

A. INTRODUCTION

This chapter assesses the potential impacts of the construction expected under the proposed actions and reasonable worst case development scenario (RWCDS) as presented in Chapter 1, “Project Description.” As described in the City’s *CEQR Technical Manual*, construction impacts, although temporary, can create disruptive and noticeable effects in an area. Construction impacts are usually examined with respect to traffic conditions, archaeological resources, historic resources, community noise patterns, and air quality conditions. This chapter has been updated since the Draft Environmental Impact Statement to reflect changes to the Reasonable Worst-Case Development Scenario as described in Chapter 1, “Project Description.”

Elements of the proposed actions include zoning map and text amendments, street demapping, and an urban renewal area designation. The proposed actions would result in the construction of new residential buildings, commercial offices, retail space, industrial space, and community facility uses. As described in the other chapters of this EIS, the projected and potential developments are expected to be a mix of low, medium, and high density, with building heights ranging from up to 250 feet in the Downtown Jamaica Central Business District (CBD) area.

The projected development sites under the RWCDS are assumed to be completed in 2015. This assumes the development of 186 projected development sites. In addition, there are 420 potential development sites that are considered less likely to be developed over the analysis period, but which are considered potential sites for future development.

The assessment concludes that, for the most part, construction impacts of the development associated with the proposed actions occur at various locations throughout the study area, with the exception of the areas to the east proposed for downzoning. Higher density development would occur in the downtown area and would be temporary and similar to those experienced elsewhere in the city. Significant adverse impacts specific to conditions in the study area would relate mainly to the potential physical effects to historic resources.

Based on the *CEQR Technical Manual* and the final scope of work, this analysis focuses on the following technical areas:

- Historic Resources (both archaeological and architectural);
- Hazardous Materials;
- Air Quality (fugitive and mobile source emissions); and
- Noise and Vibration.

Because there are no site-specific plans for the projected or potential developments and development would occur on a variety of sites throughout the study area through the year 2015, this assessment would be largely qualitative, focusing on technical areas where construction activities may pose problems.

This analysis examines site-associated impacts for both projected and potential development sites. Other impacts, such as traffic and parking, are examined more generally based on the RWCDs build out. In addition, the analysis assumes full development at each site, not the incremental increase between the No Action RWCDs and the Proposed Action RWCDs. This analysis is therefore conservative, since much of this development could occur as-of-right, with the exception of the sites subject to the proposed urban renewal area and the sites proposed for disposition. The incremental additional development would technically add only to the construction duration at the other sites affected by the proposed actions. (See Tables 1-4 and 1-5 in Chapter 1, “Project Description,” which identify the incremental changes in development at each site in the study area.)

B. CONSTRUCTION PROGRAM UNDER NO BUILD AND BUILD CONDITIONS

THE FUTURE WITHOUT THE PROPOSED ACTIONS

The RWCDs assumes that, absent the actions proposed under the Jamaica Plan, development would occur on a number of sites that are underbuilt as per current zoning. This includes approximately 1,815 residential units, 1,663,485 square feet of commercial space, 214,344 square feet of community facility space, and 500,646 square feet of industrial space.

Additionally, as described in Chapter 2, “Land Use, Zoning, and Public Policy,” there are several major development projects that are planned in the proposed action area and the surrounding study area. These include a proposal by a private developer to create approximately 360 residential units, 42,800 square feet of retail space, 19,400 square feet of community facility space, and parking for 190 cars on the 2-acre former Queens County Courthouse site at 89th Avenue and Parsons Boulevard in the Jamaica Center CBD. Also in the Jamaica Center CBD, a 225,590 square foot Home Depot building is under construction on the northern side of 93rd Avenue between Merrick Boulevard and 168th Street. The Greater Jamaica Development Corporation (GJDC) also proposes to undertake several transportation and streetscape improvements in the Jamaica Center area with the goals of increasing pedestrian access and safety, improving traffic flow, accommodating increased bus volumes, creating public open space and spurring transit-oriented development.

THE FUTURE WITH THE PROPOSED ACTIONS

DCP has identified 186 projected development sites that are considered most likely to be developed in the future with the proposed actions (see Chapter 1, “Project Description,” for a detailed description of this RWCDs). As described in Chapter 1, it is anticipated that new development occurring as a result of the proposed actions would consist of 5,380 residential units, 4,771,199 square feet of commercial space (including approximately 2.1 million square feet of retail, 1.8 million square feet of office, 200,000 square feet of hotel use, and 400,000 square feet of public parking), 459,524 square feet of community facility space, and 120,894 square feet of industrial space. The projected incremental change over the No Action scenario is 3,365 residential units, 3,107,714 square feet of commercial space, 245,180 square feet of community facility space, and a reduction of 379,752 square feet in industrial space.

Tables 20-1 and 20-2 provide a summary of the amount and types of development projected in the future with the proposed actions by subarea. Table 20-1 outlines the total projected development that would occur in the future with the proposed actions, while Table 20-2 outlines the incremental increase in projected development in the future with the proposed actions compared to the future without the proposed actions.

**Table 20-1
Summary of the Development on Projected Sites
in the Future With the Proposed Actions (by Subarea)**

| Subarea ¹ | Proposed Zoning District | Commercial (sf) | Industrial (sf) | Community Facilities (sf) | Dwelling Units | Number of Projected Sites | Projected Building Height | Residential units/commercial sf per site | Type of Construction |
|------------------------|----------------------------|------------------|-----------------|---------------------------|----------------|---------------------------|---------------------------|---|---|
| Urban Renewal Area | C6-3 or M1-4 | 2,113,904 | - | - | 206 | 4 | 250 ft. | Up to 206 DU; up to 1.2 million sf commercial | New office and residential towers |
| <u>Air Train (AT2)</u> | <u>C6-3</u> | <u>276,400</u> | <u>=</u> | <u>=</u> | <u>180</u> | <u>1</u> | <u>250 ft</u> | <u>180 DU; 276,400 sf commercial</u> | <u>New residential/commercial tower</u> |
| Jamaica Center (JC1) | C6-3 | 251,960 | - | 44,988 | 682 | 11 | 185 ft. | Up to 159 DU; up to 46,000 sf commercial | New office and residential towers; Conversion of commercial buildings for residential use |
| Jamaica Center (JC2) | C6-2 | 183,490 | - | 2,000 | 250 | 3 | 130 ft. | Up to 135 DU; up to 133,000 sf commercial | New mid-rise office and residential buildings; Conversion of commercial buildings for residential use |
| Jamaica Center (JC3) | C4-5X | <u>783,055</u> | - | 55,952 | <u>671</u> | <u>12</u> | 125 ft. | Up to 147 DU; up to 360,000 sf commercial | New mid-rise office and residential buildings; Conversion of commercial buildings |
| Liberty Center (LC) | M1-4 | <u>273,248</u> | - | 23,800 | - | <u>11</u> | 60 ft. | Up to 102,000 sf commercial | New industrial and commercial buildings |
| Sutphin Corridor (SC) | C4-4A | 13,788 | - | - | 51 | 3 | 80 ft. | Up to 26 DU | New residential buildings with ground floor commercial |
| A | R5 or C1-4/R5 | 13,430 | - | - | 9 | 4 | 40 ft. | Up to 6 DU | New apartments with ground floor commercial |
| B | R5 | - | - | - | <u>22</u> | <u>1</u> | 40 ft. | 22 DU | Low-rise apartment buildings |
| D | R7A, C1-2/R7A, or C2-4/R7A | 21,860 | - | - | <u>677</u> | <u>21</u> | 80 ft. | Up to 72 DU | Mid-rise apartment buildings |
| E | C2-4/R6A | 30,357 | - | - | 77 | 3 | 70 ft. | Up to 33 DU | Mid-rise apartment buildings |
| F | R4-1 | - | - | - | 36 | 9 | 35 ft. | Up to 6 DU | Detached and semi-detached; single- and two-family |
| J | R5 | - | - | - | 55 | 5 | 40 ft. | Up to 34 DU | Low-rise apartment buildings |
| O | C2-3/R6A or C2-4/R6A | 122,277 | - | 44,007 | 286 | 14 | 70 ft. | Up to 69 DU | Mid-rise apartment buildings |
| Q | R5D or C1-4/R5D | <u>107,340</u> | - | 24,000 | 170 | 31 | 40 ft. | Up to 11 DU | Single and two-family houses |
| R | C1-3/R6A or C2-4/R6A | 115,276 | - | 36,900 | 293 | 16 | 70 ft. | Up to 70 DU | Mid-rise apartment buildings |
| S | C2-4/R6A | 53,100 | - | 81,000 | 135 | 6 | 70 ft. | Up to 65 DU | Mid-rise apartment buildings |
| T | C4-3A | 52,570 | - | 30,923 | 102 | 3 | 70 ft. | Up to 63 DU | Mid-rise apartment buildings |
| U | C2-3/R7X or C2-4/R7X | 226,611 | - | 104,104 | 1,064 | 17 | 125 ft. | Up to 129 DU | Mid-rise office and residential buildings |
| V | C2-4/R7A | 102,309 | - | 11,850 | 404 | 8 | 80 ft. | Up to 106 DU | Mid-rise apartment buildings |
| X | M1-2 | 27,224 | 108,894 | - | - | 2 | 60 ft. | Up to 75,000 sf industrial and 19,000 sf commercial | New industrial and commercial buildings |
| Y | M1-4 | 3,000 | 12,000 | - | - | 1 | 60 ft. | 12,000 sf industrial and 3,000 sf commercial | New industrial and commercial buildings |
| Total | | 4,771,199 | 120,894 | 459,524 | 5,380 | 186 | N/A | | |

Notes:

¹ See Figure 1-4 in Chapter 1, "Project Description," for the locations of the subareas.

DU = Residential dwelling units

Source: NYC Dept. of City Planning, May 2007.

Table 20-2
Summary of the Net Incremental Development on
Projected Sites in the Future With the Proposed Actions (Build)

| Subarea ¹ | Proposed Zoning District | Commercial (sf) | Industrial (sf) | Community Facilities (sf) | Dwelling Units | Number of Projected Sites | Projected Building Height | Type of Construction |
|------------------------|---------------------------|------------------|------------------|---------------------------|----------------|---------------------------|---------------------------|---|
| Urban Renewal Area | C6-3 or M1-4 | 2,072,786 | (236,498) | - | 206 | 4 | 250 ft. | New office and residential towers |
| <u>Air Train (AT2)</u> | <u>C6-3</u> | <u>270,380</u> | <u>(10,000)</u> | = | <u>175</u> | <u>1</u> | <u>250 ft</u> | <u>New residential/ commercial tower</u> |
| Jamaica Center (JC1) | C6-3 | (242,249) | - | 23,921 | 580 | 11 | 185 ft. | New office and residential towers; Conversion of commercial buildings |
| Jamaica Center (JC2) | C6-2 | <u>58,895</u> | (224,420) | 2,000 | 188 | 3 | 130 ft. | New mid-rise office and residential buildings; Conversion of commercial buildings |
| Jamaica Center (JC3) | C4-5X | 491,171 | - | (8,773) | <u>85</u> | <u>12</u> | 125 ft. | New mid-rise office and residential buildings; Conversion of commercial buildings |
| Liberty Center (LC) | M1-4 | <u>224,856</u> | (90,953) | 23,800 | (13) | <u>11</u> | 60 ft. | New industrial and commercial buildings |
| Sutphin Corridor (SC) | C4-4A | - | - | - | 12 | 3 | 80 ft. | New residential buildings with ground floor commercial |
| A | R5 or C1-4/R5 | 13,430 | - | - | (7) | 4 | 40 ft. | New apartments with ground floor commercial |
| B | R5 | (7,000) | (10,500) | - | 22 | 1 | 40 ft. | New apartment buildings |
| D | R7A, C1-2/R7A or C2-4/R7A | 16,626 | - | - | <u>257</u> | <u>21</u> | 80 ft. | Mid-rise apartment buildings |
| E | C2-4/R6A | 10,536 | (13,120) | - | 74 | 3 | 70 ft. | Mid-rise apartment buildings |
| F | R4-1 | - | - | - | 21 | 9 | 35 ft. | Detached and semi-detached; single- and two-family |
| J | R5 | (10,911) | (25,365) | - | 51 | 5 | 40 ft. | Low-rise apartment buildings |
| O | C2-3/R6A or C2-4/R6A | 118,477 | (38,895) | 44,007 | 210 | 14 | 70 ft. | Mid-rise apartment buildings |
| Q | R5D or C1-4/R5D | <u>42,987</u> | - | 24,000 | <u>113</u> | 31 | 40 ft. | Single and two-family houses |
| R | C1-3/R6A or C2-4/R6A | 20,263 | - | 30,750 | 267 | 16 | 70 ft. | Mid-rise apartment buildings |
| S | C2-4/R6A | (6,000) | (30,000) | 81,000 | 109 | 6 | 70 ft. | Mid-rise apartment buildings |
| T | C4-3A | 1,700 | - | 1,000 | 101 | 3 | 70 ft. | Mid-rise apartment buildings |
| U | C2-3/R7X or C2-4/R7X | 20,849 | - | 11,625 | 750 | 17 | 125 ft. | Mid-rise office and residential buildings |
| V | C2-4/R7A | 10,168 | - | 11,850 | 363 | 8 | 80 ft. | Mid-rise apartment buildings |
| X | M1-2 | - | 68,059 | - | - | 2 | 60 ft. | New industrial and commercial buildings |
| Y | M1-4 | 750 | 7,520 | - | - | 1 | 60 ft. | New industrial and commercial buildings |
| Total | | 3,107,714 | (379,752) | 245,180 | 3,565 | 186 | N/A | |

Notes:

¹ See Figure 1-4 in Chapter 1, "Project Description," for the locations of the subareas.

Source: NYC Dept. of City Planning, May 2007.

As shown in the tables, the types of construction that are expected to occur as a result of the proposed actions can be broken down generally into high-rise, mid-rise, and low-rise as follows:

- High-rise construction would include office and residential towers up to 250 feet tall constructed in the Jamaica Center CBD.
- Mid-rise construction would include commercial and residential buildings ranging in height from 60 to 125 feet in the CBD and along corridors such as Hillside Avenue, Jamaica Avenue, and Merrick Boulevard.
- Low-rise residential buildings, including apartment buildings and one- and two-family houses, would be developed as infill housing in low-density areas such as Hollis and along Guy R. Brewer Boulevard.

C. CONSTRUCTION SCHEDULE AND ACTIVITIES

CONSTRUCTION PROGRAM AND MANAGEMENT

The proposed actions are not intended to facilitate specific projects proposed by developers. As such, the RWCDs presented in Chapter 1, “Project Description,” does not describe which of the sites would be developed first or assume a particular sequence of development. However, it is assumed that the construction of all projected development sites would be completed by 2015. While market considerations will determine the development demand over time, it is reasonable to assume that a number of the projected development sites may be under construction simultaneously.

Construction activities typically occur Monday through Friday, although the delivery and installation of certain critical equipment could occur on weekend days. Construction staging would most likely occur on the projected and potential development sites and may, in some cases, extend onto portions of the adjoining sidewalks, parking, and travel lanes of the public streets adjacent to the construction sites. Any sidewalk or street closures require the approval of the New York City Department of Transportation’s Office of Construction Management and Coordination (NYCDOT-OCMC), the entity that ensures critical arteries are not interrupted—especially in peak travel periods, that traffic will continue to flow during periods of construction, and that pedestrian movements are disrupted to the least extent possible.

In accordance with local law, developers and their contractors would be required to plan and implement traffic and pedestrian management, noise, and dust control measures during construction. This would include any NYCDOT-OCMC requirements for street crossing and entrance barriers, protective scaffolding, and strict compliance with all applicable construction safety measures of the City of New York.

Provided below is a general outline of typical scheduling for the projected development sites. It should be noted however that the duration and extent of new construction activities would vary based on which site is being developed and the size of that development. A typical site construction schedule with an overall duration of two years is described below.

CONSTRUCTION SEQUENCING

Provided below is a typical construction program for a large building (the high-rise element) of the RWCDs. Mid- and low-rise elements would typically be of less duration and intensity and would involve less street instruction and different types of equipment. For example, low-rise buildings could involve more concrete and fewer or no steel frame construction buildings.

Likewise, the duration of excavation and other elements of a typical high-rise building, although the sequence of construction phases may be quite similar.

If a site requires mitigation for hazardous materials, that work would be performed prior to demolition or construction. Certain projects may undertake any remediation as part of the proposed excavation.

SITE CLEARANCE, FOUNDATIONS, AND BELOW-GRADE CONSTRUCTION

This stage of construction, which typically lasts approximately 4 months, would entail site clearance; digging, pile-driving, pile capping, and excavation for the foundation; dewatering (to the extent required); and reinforcing and pouring of the foundation. Typical equipment used for these activities includes excavators, backhoes, tractors, pile-drivers, hammers, and cranes. Trucks would arrive at the site with pre-mixed concrete and other building materials, and would remove any excavated material and construction debris.

Foundation work would include the use of bobcats, rockbreakers, loaders, pumps, motorized concrete buggies, concrete pumps, jack hammers, pneumatic compressors, and a variety of small, mostly hand-held tools, as well as dump trucks and concrete trucks.

SUPERSTRUCTURE

For larger buildings, this stage of construction typically lasts approximately 10 months and would overlap to some degree with the foundation phase. Construction of the exterior enclosure, or “shell,” of the building would include construction of the building’s frame (installation of beams and columns), floor decks, facade (exterior walls and cladding), and roof construction. These activities typically require the use of tower cranes, compressors, personnel and material hoists, front-end loaders, concrete pumps, on-site bending jigs, welding machines, and a variety of hand-held tools, in addition to the delivery trucks bringing construction materials to the site.

INTERIOR CONSTRUCTION AND FINISHING

Interior construction of a larger building typically lasts approximately 10 months. This stage includes the construction of interior walls, installation of lighting fixtures, and interior finishes (flooring, painting, etc.), as well as mechanical and electrical work, such as the installation of elevators. Equipment used during interior construction would include exterior hoists, pneumatic equipment, delivery trucks, and a variety of small hand-held tools.

TYPICAL CONSTRUCTION ACTIVITIES

Typical equipment used for excavation and pouring a foundation includes excavators, bulldozers, rockbreakers, backhoes, tractors, hammers, and concrete pumping trucks. Excavation is the first step. Bulldozers and front-end loaders excavate the soil and load it onto trucks for transport and disposal. The trucks transport excavated material and construction debris. Then, concrete trucks arrive at the site with pre-mixed concrete and pump it into the site to form the foundations and building walls. At the same time, infrastructure connections are built. These include lines for water, sewer, stormwater, electricity, and telecommunications.

The construction equipment likely to be used during erection of the superstructure and framing would include cranes, compressors, derricks, hoists, bending jigs, and welding machines. During facade and roof construction, hoists and cranes would continue to be used. Trucks would remain in use for material supply and construction waste removal.

During construction of the superstructure and interior work, the greatest number of construction workers would be employed on site, and a wide variety of supplies are delivered. It is anticipated that the bulk of construction activities related to the new construction would take place Monday through Friday. The permitted hours of construction regulated by the New York City Noise Code and the New York City Department of Buildings (DOB) apply in all areas of the City, and are reflected in the collective bargaining agreements with major construction trade unions. In the event that overtime work is required, appropriate work permits from the DOB must be obtained. In accordance with City regulations, work cannot begin before 7 AM on weekdays, although workers may arrive to the site between 6 and 7 AM. Normally, work would end at 3:30 PM, unless overtime is required and appropriately permitted. On occasion, overtime may be required to complete some time-sensitive tasks beyond the normal work day on weekdays and possibly on weekends.

Development of the mid-rise and low-rise sites outside the Jamaica Center CBD would proceed in a similar fashion but at a quicker pace and smaller scale than outlined above.

D. POTENTIAL IMPACTS DURING CONSTRUCTION

HISTORIC RESOURCES

ARCHAEOLOGICAL RESOURCES

As described in Chapter 7, “Historic Resources,” five potential development sites include lots that have been determined to be sensitive for archaeological resources.

Construction on four potential development sites (sites 401, 410, 463, and 475) could result in significant adverse impacts on potential archaeological resources due to excavations for foundations and footings of new buildings. Given that these sites have been identified as potentially archaeologically sensitive, and they could be developed under the proposed actions without any additional discretionary approvals, there are no measures available in connection with the proposed actions to require further archaeological investigations or mitigation. Private ownership of the land prevents the City from conducting or requiring an archaeological test program to test for potential archaeological remains, or from mandating the preservation or documentation of such remains, should they exist. Therefore, development on these sites would result in unmitigated significant adverse impacts.

ARCHITECTURAL RESOURCES

As also discussed in more detail in Chapter 7, “Historic Resources,” projected development pursuant to the proposed actions could have adverse physical impacts on four known and potential architectural resources that are located within 90 feet of proposed construction activities, which is close enough to potentially experience adverse construction-related impacts from ground-borne construction-period vibrations, falling debris, and collapse. These architectural resources include:

- The Register (NYCL and S/NR) at 161-04 Jamaica Avenue;
- The Sidewalk Clock (NYCL and S/NR) at 161-11 Jamaica Avenue;
- The J. Kurtz and Sons Store (NYCL and S/NR) at 162-24 Jamaica Avenue; and

- The First Presbyterian Church in Jamaica Complex, and the 104th Field Artillery Armory at 93-05 168th Street.

Although these architectural resources could potentially experience adverse direct impacts, they would be offered protection from accidental damage through DOB controls governing the protection of adjacent properties from construction activities.

While development of more than a few of the potential development sites is unlikely, up to thirteen architectural resources could potentially experience construction-related physical impacts from ground-borne construction-period vibrations, falling debris, collapse, or other accidental damage from adjacent potential development. Although the thirteen resources listed below could experience adverse direct impacts, they would be offered protection from accidental damage through DOB controls governing the protection of adjacent properties from construction activities. Additional protections could be provided through the implementation of construction protection plans that follow *TPPN #10/88*, but there are no mechanisms to require the implementation of such plans for private as-of-right development.

HAZARDOUS MATERIALS

As described in Chapter 11, “Hazardous Materials,” a number of the projected and potential development sites are recommended for (E) designations as part of the proposed zoning (see Tables 11-2 and 11-2 in Chapter 11). This (E) designation would mitigate the potential for impacts associated with hazardous materials.

Any site that has been (E)-designated requires that the developer conduct a testing and sampling protocol, and develop a remediation plan, where appropriate, to the satisfaction of the New York City Department of Environmental Protection (NYCDEP) before the issuance of a building permit by the Department of Buildings (pursuant to Section 11-15 Zoning Resolution—Environmental Requirements). The (E) designation also includes mandatory construction-related health and safety plans that must be approved by NYCDEP. The scope of the Phase II Site Investigation is dependent on the nature of the recognized environmental concerns at the site with the (E) designation, any recognized environmental condition must be adequately addressed with development of a site.

Demolition of interiors, portions of buildings, or entire buildings are regulated by City laws and enforced by DOB requiring abatement of asbestos prior to any intrusive construction activities including demolition. The Occupational Health and Safety Administration (OSHA) also regulates construction activities to prevent excessive exposure of workers to contaminants in the building materials, including lead in paint. New York State waste regulations control handling and disposal of demolition debris and contaminated materials associated with construction. Adherence to these regulations would prevent impacts from development activities at any of the projected and potential development sites.

In addition to the (E) designation sites, several of the development sites are City-owned sites. The (E) designation would not apply to these properties. For these sites, the City would implement restrictions in the disposition of the land that would require all hazardous materials issues be examined and remediated, as necessary.

With the above measures in place, there would be no significant adverse impacts from the potential presence of contaminated materials during construction.

TRAFFIC AND PARKING

TRAFFIC

The proposed actions would result in a mix of office, retail, residential, community facility, and industrial space over a 10-year period in primarily newly constructed buildings.

Construction of the development anticipated under the RWCDs would generate trips resulting from arriving and departing construction workers, excavation of materials, delivery of materials and equipment, and removal of construction waste. Construction typically occurs between 7 AM and 4 PM. Construction workers therefore typically arrive before the AM peak commuter period and depart before the PM peak hour, and therefore do not represent a substantial increment during the area's peak travel periods. Trucks movements are also typically distributed throughout the day, and would generally occur between the hours of 7 AM and 4:30 PM. When possible, contractors also schedule deliveries and other construction activities during off-peak travel hours to avoid delays.

Construction activities are expected to result in the short-term disruption of both traffic and pedestrian movements at the development sites. This would occur primarily due to the temporary loss of curbside lanes that would be occupied by the staging of equipment and the movement of materials to and from the site. Additionally, construction would at times result in temporary closing of sidewalks adjacent to the sites.

These impacts would be temporary at each site and not result in significant adverse impacts on local traffic or transportation conditions. NYCDOT-OCMC must issue permits for all street/sidewalk closures after evaluation of traffic and pedestrian conditions. These permits would be issued only if it can be demonstrated that these impacts have been minimized.

PARKING

Construction workers are expected to use both public transportation and private automobiles with respect to their work related trips. Worker parking would typically be off-site for the larger development sites and at curbside in the vicinity of the smaller ones. While workers who drive to a project site would increase the demands for on and off-street parking, this impact would be temporary construction impact.

AIR QUALITY

Possible impacts on local air quality during construction of the projected development sites include:

- Fugitive dust (particulate) emissions from land clearing operations; and
- Mobile source emissions, including hydrocarbons, nitrogen oxide, and carbon monoxide.

FUGITIVE EMISSIONS

Fugitive dust emissions during urban construction typically occur from land clearing, excavation, hauling, filling, spreading, and grading. The quantities of emissions depend on the extent and nature of the land-clearing operations, the type of equipment employed, the physical characteristics of the underlying soil, the speed at which construction vehicles are operated, and the type of fugitive dust control methods employed. The U.S. Environmental Protection Agency (EPA) has suggested, in general, an overall emission rate of about 1.2 tons of particulate matter

per acre per month of active construction from all phases of land clearing operations with no fugitive dust control measures. However, this is a national estimate and actual emissions vary widely depending on many factors, including the intensity and type of land clearing operations. Much of the fugitive dust generated by construction activities consists of relatively large-size particles, which typically settle within a short distance from the construction site and do not significantly impact nearby buildings or people. Because fugitive dust is a common impact of construction, it is regulated under the City's code. During construction, all appropriate fugitive dust control measures—including watering exposed areas and using dust covers for trucks—must be used to satisfy Section 1402.2-9.11 of the New York City Air Pollution Code. To prevent fugitive dust from becoming airborne, the measures include:

- Use of water to control dust in the construction operations and during the clearing and grading of land;
- Application of water to dirt paths, materials, stockpiles, and other surfaces that can generate airborne dust over extended period. Construction of temporary roads would be built with properly sized stone or concrete equivalent over filling material;
- Covering of open-body trucks transporting materials likely to generate airborne dust at all times when in motion; and
- Prompt removal of earth or other materials from paved streets where earth or other material has been deposited by trucking or earth-moving equipment, erosion by water, or other means.

MOBILE SOURCE EMISSIONS

Mobile source emissions may result from the operation of construction equipment, trucks delivering materials and removing debris, workers' private vehicles, or occasional disruptions in traffic near the construction site. While these increases are also temporary, localized increases in mobile source emissions can be minimized by following standard traffic maintenance requirements, such as:

- Construction requiring temporary street closings is performed during off-peak hours wherever possible;
- The existing number of traffic lanes is maintained to the maximum extent possible (see also "Traffic and Parking," above); and
- Idling of delivery trucks or other equipment is not be permitted during unloading or other inactive times in accordance with local law.

NOISE

Impacts on the noise levels during construction of the projected and potential development sites would include noise and vibration from the operation of construction equipment. The severity of impacts from these noise sources would depend on the noise characteristics of the equipment and activities involved, the construction schedule, and the distance to potentially sensitive noise receptors. Noise and vibration levels at a given location are dependent on the kind and number of pieces of construction equipment being operated, as well as the distance from the construction site (see Table 20-3). Noise caused by construction activities varies widely depending on the phase of construction—land clearing and excavations, foundations and capping, erection of structural steel, construction of exterior walls, etc.—and the specific task being undertaken during that phase of construction.

**Table 20-3
Construction Equipment Noise Emission Levels**

| Equipment | Typical Noise Level (dBA) at 50 feet |
|--|--------------------------------------|
| Arc Welder | 73 |
| Asphalt Pavers | 85 |
| Asphalt laying equipment | 85 |
| Backhoe | 80 |
| Bulldozer | 85 |
| Compactor | 77* |
| Compressors | 75* |
| Cement Mixer | 85 |
| Concrete Pumps | 82 |
| Concrete Trucks | 85 |
| Delivery Trucks | 84 |
| Dual Hoist | 85 |
| Crane (Crawler Crane) | 85 |
| Crane (Hydraulic Crane) | 85 |
| Crane (Tower Crane) | 85 |
| Crane (Rubber Tire Crane) | 83 |
| Drill Rigs | 85 |
| Dump Trucks | 84 |
| Excavators | 85 |
| Forklift | 85 |
| Generators | 82 |
| Impact Wrenches | 85 |
| Jack Hammers | 71* |
| Pavers Cutter | 85 |
| Pile driving rig | 95 |
| Rebar Bender | 80 |
| Roller | 85 |
| Saw (Chain Saw) | 85 |
| Saw (Circular Saw) | 76 |
| Saw (Table Saw) | 76 |
| Scissor Lift | 85 |
| Slurry supply system | 85 |
| Tamper | 85 |
| Trailers | 85 |
| Toweling Machine | 85 |
| Water Pumps | 77 |
| Note: * NYC Noise Code, effective on July 1, 2007. | |
| Sources: Transit Noise and Vibration Impact Assessment, FTA, May 2006, and FHWA Roadway Construction Noise Model (FHWA RCNM), 2006. | |

Increased noise levels caused by construction activities can be expected to be most significant during the early phases of construction. The most significant noise source associated with the construction equipment would be the use of pile-drivers. This noise would be intrusive and would be heard by the employees at surrounding business and the residents that live within several blocks of the projected and potential development site. However, the use of pile-driving equipment would most likely be limited in this area. Increases in noise levels caused by delivery trucks and other construction vehicles would not be significant. Small increases in noise levels are expected to be found near a few defined truck routes and the streets in the immediate vicinity of the projected and potential sites.

Noise from construction activities and some construction equipment is regulated by the New York City Noise Control Code and by the U.S. Environmental Protection Agency (USEPA). 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 AM and 6 PM, and sets noise limits for certain specific pieces of construction equipment (see also DEP Report # CON-79-0001). Construction activities occurring after hours (weekdays between 6 PM and 7 AM and on weekends) may be authorized by the Commissioner of the NYCDEP in the following circumstances: (i) emergency conditions; (ii) public safety; (iii) construction projects by or on behalf of city agencies; (iv) construction activities with minimal noise impacts; and (v) where there is a claim of undue hardship resulting from unique site characteristics, unforeseen conditions, scheduling conflicts and/or financial considerations. The USEPA requirements mandate that certain classifications of construction equipment meet specified noise emissions standards.

VIBRATION

INTRODUCTION

Construction activities have the potential for resulting in vibration levels that may 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 that 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, typically historically significant structures or buildings, generally construction activities do not reach the levels that can cause architectural or structural damage, but they can achieve levels that may be perceptible and annoying in building very close to a construction site. Table 20-4 shows vibration source levels for construction equipment.

For limited periods of time due to infrequently occurring construction activities, vibratory levels will be perceptible in the vicinity of the construction site but would not be considered significant adverse impacts.

However, given the protection measures that are in place at NYCDOB and the limited duration of impacts at each site, no significant vibration impacts are expected with the proposed actions.

**Table 20-4
Vibration Source Levels for Construction Equipment**

| Equipment | PPV_{ref} (in/sec) | Approximate L_v (ref) (VdB) |
|---|-----------------------------------|--|
| Vibratory Roller | 0.210 | 94 |
| Hoe Ram | 0.089 | 87 |
| Large bulldozer | 0.089 | 87 |
| Caisson drilling | 0.089 | 87 |
| Loaded trucks | 0.076 | 86 |
| Jackhammer | 0.035 | 79 |
| Small bulldozer | 0.003 | 58 |
| Source: <i>Transit Noise and Vibration Impact Assessment, FTA-VA-90-1003-06, May 2006.</i> | | |

E. CONCLUSIONS

Construction-related activities resulting from the proposed actions are not expected to have any long-term significant adverse impacts other than those described above relating to archaeological and architectural resources. However, as discussed previously in Chapter 7, “Historic Resources,” such impacts cannot be mitigated because the projected and potential development sites are privately owned and could be redeveloped as of right under the proposed actions (see also Chapter 24, “Unavoidable Adverse Impacts”). The construction process in New York City is regulated to ensure that construction period impacts are eliminated or minimized. The construction process requires consultation and coordination with a number of City and/or State agencies, including NYCDOB, NYCDOT, NYCDEP, and NYSDEC (where applicable), among others. For these reasons, with the exception of historic resources, no significant adverse impacts are expected to result with respect to construction. *