of the off-street parking spaces are expected to be utilized, leaving more than 1,900 available parking spaces. During the mid-day peak hour, about 93 percent of these spaces are expected to be utilized, leaving more than 470 available parking spaces, which are more than sufficient to accommodate the construction worker generated parking demand for the proposed project. Therefore, the proposed project is not expected to result in significant adverse construction parking impacts

TRANSIT AND PEDESTRIANS

TRANSIT

As discussed above, 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 development site via transit. During the peak construction period of the proposed project, up to approximately 1,145 workers could be at the development site on a given day. This would result in approximately 640 construction-related transit trips during the 6 to 7 AM and 3 to 4 PM construction peak hours, respectively. Similarly, during the peak construction period of the No Action development, up to approximately 880 workers could be at the development site on a given day. This would result in approximately 490 construction-related transit trips during the 6 to 7 AM and 3 to 4 PM construction peak hours, respectively.

Comparing to the construction of the No Action development, the construction of the proposed project would result in a net increase of approximately 150 construction-generated transit trips during the peak hours. Since these incremental construction-generated transit trips are below the 200 transit-trip CEQR analysis threshold, a detailed construction transit analysis is not warranted and the proposed project is not expected to result in significant adverse construction transit impacts.

As mentioned above, construction activities associated with the subway improvements may result in temporary closures to subway stairways or station elements during off-peak hours, which would not affect peak hour operations. In some instances, selected station elements may need to be closed and segregated from the public for safety reasons for relatively short durations. Adequate circulation and access to transit service would be maintained through coordination with NYCDOT and NYCT.

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 development site is also not warranted. Construction activities of the proposed project during peak construction periods in the fourth quarter of 2012 would yield up to approximately 920 pedestrian trips during the 6 to 7 AM and 3 to 4 PM construction peak hours. Construction activities of the No Action development during peak construction periods in the second quarter of 2013 would generate up to approximately 700 pedestrian trips during the 6 to 7 AM and 3 to 4 PM construction peak hours. Similarly, since these incremental construction-generated pedestrian trips are below the 200 pedestrian-trip CEQR analysis threshold, a detailed construction pedestrian analysis is not warranted and the proposed project is not expected to result in significant adverse construction pedestrian impacts.

During construction, where temporary sidewalk closures are required (possibly on the east sidewalk of Seventh Avenue between West 32nd and 33rd Streets, and the north sidewalk of West 32nd Street and the south sidewalk of West 33rd Street between Sixth and Seventh Avenues,) adequate protection or

temporary sidewalks and appropriate signage would be provided in accordance with NYCDOT requirements.

AIR QUALITY

Although they are temporary, construction projects can have a noticeable effect on surrounding communities. During construction of the proposed project, work activities and engine emissions from on-site equipment could have the potential to affect local air quality. Therefore, an assessment of the potential for air pollution from construction, based on construction activities and schedules, is discussed below along with methods that may be employed to minimize or eliminate the effects of construction activities on air quality.

This assessment was performed using a qualitative review of potential air emissions generated by construction activities. The assessment looked at the various construction tasks (e.g., excavation, foundation, superstructure, etc.) that would occur and the equipment types (excavators, dump trucks, etc.) that would likely be present in order to determine pollutants of concern. The relative significance of various emission sources is discussed, and measures to minimize potential effects on air quality are suggested for specific construction activities.

EFFECTS ON AIR QUALITY

The two main sources of air pollution at a construction site are diesel engine emissions and fugitive dust. In general, most construction engines are diesel-powered, and produce relatively high levels of nitrogen oxides (NO_X) and particulate matter (PM). Although diesel engines emit much lower levels of carbon monoxide (CO) than gasoline engines, the stationary nature of construction emissions and the large quantity of engines could also lead to increased CO concentrations. Sulfur oxides (SO_x) emitted from diesel engines would likely be negligible since ultra-low-sulfur diesel (ULSD) fuel is now easily available and can be used in almost any diesel engine. Therefore, the pollutants of concern for the construction period are NO_2, CO, fine particles with an aerodynamic diameter of less than or equal to 10 micrometers (PM_{10}), and fine particles with an aerodynamic diameter of less than or equal to 2.5 micrometers ($PM_{2.5}$).

Construction activities also generate various levels of fugitive dust. An active construction project might include a wide variety of tasks that could generate or re-suspend fugitive dust on-site. Some of the more common activities are: excavating; dumping and grading of earthen materials; loading or drop operations that transfer materials (e.g., debris, soil and fill) to and from dump trucks; demolition or deconstruction of existing structures or surfaces; and on-site travel across paved or unpaved roads/surfaces that cause particulate matter to become airborne.

The quantity of air pollutants emitted during the construction period would likely vary by location and over time. This is because equipment types and activities associated with each distinct construction task would be different. With regards to the effects on air quality, the excavation task is generally likely to emit the highest levels of air pollutants during the construction program. This would be especially true for particulate matter, since excavation activities have the greatest potential to generate fugitive dust, as described above. The intensity of excavation would be a controlling factor for the emission levels. High intensity excavation would require greater amounts of equipment on-site, which would increase emissions from diesel engines. Higher excavation rates would also produce more fugitive dust per unit time (i.e., increase daily emissions). The number of dump trucks needed for transporting excavated materials and delivery of fill would increase with excavation intensity. Any increase of vehicles traveling on-site would produce greater amounts of road dust.

Air emissions relating to tasks other than excavation would be most affected by the amount of heavy equipment being used on site and the engine size (i.e., horsepower) of each unit. The number of delivery trucks entering the site would also affect emission levels. Queuing of heavy vehicles such as concrete delivery trucks may be a concern during the foundations task. In some cases, elevated equipment during structural tasks would be of concern if nearby sensitive receptors were located at a similar height. However, in general these other tasks are less of a concern than the excavation periods.

Although the air emission sources described above would generate some level of air pollutants released to the atmosphere, it is not expected that the construction activities would increase those pollutants by amounts that would be considered significant in ambient air. In most cases, heavy equipment would operate intermittently over the course of a day, and over the course of the construction period. The active construction zone would also move from one area to the next as construction progresses throughout the development site. Finally, the effects of construction activities on air quality could be significantly curtailed by following the measures described below.

AIR QUALITY CONTROL MEASURES

In order to minimize potential construction-period effects on air quality, the following measures would be implemented as part of the construction program:

- Diesel Equipment Reduction. Elements of the construction plan would minimize the use of diesel engines and instead use electric engines to the extent practicable. Construction contracts would encourage the use of electric engines where practicable and ensure the distribution of power connections throughout the area as needed. Access to grid power would be most beneficial by eliminating the need for diesel-powered generators.
- Clean Fuel. ULSD would be required for diesel engines throughout the construction program.
- Idle Time Restrictions. The construction specifications would include the restriction of on-site vehicle idle time to three minutes for all vehicles that are not using the engine to operate a loading, unloading, or processing device (e.g., concrete mixing trucks).
- Planning. Large emission sources (e.g., concrete trucks and pumps, cranes, large generators) would be located as far as possible from residential buildings and public spaces, to the extent practicable.
- Best Available Tailpipe Reduction Technologies. Nonroad diesel engines with a power rating of 50 horsepower (hp) or greater and controlled truck fleets (i.e., truck fleets under long-term contract with the project sponsor, such as concrete mixing and pumping trucks) would utilize the best available tailpipe technology for reducing DPM emissions. Diesel particle filters (DPFs) have been identified as the tailpipe technology currently proven to have the highest reduction capability. Construction contracts would specify that all diesel nonroad engines rated at 50 hp or greater and all controlled-fleet trucks would utilize DPFs or other tailpipe reduction technology, either original equipment manufacturer (OEM) or retrofit technology with add-on controls, verified to reduce DPM emissions by at least 90

percent (when compared with the uncontrolled exhaust of an equivalent engine). Controls may include active DPFs,[1] if necessary.

- Utilization of Tier 2 or Newer Equipment. The construction specifications would encourage the use of Tier *2*[2] or later construction equipment for nonroad diesel engines greater than 50 hp. The more recent the "Tier," the cleaner the engine for all criteria pollutants, including fine PM. Therefore, restricting site access to newer equipment with lower engine-out PM emission values would significantly reduce adverse effects on air quality from diesel engines.

Construction also has the potential to affect air quality as a result of activities that generate fugitive dust. In order to minimize adverse effects on air quality, the following components would also be implemented as part of the construction program to the extent feasible:

- Planning. Fugitive dust control plans would be required as part of contract specifications.
- Watering. Truck routes and exposed excavation areas would be watered as needed.
- Cleaning. Truck exit areas would be established for washing off the wheels of all trucks that exit the construction sites, and include drive-off pads.
- Stabilization. In cases where truck routes would remain in the same place for an extended period, the routes would be stabilized, covered with gravel, or temporarily paved to avoid the re-suspension of road dust.
- Truck Covers. Dust covers for dump trucks would be required.

Based on the information presented above, construction activities associated with the proposed project would not result in significant adverse air quality impacts from on-site non-road construction sources. The components of the emissions control program described above may be adjusted between the DEIS and the FEIS based on refined analyses, as appropriate.

Impacts are not expected from on-road mobile sources since the number of project-generated trucks would not be significant at nearby intersections and mobile source contributions are usually very minor for these types of construction projects. Cumulative effects of on-site construction activities and mobile sources would also be insignificant since the highest emissions from on-site construction activities and traffic sources occur at different locations. Impacts are highest at points closest to the site for on-site construction activities, but highest near roadway intersections for mobile sources. In addition, the peak period for on-site construction activities is often different from the peak period for off-site mobile source

[1] There are two types of DPFs currently in use: passive and active. Most DPFs currently in use are the "passive" type, which means that the heat from the exhaust is used to regenerate (burn off the PM) in order to eliminate the buildup of PM in the filter. Some engines do not maintain temperatures high enough for passive regeneration. In such cases, "active" DPFs can be used, i.e., DPFs that are heated either by an electrical connection from the engine, by plugging in during periods of inactivity, or by removal of the filter for external regeneration.

[2] The first federal regulations for new nonroad diesel engines were adopted in 1994, and signed by EPA into regulation in a 1998 Final Rulemaking. The 1998 regulation introduces Tier 1 emissions standards for all equipment 50 hp and greater and phases in the increasingly stringent Tier 2 to Tier 3 standards for equipment manufactured in 2000 through 2008. In 2004, The EPA introduced Tier 4 emissions standards with a phased-in period of 2008 to 2015. The Tier 1 through 4 standards regulate the EPA criteria pollutants, including particulate matter (PM), hydrocarbons (HC), oxides of nitrogen (NO_x) and carbon monoxide (CO). Prior to 1998, emissions from nonroad diesel engines were unregulated. These engines are typically referred to as Tier 0.

emissions. Furthermore, it is likely that the highest results from different sources would occur under different meteorological conditions (e.g., different wind direction and speed) and would not actually occur simultaneously. Therefore, cumulative impacts from on-site construction and on road mobile sources would be insignificant. Additionally, as noted previously, the components of the emissions control program may be adjusted between the DEIS and FEIS based on refined analysis, as appropriate.

NOISE

INTRODUCTION

Impacts on community noise levels during construction of the proposed project can result from noise from construction equipment operation and from construction vehicles and delivery vehicles traveling to and from the site. Noise and vibration levels at a given location are dependent on the kind and number 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). Noise levels caused by construction activities would vary widely, depending on the phase of construction and the location of the construction relative to receptor locations. The most significant construction noise sources are expected to be impact equipment such as jackhammers, excavators with ram hoes, drill rigs, rock drills, impact wrenches, tower cranes and paving breakers, as well as the movements of trucks.

Noise from construction activities and some construction equipment is regulated by the New York City Noise Control Code and by EPA. The New York City Noise Control Code, as amended December 2005 and effective July 1, 2007, requires the adoption and implementation of a noise mitigation plan for each construction site, limits construction (absent special circumstances as described below) to weekdays between the hours of 7:00 AM and 6:00 PM, and sets noise limits for certain specific pieces of construction equipment. Construction activities occurring after hours (weekdays between 6:00 PM and 7:00 AM, and on weekends) may be authorized in the following circumstances: (1) emergency conditions; (2) public safety; (3) construction projects by or on behalf of City agencies; (4) construction activities with minimal noise impacts; and (5) where there is a claim of undue hardship resulting from unique site characteristics, unforeseen conditions, scheduling conflicts and/or financial considerations. EPA requirements mandate that certain classifications of construction equipment meet specified noise emissions standards.

CONSTRUCTION NOISE IMPACT CRITERIA

The *CEQR Technical Manual* states that significant noise impacts due to construction would occur "only at sensitive receptors that would be subjected to high construction noise levels for an extensive period of time." This has been interpreted to mean that such impacts would occur only at sensitive receptors where the activity with the potential to create high noise levels would occur for approximately two years or longer. In addition, the *CEQR Technical Manual* states that impact criteria for vehicular sources, using existing noise levels as the baseline, should be used for assessing construction impacts. See Chapter 19, "Noise," for an explanation of noise measurement and sound levels. The criteria are as follows:

If the existing noise levels are less than 60 decibels, A-weighted equivalent sound level for one hour (dBA $L_{eq(1)}$) and the analysis period is not a nighttime period, the threshold for a significant impact would be an increase of at least 5 dBA $L_{eq(1)}$. For the 5 dBA threshold to be valid, the

resulting proposed action condition noise level with the proposed action would have to be equal to or less than 65 dBA. If the existing noise level is equal to or greater than 62 dBA $L_{eq(1)}$, or if the analysis period is a nighttime period (defined in the CEQR criteria as being between 10:00 PM and 7:00 AM), the incremental significant impact threshold would be 3 dBA $L_{eq(1)}$. (If the existing noise level is 61 dBA $L_{eq(1)}$, the maximum incremental increase would be 4 dBA, since an increase higher than this would result in a noise level higher than the 65 dBA $L_{eq(1)}$ threshold.)

The impact criteria contained in the *CEQR Technical Manual* were used for assessing impacts from mobile and on-site construction activities.

NOISE ANALYSIS FUNDAMENTALS

Construction activities for the proposed project and subway improvements would be expected to result in increased noise levels as a result of: (1) the operation of construction equipment on-site; and (2) the movement of construction-related vehicles (i.e., worker trips, and material and equipment trips) on the surrounding roadways. The effect of each of these noise sources was evaluated. The results presented below show the effects of construction activities (i.e., noise due to both on-site construction equipment and construction-related vehicles operation) and the total cumulative impacts due to operational effects (caused by project-generated vehicular trips) and construction effects (as construction proceeds on uncompleted components of the project).

Noise from the operation of construction equipment on-site at a specific receptor location near a construction site is calculated by computing the sum of the noise produced by all pieces of equipment operating at the construction site. For each piece of equipment, the noise level at a receptor site is a function of:

- The noise emission level of the equipment;
- A usage factor, which accounts for the percentage of time the equipment is operating at full power;
- The distance between the piece of equipment and the receptor;
- Topography and ground effects; and
- Shielding.

Similarly, noise levels due to construction-related traffic are a function of:

- The noise emission levels of the type of vehicle (e.g., auto, light-duty truck, heavy-duty truck, bus, etc.)
- Vehicular speed;
- The distance between the roadway and the receptor;
- Topography and ground effects; and
- Shielding.

SENSITIVE RECEPTOR SITES

There are two sensitive receptor sites immediately adjacent to the development site. Both are located on West 32nd Street between Sixth and Seventh Avenues. One is a residential building (The Epic, a 59-story building with approximately 458 residential units) and the other is a church (the St. Francis Roman Catholic Church). Both locations have double-glazed windows and alternative ventilation (i.e., air conditioning).

NOISE REDUCTION MEASURES

The applicant has committed to taking a proactive approach during construction, which employs a wide variety of measures that exceed standard construction practices to minimize construction noise and reduce potential noise impacts. These measures will be described in the noise mitigation plan required as part of the New York City Noise Control Code. These measures include a variety of source and path controls.

In terms of source controls (i.e., reducing noise levels at the source or during most sensitive time periods), the following measures for construction, which go beyond typical construction techniques, would be implemented:

- Equipment that meets the sound level standards specified in Subchapter 5 of the New York City Noise Control Code would be utilized from the start of construction activities, along with a wide range of equipment, including construction trucks, which produce lower noise levels than typical construction. **Table 20-4** shows the noise levels for typical construction equipment and the mandated noise levels for the equipment that would be used for construction of the proposed project.
- Where feasible and practicable, construction procedures that reduce noise levels and equipment (such as concrete trucks, delivery trucks, and trailers) that is quieter than that required by the New York City Noise Control Code would be used.
- As early in the construction period as practicable, diesel or gas-powered equipment would be replaced with electrical-powered equipment, such as welders, water pumps, bench saws, and table saws (i.e., early electrification).
- Where practicable and feasible, construction sites would be configured to minimize back-up alarm noise. In addition, all trucks would not be allowed to idle more than three minutes at the construction site based upon New York City Local Law.
- Limit equipment on-site (only necessary equipment on-site).
- Contractors and subcontractors would be required to properly maintain their equipment and have quality mufflers installed.

In terms of path controls (e.g., placement of equipment, implementation of barriers or enclosures between equipment and sensitive receptors), the following measures for construction, which go beyond typical construction techniques, would be implemented to the extent feasible:

- Noisy equipment, such as cranes, concrete pumps, concrete trucks, and delivery trucks, would be located away from and shielded from sensitive receptor locations. For example, during some of the early phases of work, delivery and dump trucks, as well as many construction equipment operations, would be located and take place below grade to take advantage of shielding benefits. Once building foundations are completed, delivery trucks would operate behind noise barriers, where possible.
- Noise barriers would be utilized to provide shielding (e.g., the construction sites would have a minimum 8-foot barrier, with a maximum 15-foot barrier on East 32nd Street adjacent to the residential and church locations, and, where possible, truck deliveries would take place behind these barriers once building foundations are completed).

Table 20-4
Typical Construction Equipment Noise Emission Levels (dBA)

Equipment List	NYCEP & FTA Typical Noise Level at 50 feet[1]	Mandated Noise Level at 50 feet[2]	Noise Level with Path Controls at 50 feet[3]
Asphalt Paver	85	85	75
Asphalt Roller	85	74	
Backhoe/Loader	80	77	
Compressors	80	67	
Concrete Pump	82	79	
Concrete Trucks	85	79	
Cranes	85	77	
Cranes (Tower Cranes)	85	85	75
Delivery Trucks	84	79	
Drill Rigs	84	84	74
Dump Trucks	84	79	
Excavator	85	77	
Excavator with Ram Hoe	90	90	80
Fuel Truck	84	79	
Generators	82	68	
Hoist	85	80	70
Impact Wrenches	85	85	75
Jackhammer	85	82	72
Mortar Mixer	80	63	
Power Trowel	85	85	75
Powder Actuated Device	85	85	75
Pump (Spray On Fire Proof)	82	76	
Pump (Water)	77	76	
Rebar Bender	80	80	
Rivet Buster	85	85	75
Rock Drill	85	85	75
Saw (Chain Saw)	85	75	
Saw (Concrete Saw)	90	85	75
Saw (Masonry Bench)	85	76	
Saw (Circular & Cut off)	76	76	
Saw (Table Saw)	76	76	
Sledge Hammers	85	85	75
Street Cleaner	80	80	
Tractor Trailer	84	79	
Vibratory Plate Compactor	80	80	
Welding Machines	73	73	

Notes:
[1] Sources: Citywide Construction Noise Mitigation, Chapter 28, Department of Environmental Protection of New York City, 2007. Transit Noise and Vibration Impact Assessment, FTA, May 2006.
[2] Mandated noise levels are achieved by using quieter equipment, better engine mufflers, and refinements in fan design and improved hydraulic systems.
[3] Path controls include portable noise barriers, enclosures, acoustical panels, and curtains, whichever feasible and practical.

- Path noise control measures (i.e., portable noise barriers, panels, enclosures, and acoustical tents, where feasible) would be used for certain dominant noise equipment, i.e., asphalt pavers, tower cranes, drill rigs, excavators with ram hoe, hoists, impact wrenches, jackhammers, power trowels, powder actuated devices, rivet busters, rock drills, concrete saws, and sledge hammers. The details to construct portable noise barriers, enclosures, tents, etc. would be based upon the instructions of NYCDEP Citywide Construction Noise Mitigation.

CONSTRUCTION NOISE RESULTS

The noise reduction measures described above would be expected to substantially reduce noise levels. Absent these measures and like in the No Action condition, construction activities would be expected to produce $L_{eq(1)}$ noise levels in the high-70 to mid-80 dBA range at the two sensitive noise receptor locations adjacent to the development site on West 32nd Street between

Sixth and Seventh Avenues (The Epic and the St. Francis Roman Catholic Church). With these measures, noise from construction activities would be approximately 10 dBA less, and construction activities would be expected to produce $L_{eq(1)}$ noise levels in the high- 60 to mid-70 dBA range at the two sensitive noise receptor locations. Existing $L_{eq(1)}$ noise levels during the hours of construction on West 32nd Street range from approximately 70 to 73 dBA. Consequently, it is likely that during the construction period, construction activities would result in increased noise levels at these two receptor locations that would exceed CEQR impact criteria (i.e., increase by more than 3 dBA comparing the noise levels due to construction activities with existing noise level) and these exceedances of CEQR impact criteria may occur for two or more consecutive years, resulting in significant noise impacts at these two locations.

Both the Epic and the St. Francis Roman Catholic Church have double-glazed windows and central air conditioning (i.e., alternative ventilation). Consequently, at both locations, even during warm weather conditions, interior noise levels would be approximately 30-35 dBA less than exterior noise levels. The double-glazed windows and alternative ventilation at these structures would provide a significant amount of sound attenuation, and would result in interior noise levels during most of the time that are below 45 dBA L_{10} (the CEQR acceptable interior noise level criteria). However, even though these structures have double-glazed windows and alternative ventilation, during some limited time periods, construction activities may result in interior noise levels that would be above the 45 dBA L_{10} noise level recommended by CEQR for these uses and result in significant adverse noise impacts.

Between the DEIS and the FEIS, a detailed analysis will be performed to (1) quantify the magnitude, time of occurrence, and duration of the exceedances of the CEQR impact criteria, and (2) determine the practicability and feasibility of implementing any additional control measures to reduce or eliminate the significant adverse construction noise impacts cited above. Absent the implementation of measures that would produce lower interior noise levels (beyond those identified above), construction of the proposed project would have unmitigated significant noise impacts at the locations specified above for limited periods of time.

VIBRATION

INTRODUCTION

Construction activities have the potential to result in vibration levels that may in turn result in structural or architectural damage, and/or annoyance or interference with vibration-sensitive activities. In general, vibratory levels at a receiver are a function of the source strength (which in turn is dependent upon the construction equipment and methods utilized), the distance between the equipment and the receiver, the characteristics of the transmitting medium, and the receiver building construction. Construction equipment operation causes ground vibrations which spread through the ground and decrease in strength with distance. Vehicular traffic, even in locations close to major roadways, typically does not result in perceptible vibration levels unless there are discontinuities in the roadway surface. With the exception of the case of fragile and possibly historically significant structures or buildings, generally construction activities do not reach the levels that can cause architectural or structural damage, but can achieve levels that may be perceptible and annoying in buildings very close to a construction site. An assessment has been prepared to access quantitatively potential vibration impacts of construction activities on structures and residences near the development site.

CONSTRUCTION VIBRATION CRITERIA

For purposes of assessing potential structural or architectural damage, the determination of a significant impact was based on the vibration impact criterion used by LPC of a peak particle velocity (PPV) of 0.50 inches/second. For non-fragile buildings, vibration levels below 0.60 inches/second would not be expected to result in any structural or architectural damage.

For purposes of evaluating potential annoyance or interference with vibration-sensitive activities, vibration levels greater than 65 vibration decibels (VdB) would have the potential to result in significant adverse impacts if they were to occur for a prolonged period of time.

Analysis Methodology

For purposes of assessing potential structural or architectural damage, the following formula was used:

$$PPVequip = PPVref \times (25/D)1.5$$

where: PPVequip is the peak particle velocity in in/sec of the equipment at the receiver location;

PPVref is the reference vibration level in in/sec at 25 feet; and

D is the distance from the equipment to the received location in feet.

For purposes of assessing potential annoyance or interference with vibration sensitive activities, the following formula was used:

$$Lv(D) = Lv(ref) - 30\log(D/25)$$

where: Lv(D) is the vibration level in VdB of the equipment at the receiver location;

Lv(ref) is the reference vibration level in VdB at 25 feet; and

D is the distance from the equipment to the receiver location in feet.

CONSTRUCTION VIBRATION ANALYSIS RESULTS

The buildings and structures of most concern with regard to the potential for structural or architectural damage due to vibration are those immediately adjacent to or across the street from the proposed development site. With the exception of the Manhattan Mall, which is immediately adjacent to the development site, vibration levels at nearby buildings and structures would be well below the 0.50 inches/second PPV limit for structural damage. At the Manhattan Mall, special measures would be utilized and a monitoring program would be implemented to ensure that this limit is not exceeded, and that no architectural or structural damage would occur. At all other locations, the distance between construction equipment and receiving buildings or structures is large enough to avoid vibratory levels that would result in architectural or structural damage.

In terms of potential vibration levels that would be perceptible and annoying, the pieces of equipment that would have the most potential for producing levels which exceed the 65 VdB limit are the clam shell drop and vibratory roller. A clam shell drop would produce perceptible vibration levels (i.e., vibration levels exceeding 65 VdB) at receptor locations within a distance of approximately 232 feet. However, the operation would only occur for limited periods of time at a particular location and therefore would not result in any significant adverse impacts. (No

pile driving or blasting are expected as part of the proposed project's construction.) In no case are significant adverse impacts from vibrations expected to occur.

CUMULATIVE EFFECTS

The Hotel Pennsylvania is located partially over active railroad tunnels. These Amtrak-controlled railroad tunnels traverse the development site adjacent to the third basement level. Penetration into the railroad tunnels is prohibited by an existing easement agreement, and it is not anticipated that the structural support systems for the proposed project will involve penetration into the tunnel structure. However, construction activities would need to be closely coordinated with the operating railroads to ensure that there is no disruption to service.

As stated above, there are a number of large-scale transportation projects that are anticipated to be under construction in the vicinity of the development site in the future without the proposed project—Moynihan Station, ARC, and possibly Metro-North's Hudson Line service at Penn Station project. While these projects are all expected to be completed after the proposed project's estimated 2014 completion year, some construction phases for these projects are anticipated to occur at the same time the proposed project would be constructed. As stated above, it is anticipated that these three projects would include, where necessary, the coordination of construction schedules and activities for these projects as they would affect overall access to, and circulation within, the Penn Station Complex.

It is anticipated that, based on the location of these transportation projects, the potential for cumulative effects of construction of the proposed project and these projects would be minimal, as follows:

- Construction for the Moynihan project will mostly occur below-grade and within the Farley Complex from Eighth to Ninth Avenues between West 31st and West 33rd Streets, a full block west of the development site, with the exception of an associated development transfer site to be constructed on the western portion of the One Penn Plaza block, between 33rd and 34th Streets at Eighth Avenue, a full block west of the 15 Penn Plaza development site.
- Localized construction activities for the ARC project will occur along West 34th Street between Eighth and Sixth Avenues, a minimum of one block north of the 15 Penn development site. These activities would predominantly be limited to the construction of new station entrances at Sixth, Seventh and Eighth Avenues, and would include construction of direct connections from the new 34th Street ARC station into subway concourses at Sixth Avenue at Herald Square, and at Seventh and Eighth Avenues, as well as connections to PATH service at Herald Square. Most of the ARC construction would occur below grade, with the tunnel spoils and much of the staging for ARC project construction efforts in Manhattan to be located at Twelfth Avenue and West 28th Street, well west of the 15 Penn Plaza development site. The ARC project would also include two additional minor spoils removal fan plant and access shaft sites that would be located at 33rd Street between Sixth and Seventh Avenues and 35th Street between Seventh and Eighth Avenues, both north of the 15 Penn Plaza development site.
- It is uncertain when construction for the Metro-North Access to Penn Station would occur, however Metro-North is expected to prepare an Environmental Assessment for the project, which is expected to be complete in 2011. There are existing track connections from Metro-North's New Haven and Hudson Lines to Penn Station on the West Side of Manhattan which could be used to provide access for Metro-North trains into Penn Station. Connections of Metro-North's Harlem Line may require track reconstruction. However, at Penn Station,

these construction activities would be below grade and any necessary above ground work would not be anywhere near the 15 Penn Plaza development site.

While it is anticipated that the potential for cumulative effects of construction of the proposed project and construction of these area projects would be minimal, construction of the proposed project would be coordinated with these other efforts to the extent practicable to minimize the potential for adverse construction impacts from these concurrent efforts. ✷