Chapter 19: Construction

A. INTRODUCTION

As described in detail in Chapter 1, "Project Description," Co-applicants, the New York City Economic Development Corporation (NYCEDC), 8th Regiment Partners, LLC, and the New York City Department of Citywide Administrative Services (DCAS) are leading a collaborative process to reuse and redevelop a portion of Block 3247 in the Kingsbridge Heights neighborhood of the Bronx, NY (the "Proposed Project"). That portion includes the Kingsbridge Armory Site (the "Armory Site") at 1 West Kingsbridge Road, which is occupied by the Kingsbridge Armory (the "Armory") and currently owned by the City of New York (the "City"), and the New York National Guard ("National Guard") Site (the "National Guard Site") at 10 West 195th Street (collectively, the "Project Site"). The Proposed Project includes the adaptive reuse of the vacant Armory to provide up to approximately 735,800 gross square feet (gsf) of new mixed-use uses while the National Guard Site would be redeveloped with a new 16-story residential building with ground floor retail that would total up to approximately 494,500 gsf. The Proposed Project would include a total of up to approximately 1,230,300 gsf of development at the Project Site.

It is anticipated that construction of the Proposed Project would take approximately 66 months, commencing in 2027 with completion in 2032. Construction on the Armory Site would begin in 2027 and conclude in 2030. As construction continues on the Armory Site, coordination with the National Guard would be undertaken to determine an appropriate relocation strategy and reach a lease closing date in 2028. Construction at the National Guard Site would then occur in 2029 once the National Guard relocation is complete with completion in 2032.

This chapter summarizes the anticipated construction schedule for the Proposed Project and assesses the potential for significant adverse impacts during the construction period. The City, state, and federal regulations and policies that govern construction are described, followed by a description of the preliminary construction schedule and the types of activities likely to occur during construction. The types of construction equipment are also discussed, along with the number of workers and truck deliveries. Finally, the potential impacts from construction activity are assessed.

PRINCIPAL CONCLUSIONS

Construction associated with the Proposed Project would result in temporary disruptions in the surrounding area and has the potential to result in temporary significant adverse noise impacts. For all other technical areas including transportation, air quality, vibration, land use and neighborhood character, socioeconomic conditions, community facilities, open space, historic and cultural resources, hazardous materials, and water and sewer infrastructure, construction activities associated with the Proposed Project would not result in significant adverse impacts.

NOISE

Construction of the Proposed Project is predicted to result in elevated noise levels at the analyzed receptors, which represent the noise-sensitive uses (e.g. outdoor recreational spaces) that would experience the maximum cumulative construction noise levels. Specifically, at school buildings on West 195th Street between Jerome Avenue and Reservoir Avenue, residential buildings along Reservoir Avenue between West 195th Street and West Kingsbridge Road, residential building at 2755 Reservoir Avenue, residential buildings along Reservoir Avenue between West 195th Street and West Kingsbridge Road, 2700 Jerome Avenue, 1 East Kingsbridge Road, residential buildings at 2614 to 2755 Grand Avenue and 2611 to 2650 Davidson Avenue, and commercial office buildings at 2 to 50 West Kingsbridge Road, construction is predicted to result in potential temporary significant adverse construction noise impacts—noticeable and potentially intrusive noise level increases and total noise levels that would be considered "clearly unacceptable."

At other receptors, construction of the Proposed Project would, for some portion of the construction period, result in noise level increases that would be perceptible. However, at these receptors, maximum noise level increases would not be considered objectionable and would therefore not rise to the level of a significant impact according to the impact criteria described above. Further, construction would comply with *New York City Noise Control Code* regulations. Per *New York City Noise Control Code* regulations, the Proposed Project would be required to prepare a Construction Noise Mitigation Plan, which may identify more control measures that would further reduce construction noise levels. Additional refinements to the construction noise analysis to be conducted between the Draft and Final EIS, including detailed modeling of additional analysis time periods and existing condition noise levels, may result in elimination of predicted significant adverse construction noise impacts at some receptors.

B. GOVERNMENTAL COORDINATION AND OVERSIGHT

Construction oversight involves several City, state, and federal agencies. **Table 19-1** lists the primary involved agencies and their areas of responsibility.

For projects in New York City, primary construction oversight lies with the New York City Department of Buildings (DOB), which ensures that construction projects meet the requirements of the New York City Building Code and that buildings are structurally, electrically, and mechanically safe. In addition, DOB enforces safety regulations to protect workers and the general public during construction: the areas of oversight include installation and operation of equipment such as cranes, sidewalk sheds, and safety netting and scaffolding. The New York City Department of Environmental Protection (DEP) enforces the New York City Noise Code and regulates water disposal into the sewer system. The City of New York Department of Sanitation (DSNY) has regulatory and enforcement oversight of the storage, transport, and disposal of asbestos waste. The New York City Fire Department (FDNY) has primary oversight of compliance with the New York City Fire Code. The New York City Department of Transportation (DOT) Office of Construction Mitigation and Coordination (OCMC) reviews and approves any traffic lane and sidewalk closures. Coordinating with New York City Transit (NYCT) is required where work at the Project Site is within 200 feet of subway structures. The New York City Landmarks Preservation Commission (LPC) reviews any archaeological testing or

monitoring that may be required. LPC also reviews and approves construction protection plans (CPPs) and any monitoring measures necessary to prevent damage to historic structures.

Table 19-1
Construction Oversight in New York City

Agency	Areas of Responsibility
New York City	
Department of Buildings	Primary oversight for Building Code and site safety
Department of Environmental Protection	Noise, dewatering, construction near DEP water and sewer infrastructure.
Department of Sanitation	Storage, transport, and disposal of asbestos waste
Fire Department	Compliance with Fire Code
Department of Transportation	Traffic lane and sidewalk closures
New York City Transit	Work at the Project Site within 200 feet of NYCT structures
Landmarks Preservation Commission	Historic and archaeological resources
New York State	
Department of Labor	Asbestos Workers
Department of Environmental Conservation	Hazardous materials and fuel/chemical storage tanks
Office of Parks, Recreation and Historic Preservation	Historic and archaeological resources; Section 106
United States	
Environmental Protection Agency	Air emissions, noise, hazardous materials, poisons
Occupational Safety and Health Administration	Worker safety

At the state level, the New York State Department of Labor (DOL) licenses asbestos workers. The New York State Department of Environmental Conservation (DEC) regulates disposal of hazardous materials, and construction and operation of bulk petroleum and chemical storage tanks. The New York State Office of Parks, Recreation and Historic Preservation (OPRHP) reviews and approves CPPs and any monitoring measures necessary to prevent damage to historic structures. Since the Proposed Project is seeking Federally appropriated Community Project Funding administered by the U.S. Department of Housing and Urban Development (HUD), the environmental review will need to meet National Environmental Policy Act (NEPA) requirements which will require consultation with the New York State Historic Preservation Office (SHPO) and Federally recognized Tribal Nations in accordance with Section 106 of the National Historic Preservation Act (NHPA).

At the federal level, the U.S. Environmental Protection Agency (EPA) has wide-ranging authority over environmental matters, including air emissions, noise, hazardous materials, and the use of poisons, although much of the responsibility is delegated to the state level. The Occupational Safety and Health Administration (OSHA) sets standards for work site safety and construction equipment.

C. ANTICIPATED CONSTRUCTION SCHEDULE

Table 19-2 presents the anticipated construction schedule for the Proposed Project. Construction of the Proposed Project is anticipated to begin in 2027 and be complete by 2032, over an approximately 66-month period. Construction on the Armory Site would begin in 2027 and be complete in 2030 over an approximately 36-month period while

construction on the National Guard Site would begin in 2029 and be complete in 2032 over an approximately 42-month period. As shown in **Table 19-2**, construction at the Armory Site and the National Guard Site would include the following components, some of which would overlap: excavation and support of excavation; foundation; superstructure; building envelope; finishes/interiors; and punch list. These stages are described in greater detail below.

Table 19-2
Anticipated Construction Schedule—Proposed Project

Construction Component	Start Month	Finish Month	Approximate Duration (months)
OVERALL	**Month 1 (in 2027)**	**Month 66 (in 2032)**	**66**
Armory Site	**Month 1**	**Month 36**	**36**
Excavation and Support of Excavation	Month 1	Month 6	6
Foundation	Month 5	Month 12	8
Superstructure	Month 13	Month 21	9
Building Envelope	Month 19	Month 26	8
Interior Finishes	Month 22	Month 33	12
Punch List	Month 33	Month 36	4
National Guard Site	**Month 25**	**Month 66**	**42**
Excavation and Support of Excavation	Month 25	Month 32	8
Foundation	Month 31	Month 39	9
Superstructure	Month 39	Month 50	12
Building Envelope	Month 46	Month 53	8
Interior Finishes	Month 49	Month 63	15
Punch List	Month 62	Month 66	5

Source: Joy Construction Corp., February 2025

D. GENERAL CONSTRUCTION PRACTICES

This section describes the construction practices that are likely to be employed during construction of the Proposed Project, including hours of work, access, deliveries, and staging areas, public safety, and rodent control.

HOURS OF WORK

Construction work would typically begin at 7:00 AM on weekdays, with most workers arriving between 6:00 AM and 7:00 AM. Normally work would end at 3:30 PM, but it can be expected that in order to complete certain critical tasks (e.g., finishing concrete placement for a floor deck), the workday may be extended beyond normal work hours. Extended workdays would generally last until approximately 6:00 PM and would not include all construction workers on-site, but only those involved in the specific task requiring additional work time.

In addition, weekend or night work may also be required for certain platform construction activities and/or to meet the project construction schedule due to weather delays or other circumstances. Appropriate work permits from DOB would be obtained for any necessary work outside of the permissible construction hours (7:00 AM to 6:00 PM on weekdays) for weekend or night work.

ACCESS, DELIVERIES, AND STAGING AREAS

During construction, access to the construction site would be fully controlled. Work areas would be fenced off and limited access points for workers and trucks would be provided. Material deliveries to the construction areas would be controlled and scheduled. As is typical with New York City construction in a confined urban environment, parking lanes and/or sidewalks immediately adjacent to the construction areas (i.e., West Kingsbridge Road, Reservoir Road, West 195th Street, and Jerome Avenue) may need to be closed or narrowed for varying periods of time during the construction period. Maintenance and Protection of Traffic (MPT) plans would be developed for any required temporary sidewalk and lane narrowing and/or closures to protect the safety of the construction workers and the public passing through the area. Approval of these plans and implementing the closures would be coordinated with DOT's OCMC. Anticipated MPT measures would include parking lane closures, safety signs, safety barriers, and construction fencing. Construction staging of materials and equipment would primarily occur within the construction site and, where applicable, the adjacent parking lane.

PUBLIC SAFETY

A variety of measures would be employed to protect public safety during the construction. Public safety measures would include: sidewalk bridges to provide overhead protection; safety signs to alert the public about active construction work; safety barriers to protect the safety of the public passing by construction areas; flag persons to control trucks entering and exiting the construction areas and/or to provide guidance for pedestrians and bicyclists safety; and safety nettings as the superstructure work advances upward to prevent debris from falling to the ground. All DOB safety requirements would be followed to ensure the safety of the community and the construction workers.

RODENT CONTROL

Construction contracts would include provisions for a rodent (i.e., mouse and rat) control program. Before the start of construction, the contractor would survey and bait the appropriate areas and provide for proper site sanitation. During construction, the contractor would carry out a maintenance program, as necessary. Signage would be posted, and coordination would be conducted with the appropriate agencies.

E. DESCRIPTION OF CONSTRUCTION ACTIVITIES

EXCAVATION AND FOUNDATION

The adaptive reuse of the Armory would involve limited in-ground construction related to excavation on the Armory Site, including below the structure for certain foundation work. Construction at the National Guard Site would require in-ground excavation for the construction of the new residential building. Excavation work would begin with the installation of walls to contain soil around the excavation area, and excavators would then be used for soil excavation. If rock is encountered, line drilling and/or rock chipping techniques would be employed. The excavated materials would be loaded onto dump trucks for transport to a licensed disposal facility or stored for reuse on any portion of the Project Site that needs fill. Excavation would be followed by the construction of the foundation and below-grade elements of the structures. Piles would be installed with the

use of drill rigs. Excavation and foundations activities may also involve the use of a mobile crane, concrete trowels, welders, and rebar benders.

SUPERSTRUCTURE

This stage would involve construction to create two new levels above grade within the drill hall of the Armory. In addition, solar panels and skylights are proposed to be installed on the roof. A mobile crane would be situated out of the Armory to lift materials during this phase of work. Other activities would include the use of rebar benders, concrete trowels, and a variety of trucks.

The superstructure work for the proposed building at the National Guard Site would include the framework for the proposed building, such as beams, slabs, and columns. Construction of the interior structure—or core—of the building would include elevator shafts; vertical risers for mechanical, electrical, and plumbing systems; electrical and mechanical equipment rooms; core stairs; and restroom areas. A crane would first be brought onto the National Guard Site during the superstructure task and would be used to lift structural components and other large materials. In addition, superstructure activities would include the use of rebar benders, concrete trowels, and a variety of trucks.

BUILDING ENVELOPE

The Proposed Project would involve certain changes to the exterior of the Armory, among them to provide additional pedestrian and vehicular access, and to comply with the Americans with Disabilities Act (ADA). There would be no changes to the Armory's massing or height. Solar panels and skylights are proposed to be installed on the roof. For the proposed building at the National Guard Site, this stage would include the installation of the exterior elements of the building.

Similar to superstructure activities, building envelope work would include the use of a crane and hoists at the Armory Site and the National Guard Site.

INTERIOR FINISHES

Adaptive reuse of the Armory would involve reconfiguration of the interior spaces while the proposed building at the National Guard site would involve the construction of the interiors of the building during this stage of construction. Activities during interior finishes would include the construction of interior partitions, installation of lighting fixtures and interior finishes (e.g., flooring, painting, etc.), and mechanical and electrical work, such as the installation of elevators and lobby finishes. Equipment used during interior fit-out would include hoists and a variety of small handheld tools.

Interior finishes would typically be the quietest period of construction in terms of its effect on the public because most of the construction activities would occur inside the Armory and within the enclosed building at the National Guard Site with the exteriors substantially complete.

PUNCHLIST

Final cleanup and touchup of the buildings and final building systems (e.g., electrical system, fire alarm, plumbing, etc.) testing and inspections would be part of this stage of construction.

F. NUMBER OF CONSTRUCTION WORKERS AND TRUCK DELIVERIES

Table 19-3 shows the estimated average daily number of workers and deliveries to the Project Site by calendar quarter for all construction activities.

Table 19-3
Average Number of Daily Workers and Trucks by Quarter—Proposed Project

Year	2027				2028				2029			
Quarter	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Workers	10	25	20	20	35	57	100	107	130	125	**148**	65
Trucks	20	23	15	15	28	25	32	20	**37**	27	34	22
Year	2030				2031				2032			
Quarter	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Workers	30	42	30	70	127	120	110	107	120	45	-	-
Trucks	25	27	25	32	33	17	10	10	13	7	-	-

Year / Quarter	Peak	Average
Workers	148	75
Trucks	37	23

Source: Joy Construction Corp., June 2024

For the Proposed Project, the combined peak construction worker vehicle and truck trip generation would occur during the third quarter of 2029. The average number of workers throughout the construction period would be 75 per day with a peak of 148 per day in the third quarter of 2029. For truck trips, the average number of trucks would be 23 per day with a peak of 37 per day in the first quarter of 2029.

G. CONSTRUCTION EFFECTS OF THE PROPOSED PROJECT

Construction can be disruptive to the surrounding area for periods of time. The following analyses describe the potential impacts that could result from construction of the Proposed Project with respect to transportation, air quality, and noise and vibration as well as land use and neighborhood character, socioeconomic conditions, community facilities, open space, historic and cultural resources, hazardous materials, and water and sewer infrastructure.

TRANSPORTATION

The construction transportation analysis assesses the potential for construction activities to result in significant adverse impacts on traffic, parking conditions, and transit and pedestrian facilities based on the peak construction-generated worker and truck traffic. Corresponding with the construction sequencing and worker/truck projections, detailed trip generation estimates were developed to identify the construction-related peak hour trip-making activities. These estimates were then used as the basis for assessing the potential transportation-related impacts during construction.

TRAFFIC

An evaluation of construction sequencing and worker/truck projections was undertaken to assess potential traffic impacts.

Construction Trip Generation

As discussed in Section C above, "Anticipated Construction Schedule," the Proposed Project would be developed from 2027 to 2032 and would generate construction worker and truck traffic during that time. Average daily construction worker and truck activities by month were projected for the entire construction period. Worker and truck trip projections, aggregated by quarter, were refined to account for worker modal splits and vehicle occupancy, arrival and departure distribution, and passenger car equivalent (PCE) factors for construction truck traffic.

Construction Worker Modal Splits and Vehicle Occupancy

Based on the 2000 U.S. Census reverse journey-to-work (RJTW) data, the modal split profile for construction and excavation occupations is as follows.

Auto—47 percent (at an average vehicle occupancy of approximately 1.16 persons per vehicle);

Subway—38 percent;

Bus—11 percent; and

Walk—4 percent.

Daily Workforce and Truck Deliveries

As shown above in **Table 19-3**, the construction of the Proposed Project would generate the highest amount of combined daily activities in the third quarter of 2029 with estimated averages of 148 workers and 34 truck deliveries per day.

The peak daily workforce and truck trip projections were used to estimate peak hour construction trips and to provide an assessment of the maximum transportation impacts during construction of the Proposed Project. Worker auto trips and truck delivery projections were refined to account for the daily distribution of arrival and departure trips to and from the Project Site.

Peak Hour Construction Worker Vehicle and Truck Trips and Traffic Study Area

Site activities would mostly take place on weekdays during the construction shift of 7:00 AM to 3:30 PM. Construction truck trips would be made throughout the day (with more trips made during the early morning), but most trucks would remain in the area for short durations, and construction workers would typically commute during the hours before and after the work shift. For analysis purposes, each worker vehicle was assumed to arrive in the morning and depart in the afternoon or early evening, whereas each truck delivery was assumed to result in two truck trips during the same hour (one "in" and one "out"). Further, in accordance with the 2021 *City Environmental Quality Review (CEQR) Technical Manual*, each truck is assumed to equate to two PCEs.

The estimated daily vehicle trips were distributed throughout the workday based on projected work shift allocations and conventional arrival/departure patterns of

construction workers and trucks. For construction workers, the majority (approximately 80 percent) of the arrival and departure trips would take place during the hour before and after each shift (between 6:00 AM and 7:00 AM and between 3:00 PM and 4:00 PM, respectively). Construction truck deliveries into the construction site typically peak (25 percent) during the hour before each shift (6:00 AM to 7:00 AM), overlapping with construction worker arrival traffic.

The worker and truck trip above arrival and departure temporal distributions are summarized in **Table 19-4**. Correspondingly, the peak construction hourly trip projections for the Proposed Project are presented in **Table 19-5**.

Table 19-4
Construction Worker and Truck Trip Temporal Distributions

	Auto/Taxi In	Auto/Taxi Out	Truck In	Truck Out
6 AM – 7 AM	80%	0%	25%	25%
7 AM – 8 AM	20%	0%	10%	10%
8 AM – 9 AM	0%	0%	10%	10%
9 AM – 10 AM	0%	0%	10%	10%
10 AM – 11 AM	0%	0%	10%	10%
11 AM – 12 PM	0%	0%	10%	10%
12 PM – 1 PM	0%	0%	10%	10%
1 PM – 2 PM	0%	0%	5%	5%
2 PM – 3 PM	0%	5%	5%	5%
3 PM – 4 PM	0%	80%	2.5%	2.5%
4 PM – 5 PM	0%	15%	2.5%	2.5%
Daily Total	**100%**	**100%**	**100%**	**100%**

Table 19-5
Proposed Project Construction Vehicle Trip Projections

	Auto Trips			Truck Trips			Vehicle Trips			Total (in PCEs)		
Hour	**In**	**Out**	**Total**	**In**	**Out**	**Total**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
6 AM – 7 AM	47	0	47	9	9	18	56	9	65	65	18	83
7 AM – 8 AM	13	0	13	3	3	6	16	3	19	19	6	25
8 AM – 9 AM	0	0	0	3	3	6	3	3	6	6	6	12
9 AM – 10 AM	0	0	0	3	3	6	3	3	6	6	6	12
10 AM – 11 AM	0	0	0	3	3	6	3	3	6	6	6	12
11 AM – 12 PM	0	0	0	3	3	6	3	3	6	6	6	12
12 PM – 1 PM	0	0	0	3	3	6	3	3	6	6	6	12
1 PM – 2 PM	0	0	0	3	3	6	3	3	6	6	6	12
2 PM – 3 PM	0	4	4	2	2	4	2	6	8	4	8	12
3 PM – 4 PM	0	47	47	1	1	2	1	48	49	2	49	51
4 PM – 5 PM	0	9	9	1	1	2	1	10	11	2	11	13
Daily Total	60	60	120	34	34	68	94	94	188	128	128	256

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

Construction associated with the Proposed Project would result in 83 PCEs between 6:00 AM and 7:00 AM and 51 PCEs between 3:00 PM and 4:00 PM during the third quarter of 2029. It is expected that these construction increments would be dispersed across area intersections such that no intersection would incur 50 or more PCEs in either peak hour.

Therefore, a detailed traffic analysis is not warranted, and the Proposed Project is not expected to result in any significant adverse traffic impacts. An assignment of these trips will be prepared and presented as part of the Final EIS for both peak hours.

TRANSIT

Based on 2000 U.S. Census data for workers in the construction and excavation industry, it is estimated that approximately 49 percent of construction workers would commute to the Project Site via transit (11 percent by bus and 38 percent by subway). The Proposed Project is located in the vicinity of multiple transit options, including the B, D and No. 4 trains and the Bx1, Bx2, Bx3, Bx9, Bx22, Bx28, and Bx32 bus routes. During the peak construction worker period (with a maximum of 148 average daily construction workers in the 7 AM to 3:30 PM shift), an estimated 73 workers would travel by transit. With 80 percent of these workers arriving or departing during the construction peak hours, the estimated number of peak-hour transit trips would be 58, including 45 subway trips and 13 bus trips. These trips would not exceed the *CEQR Technical Manual* analysis threshold of 200 or more peak hour subway trips or 50 or more peak hour bus trips on any bus route in any direction. Therefore, a detailed analysis of subway facilities or buses is not warranted, and the Proposed Project is not expected to result in any significant adverse subway or bus impacts.

PEDESTRIANS

As summarized above, approximately 148 average daily construction workers are projected during peak construction of the Proposed Project. With 80 percent of these workers arriving or departing during the construction peak hours (6 to 7 AM and 3 to 4 PM), the corresponding numbers of peak hour pedestrian trips traversing the area's sidewalks, corners, and crosswalks would be approximately 119, which would be well below the 200-pedestrian-trip *CEQR Technical Manual* analysis threshold for detailed analysis. Therefore, the Proposed Project would not result in any significant adverse construction pedestrian impacts.

PARKING

Construction of the Proposed Project would generate a maximum daily parking demand of 60 spaces in the third quarter of 2029. This parking demand is expected to be accommodated by off-street spaces and parking facilities within a ½--mile radius of the Project Site, which was estimated to be approximately 800 parking spaces under existing conditions during the AM period (see Chapter 13, "Transportation,"). Therefore, the Proposed Project is not expected to result in the potential for a significant parking shortfall during construction.

AIR QUALITY

As is typical with construction projects in New York City, construction of the Proposed Project would require use of both non-road construction equipment and on-road vehicles, which would result in emissions that have the potential to affect air quality. Non-road construction equipment includes equipment operating on-site, such as excavators, loaders, and mobile cranes. On-road vehicles include construction delivery trucks and construction worker vehicles arriving at and departing from the Project Site, as well as

operating on-site. In addition, emissions from dust-generating construction activities (i.e., truck loading and unloading operations) also have the potential to affect air quality. The *CEQR Technical Manual* lists several factors for consideration in determining whether a quantified on-site and/or off-site construction impact assessment for air quality is appropriate. These factors include the duration and intensity of construction activities, the location of nearby sensitive receptors, and emissions control measures.

The construction air quality assessment presented in this section includes a comparison of the air emissions from the construction of the Proposed Project with the air emissions estimates for individual construction stages taken from detailed modeling analyses that have previously undergone the city environmental review and approval process. Two approved projects, the *Two Bridges Large Scale Residential Development Final Environmental Impact Statement (FEIS)* (CEQR No. 17DCP148M) and the *Block 675 East FEIS* (CEQR No. 17DCP159M) were identified with similar building construction activities and emissions reduction programs as the Proposed Project and were therefore selected for the comparative assessment.

DURATION AND INTENSITY OF CONSTRUCTION ACTIVITIES

As is typical in New York City, construction of the Proposed Project would result in temporary disruption to the surrounding area. As detailed above, construction on the Armory Site would occur over an approximately 36-month period while construction on the National Guard Site would occur over an approximately 42-month period.

As shown in **Table 19-6**, although the overall construction duration for the Proposed Project is longer than those for the Block 675 East and Two Bridges LSRD projects, the individual construction duration for activities at the Armory Site and at the National Guard site are similar to the duration for the individual buildings estimated for the Block 675 East and Two Bridges LSRD projects. As with the Proposed Project, both the Block 675 East and Two Bridges LSRD projects also included multiple buildings with construction overlaps between the proposed buildings. However, most of the activities at the Armory Site would occur within the Armory where the walls of the Armory would act as a barrier to the transport of air pollutants. Further, indoor work would substantially curtail fugitive (wind-blown) dust emissions. Therefore, the maximum construction intensity for the Proposed Project is anticipated to be less, as discussed in the section below.

Table 19-6
Conceptual Construction Duration (Months)[1]

	Proposed Project		Block 675 East[3]		Two Bridges LSRD[3]		
Construction Stage	Armory Site[2] (735,800 gsf)	National Guard Site (494,500 gsf)	Project Site A (960,000 gsf)	Project Site B (262,292 gsf)	Site 4A/4B (632,376 gsf)	Site 5 (1,244,960 gsf)	Site 6A (672,266 gsf)
Demolition	6	8	1	2	1	N/A	N/A
Excavation & Foundation	8	9	9	6	13	9	10
Superstructure	9	12	11	6	8	10	14
Exteriors	8	8	20	6	11	11	17
Interiors and Finishing	15	18	29	9	14	18	20

Table 19-6
Conceptual Construction Duration (Months)[1]

Construction Stage	Proposed Project		Block 675 East[3]		Two Bridges LSRD[3]		
	Armory Site[2] (735,800 gsf)	National Guard Site (494,500 gsf)	Project Site A (960,000 gsf)	Project Site B (262,292 gsf)	Site 4A/4B (632,376 gsf)	Site 5 (1,244,960 gsf)	Site 6A (672,266 gsf)
Construction Duration by Building	36	42	42	23	36	35	34
Overall Construction Duration	66		42		36		
Nearest Sensitive Receptor Locations	100 feet from the Proposed Project		80 feet from the Project Site		Immediately adjacent to the Project Site		

Notes:
[1] Some of the construction stages listed in this table would overlap.
[2] Work at the Armory Site would involve the adaptive reuse of the vacant Armory.
[3] *Block 675 East FEIS* (CEQR No. 17DCP159M); *Two Bridges LSRD FEIS* (CEQR No. 17DCP148M).

INTENSITY OF CONSTRUCTION ACTIVITIES

Construction-related emissions were calculated for each calendar year throughout the duration of construction on a peak day and an annual rolling basis for particulate matter ($PM_{2.5}$) (see **Figures 19-1 and 19-2**) for work on the Amory Site (including activities within the Armory) and the National Guard Site. $PM_{2.5}$ was selected for determining the worst-case periods for all pollutants analyzed because the ratio of predicted $PM_{2.5}$ incremental concentrations to the impact criteria is anticipated to be higher than for other pollutants.

As shown in **Table 19-7**, construction of the Proposed Project would result in a projected maximum short-term emission rate of 0.092 pounds of $PM_{2.5}$ per day in February 2029 during exteriors work on the Armory Site and excavation activities on the National Guard Site and a maximum annual average emission rate of 0.057 pounds of $PM_{2.5}$ per day during the annual period from January 2029 to December 2029 during exteriors and interiors work on the Armory Site and excavation and foundation activities on the National Guard Site. The maximum short-term and annual $PM_{2.5}$ emission rates predicted for the Proposed Project are less than those for the Block 675 East and Two Bridges LSRD projects, where the maximum short-term emission rates range from 0.923 pounds per day to 1.050 pounds per day, and the annual average emission rates range from 0.352 pounds per day to 0.546 pounds per day. Therefore, as presented in **Table 19-7**, the overall peak short-term and annual emissions for the Proposed Project would be less than those analyzed for the Block 675 East and Two Bridges LSRD projects, where the detailed air quality analyses performed for these projects concluded that there would be no significant air quality impacts.

Figure 19-1: 24-Hour $PM_{2.5}$ Construction Emissions Profile

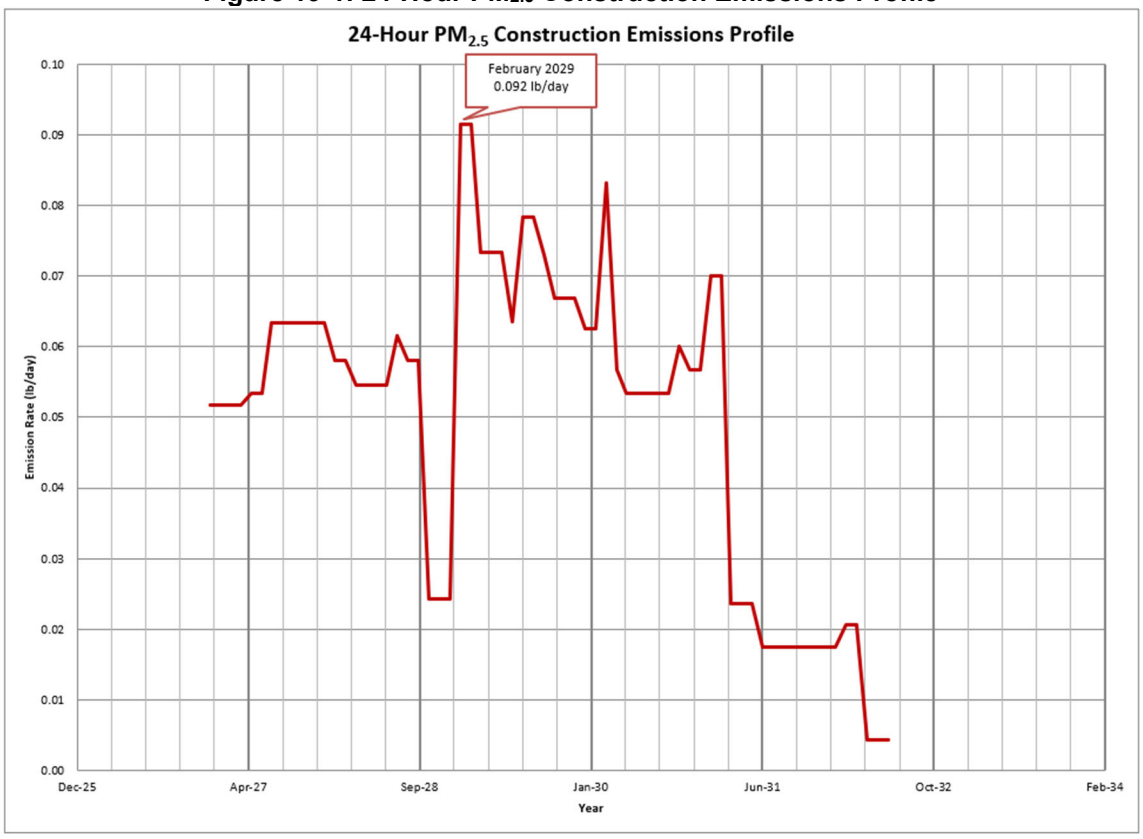


Figure 19-2: Annual $PM_{2.5}$ Construction Emissions Profile



Table 19-7
Construction Activity $PM_{2.5}$ Emissions (lb per day)

Construction Stage	Proposed Project	Block 675 East		Two Bridges LSRD		
		Project Site A	Project Site B	Site 4 (4A/4B)	Site 5	Site 6A
Short-Term Emissions						
Peak Short-Term Emissions by Building	0.092	0.684	0.239	0.208	0.416	0.426
Overall Peak Short-Term Emissions	**0.092**	**0.923**		**1.050**		
Annual Emissions						
Peak Annual Emissions by Building	0.057	0.216	0.136	0.089	0.264	0.193
Overall Peak Annual Emissions	**0.057**	**0.352**		**0.546**		
Sources: *Block 675 East FEIS* (CEQR No. 17DCP159M); *Two Bridges LSRD FEIS* (CEQR No. 17DCP148M).						

The approach and procedures for the construction of the Proposed Project would be typical of the methods utilized in other building construction projects throughout New York City and therefore would not be considered out of the ordinary in terms of intensity. In addition, as discussed above, most of the activities at the Armory Site would occur within the Armory where the walls of the Armory would act as a barrier to the transport of air pollutants. Construction sources would move around the Project Site over the construction period such that the air pollutant concentration increments would not persist in any single location.

Overall, emissions associated with the construction of the Proposed Project would be lower than a typical project due to the emission control measures to be implemented during construction (see "Emission Control Measures") and comparable to other projects that committed to implementing similar emission control measures.

LOCATION OF NEARBY SENSITIVE RECEPTORS

The area surrounding the Project Site contains a mix of residential and community facility uses, with commercial uses in a local retail corridor along West and East Kingsbridge Road. The nearest sensitive receptors are P.S. 86 and P.S. 340 located across West 195th Street approximately 100 feet north of the Project Site. During construction, there would be trucks and workers arriving to the area, as well as trucks and other vehicles backing up, loading, and unloading. These disruptions would be most pronounced in areas immediately adjacent to the construction areas but would have more limited effects on the larger study area, as most construction activities would take place within the Project Site or possibly within portions of sidewalks immediately adjacent to the Project Site. However, as discussed below, an emissions reduction program would be implemented for the construction activities associated with the Proposed Project and is expected to substantially reduce diesel emissions and minimize the effects of air quality on nearby receptors.

EMISSIONS REDUCTION MEASURES

Measures would be taken to reduce pollutant emissions during construction in accordance with all applicable laws, regulations, and building codes. These measures include:

- Clean Fuel. Ultra-low-sulfur diesel (ULSD) fuel would be used exclusively for all diesel engines throughout the Project Site.
- Dust Control. To minimize dust emissions from construction activities, a dust control plan, including a robust watering program, would be required. Under such plans, trucks hauling loose material would be equipped with tight-fitting tailgates and have their loads securely covered prior to leaving the project site; and water sprays would be used for all demolition, excavation, and transfer of soils to ensure that materials are dampened as necessary to minimize the suspension of dust into the air. Stockpiles of loose materials would be watered, stabilized with a chemical suppressing agent, or covered. All measures called for by the sections of DEP's Construction Dust Rules regulating construction-related dust emissions would be required.
- Idling Restriction. In accordance with Section 24-163 of the NYC Administrative Code, the local law restricting unnecessary idling on roadways, truck idling time would be

restricted to 3 minutes except for vehicles that are using their engines to operate a loading, unloading, or processing device (e.g., concrete mixing trucks) or are otherwise required for the proper operation of the engine.

In addition, although the Proposed Project is not subject to Local Law 77 of 2003, it is committed to implementing best available control technology (BAT) as proscribed by Local Law 77 to further reduce air pollutant emissions during construction:

Utilization of Newer Equipment. EPA's Tier 1 through 4 standards for non-road engines regulate the emission of criteria pollutants from new engines, including particulate matter (PM), carbon monoxide (CO), nitrogen oxide (NOx), and hydrocarbons (HC). Diesel-powered non-road construction equipment with a power rating of 50 hp or greater used in construction of the Proposed Project would meet at least the Tier 4 emissions standard to the extent practicable. Overall, the emissions control measures identified above are expected to substantially reduce air pollutant emissions during construction of the Proposed Project, like the emission control programs for the Block 675 East and Two Bridges LSRD projects.

CONCLUSION

As shown above, the construction of the Proposed Project would result in lesser emission intensities than the Block 675 East and Two Bridges LSRD projects. Further, the Proposed Project would include similar emission control measures. While construction of the Proposed Project would result in elevated pollutant emissions at and near construction activities, emissions would be temporary in nature, with construction activities persisting for up to approximately 36 months at the Armory Site and 42 months at the National Guard Site. Emissions sources would move throughout the Project Site during the construction of the Proposed Project; therefore, no single location would experience elevated emissions for the entire duration of construction. Further, most of the construction activities at the Armory Site would occur within the Armory where the walls of the Armory would act as a barrier to the transport of air pollutants. Moreover, measures would be taken to reduce pollutant emissions during construction. For example, a watering program would be implemented to minimize dust emissions from construction activities, and all measures required by the portion of DEP's *Construction Dust Rules* regulating construction-related dust emissions would be strictly followed.

Therefore, since the detailed air quality analyses performed for the Block 675 East and Two Bridges LSRD projects concluded that there would be no significant air quality impacts, and taking into account the reasons stated above, construction of the Proposed Project would not result in any significant adverse construction air quality impacts, and no further analysis is required.

NOISE

Potential impacts on community noise levels during construction could result from the operation of construction equipment and from construction and delivery vehicles traveling to and from the Project Site. Noise levels at a given location are dependent on the type and quantity of construction equipment being operated, the acoustical utilization factor of the equipment (i.e., the percentage of time the equipment is operating), the distance of sensitive receptors from the construction site, and any shielding effects (e.g., from structures such as walls or barriers). Because the location of the construction activities

relative to noise-sensitive receptor locations would vary over the course of the construction period, as would the amount and type of construction equipment, the level of noise experienced at each noise receptor would also vary during this period. The most noise-intensive construction activities would not occur every day or every hour on those days when they would occur. During hours when the loudest pieces of construction equipment are not in use, receptors would experience lower construction noise levels. Construction noise levels would fluctuate during the construction period at each receptor, with the greatest levels of construction noise occurring for limited periods.

SOUND LEVEL DESCRIPTORS

The $L_{eq(1)}$ is the noise descriptor recommended for use in the *CEQR Technical Manual* for vehicular traffic and construction noise impact evaluation and is used to provide an indication of highest expected sound levels. The 1-hour L_{10} is the noise descriptor used in the *CEQR Technical Manual* noise exposure guidelines. The maximum 1-hour equivalent sound level ($L_{eq(1)}$) and maximum 1-hour L_{10} were selected as the noise descriptors used in the construction noise impact evaluation.

CONSTRUCTION ANALYSIS FUNDAMENTALS

Construction activities increase 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 roadways to and from the construction site. The combined effect of each of these noise sources was evaluated.

Noise from the on-site operation of construction equipment at a specific receptor location near a construction site is generally 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 location is a function of the following:

- 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 following:

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

CONSTRUCTION NOISE IMPACT CRITERIA

Chapter 22 of the *CEQR Technical Manual* breaks construction duration into "short-term" and "long-term" and states that construction noise is not likely to require analysis unless it "affects a sensitive receptor over a long period of time." Consequently, the construction noise analysis considers the potential for construction of a project to create high noise levels (the "intensity"), whether construction noise would occur for an extended period of time (the "duration"), and the locations where construction has the potential to increase noise ("receptors") in evaluating potential construction noise effects.

The noise impact criteria described in Chapter 19, Section 410 of the *CEQR Technical Manual* serve as a screening-level threshold for potential construction noise impacts. If construction of a proposed project would not result in any exceedances of these criteria at a given receptor, then that receptor would not have the potential to experience a construction noise impact.

If noise levels during construction would exceed the screening thresholds at a given receptor, the specific intensity and duration of construction noise level increases would be considered further to determine the potential for temporary significant adverse impacts.

CONSTRUCTION NOISE ANALYSIS METHODOLOGY

The construction noise analysis consists of the following:

- Identification of worst-case noise-sensitive receptors (i.e., the noise-sensitive land uses closest to the Project Site that have the greatest potential to experience construction noise impacts).
- Analysis of potential noise impacts from operation of construction equipment at the Project Site over the course of the construction of the Proposed Project. Consistent with the noise impact criteria discussed above, the analysis looks first at the intensity of noise levels during construction at each receptor, then assesses the potential duration of those noise levels, and finally makes a determination of the potential for impact.
- Intensity of construction noise was estimated based on the projected number and type of equipment to simultaneously operate on the Project Site during the various stages of construction. The estimated construction noise levels are based on the equipment noise level and usage factor references included in the *CEQR Technical Manual.*
- Duration of construction noise is assessed based on the planned construction schedule and the expected duration of each construction stage.

NOISE RECEPTOR SITES

As defined in Chapter 19, "Noise," Section 114 of the *CEQR Technical Manual* noise-sensitive receptors include indoor receptors such as residences, hotels, health care facilities, nursing homes, schools, commercial offices, houses of worship, court houses, public meeting facilities, museums, libraries, and theaters. Outdoor sensitive receptors include parks, outdoor theaters, golf courses, zoos, campgrounds, and beaches.

Within the study area, four receptor locations close to the construction site were selected for the construction noise analysis to represent noise-sensitive locations where maximum project effects due to construction noise would be expected. **Table 19-8** lists the noise receptor sites and the associated land uses at these sites. These receptors are shown in **Figure 19-3.** Other receptors farther away from the proposed construction activity would experience lower levels of construction noise due to distance attenuation and shielding from intervening buildings and would therefore have less potential to experience construction noise impacts than the 15 selected receptors shown in **Table 19-8**.

Table 19-8
Noise Receptors by Location and Land Use

Receptor	Address	Block / Lot	Associated Land Use
1	2700 Jerome Avenue	3317 / 7501	Mixed Residential & Commercial
2	25 West 195th Street	3247 / 15	Public Facilities & Institutions
3	2756 Reservoir Avenue	3247 / 70	Public Facilities & Institutions
4	2745 Reservoir Avenue	3248 / 33	Mixed Residential & Commercial
5	2720 Jerome Avenue	3317 / 23	Public Facilities & Institutions
6	2780 Reservoir Avenue	3247 / 70	Public Facilities & Institutions
7	2755 Reservoir Avenue	3249 / 38	Mixed Residential & Commercial
8	2748 Jerome Avenue	3317 / 30	Commercial & Office Buildings
9	1 East Kingsbridge Road	3317 / 6	Commercial & Office Buildings
10	2738 University Avenue	3248 / 96	Residential
11	95 West 195th Street	3249 / 1	Residential
12	50 West Kingsbridge Road	3215 / 34	Commercial & Office Buildings
13	2 West Kingsbridge Road	3202 / 35	Commercial & Office Buildings
14	2641 Jerome Avenue	3202 / 42	Mixed Residential & Commercial
15	2610 Grand Avenue	3205 / 9	Public Facilities & Institutions

ANALYSIS TIME PERIOD SELECTION

The construction noise analysis estimated construction noise levels based on projected activity and equipment usage for various stages of construction of the Proposed Project.

Based on the anticipated construction schedule and preliminary construction estimates developed for the Proposed Project, specific time periods during construction were selected for detailed analysis. The periods were selected to capture each major construction stage (e.g., excavation/foundation work, superstructure work, interior fit-out work) for each phase of construction under the Proposed Project. These would be the time periods with the potential to result in the maximum incremental construction noise at nearby receptors. The nine worst-case time periods selected for the detailed construction noise analysis are shown in **Table 19-9**.



Construction Noise Receptor Locations

Table 19-9
Summary of Construction Noise Analysis Periods

Analysis Period	Duration	Construction Activities
July 2026 to December 2026	6 months	Armory Site - Foundation
January 2027 to September 2027	9 months	Armory Site – Construction of new levels within drill hall
October 2027 to December 2027	3 months	Armory Site – Skylight, solar panel, window installation
January 2028 to August 2028	8 months	Armory Site - Skylight, solar panel, window installation, interior fit-out + National Guard Site - Excavation
September 2028 to December 2028	4 months	Armory Site – Interior fit-out + National Guard Site - Foundation
January 2029 to March 2029	2 months	National Guard Site - Foundation
April 2029 to February 2030	11 months	National Guard Site - Superstructure
March 2030 to July 2031	13 months	National Guard Site - Exteriors
August 2031 to November 2031	3 months	National Guard Site - Interiors

MOBILE SOURCE CONSTRUCTION NOISE ANALYSIS

Throughout the construction period, vehicles (construction-related trucks and worker vehicles) would travel near the Project Site. Most of these vehicles are expected to use Jerome Avenue and West/East Kingsbridge Road. These roadways are already heavily trafficked, and the amount of traffic generated by the construction of the Proposed Project would be low compared with existing traffic volumes on major feeder streets in the neighborhood. Additionally, the construction-related vehicles would be distributed among the different routes to and from the Project Site. Accordingly, construction-generated traffic on roadways to and from the Project Site would not have the potential to result in significant adverse construction noise impacts at locations away from the construction work area.

EVALUATION OF CONSTRUCTION NOISE LEVELS

The predicted exterior noise level increments during construction of the Proposed Project at the analyzed receptor sites as shown on **Figure 19-3** were compared with the construction noise impact thresholds described above. The significance of predicted construction noise impacts was determined based on the predicted magnitude and duration of the construction noise at these locations according to the criteria described above. Based on the incremental noise level increase, overall exterior noise levels for each analysis period were also determined.

NOISE REDUCTION MEASURES

Construction noise is regulated by the requirements of the New York City Noise Control Code (also known as Chapter 24 of the Administrative Code of the City of New York, or Local Law 113) and DEP's Notice of Adoption of Rules for Citywide Construction Noise Mitigation (also known as Chapter 28). These requirements mandate that specific construction equipment and motor vehicles meet specified noise emission standards; that construction activities be limited to weekdays between the hours of 7:00 AM and 6:00 PM; and that construction materials be handled and transported in such a manner as not to create unnecessary noise. Permits would be required to be obtained, as specified in the New York City Noise Control Code, for weekend and after-hour work if they become necessary. As required under the New York City Noise Control Code, a site-specific noise

mitigation plan for the Proposed Project would be developed and implemented that would include source controls, path controls, and receiver controls.

In terms of source controls (i.e., reducing noise levels at the source or during the most sensitive time periods), the following measures, consistent with typical industry practices and New York City regulations, would be implemented:

- Equipment that meets the sound level standards specified in Subchapter 5 of the New York City Noise Control Code and Table 22-1 of the *CEQR Technical Manual* would be utilized from the start of construction. **Table 19-10** shows the noise levels for typical construction equipment that would be used for construction of the Proposed Project.
- As early in the construction period as logistics allow, 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) to the extent feasible and practicable. Where electrical equipment cannot be used, diesel or gas-powered generators and pumps would be located within buildings to the extent feasible and practicable.
- The construction site would be configured to minimize back-up alarm noise. In addition, all trucks would not be allowed to idle more than 3 minutes at the construction site based upon Title 24, Chapter 1, Subchapter 7, Section 24-163 of the New York City Administrative Code.
- Contractors and subcontractors would be required to properly maintain their equipment and mufflers.

In terms of path controls (e.g., placement of equipment, implementation of barriers or enclosures between equipment and sensitive receptors), the following measures, under New York City regulations, would be implemented:

- Noisy equipment, such as cranes, concrete pumps, concrete trucks, and delivery trucks, would be located away from and shielded from sensitive receptor locations to the extent practicable given site limitations (i.e., receptors on multiple sides).
- Noise barriers constructed from plywood or other materials would be utilized to provide shielding (e.g., the construction sites would have a minimum 8-foot-tall barrier around the perimeter).
- Path noise control measures (i.e., portable noise barriers, panels, enclosures, and acoustical tents) for certain dominant noise equipment as necessary to remain consistent with **Table 19-10**. The details to construct portable noise barriers, enclosures, tents, etc. are shown in DEP's *Rules for Citywide Construction Noise Mitigation.*[1]

[1] As found at http://www.nyc.gov/html/dep/pdf/noise_constr_rule.pdf

Table 19-10
Construction Equipment Noise Emissions in dBA

Equipment List	Typical L_{max} Noise Level at 50 feet[1]
Auger Drill Rig	85
Bar Bender	80
Compressor	80
Concrete Mixer Truck	85
Concrete Pump Truck	82
Concrete Trowel (Walk Behind)	70[2]
Crane	85
Excavator	85
Generator	82
Hoist	75
Impact Pile Driver	95
Jackhammer	85

Notes:
[1] Rules for Citywide Construction Noise Mitigation, Chapter 28, DEP, 2007, except where noted.
[2] Previous project equipment noise certification.

EXISTING NOISE LEVELS

A noise survey was conducted at four locations near the proposed construction work area to represent baseline noise levels. At receptor sites 1 through 3, 20-minute duration noise measurements were conducted during weekday construction work hours in the AM (7:15 AM – 9:15 AM), midday (12:00 PM – 2:00 PM), and Pre-PM peak periods. At receptor site 4, 60-minute duration noise measurements were conducted during weekday construction work hours in the AM (7:15 AM – 9:15 AM) and midday (12:00 PM – 2:00 PM) peak periods. Measurements at all receptor locations were conducted on March 13, 2025.

Noise Survey Results

The results of the measurements of existing noise levels are summarized in **Table 19-11**. Roadway traffic was the dominant noise source at each location.

Table 19-11
Measured Existing Noise Levels (in dBA)

Site	Location	Time Period	L_{eq}	L_{10}
1	West 195th Street between Jerome Avenue and Reservoir Avenue	AM	71.2	74.6
		MD	70.4	73.5
		Pre-PM	69.3	71.2
2	Reservoir Avenue between West 195th Street and West Kingsbridge Road	AM	64.3	67.2
		MD	62.0	65.5
		Pre-PM	63.9	66.4
3	West Kingsbridge Road between Jerome Avenue and Reservoir Avenue	AM	70.5	73.8
		MD	69.7	72.5
		Pre-PM	70.4	73.1
4	Armory Low-Rise Rooftop along Jerome Avenue between West 195th Street and West Kingsbridge Road	AM	77.8	80.5
		MD	75.0	76.1

Notes: Field measurements were performed by AKRF on March 13, 2025.

These measured existing noise levels were used to represent baseline noise levels for the construction noise analysis.

CONSTRUCTION NOISE ANALYSIS RESULTS

The potential noise effects of construction of the Proposed Project were considered by estimating maximum construction noise exposure at the receptors closest to the Project Site. The noise level estimates at all receptors are shown in **Table 19-12**. Construction noise impact locations are shown in **Figure 19-4.**

Table 19-12
Construction Noise Analysis Results in dBA

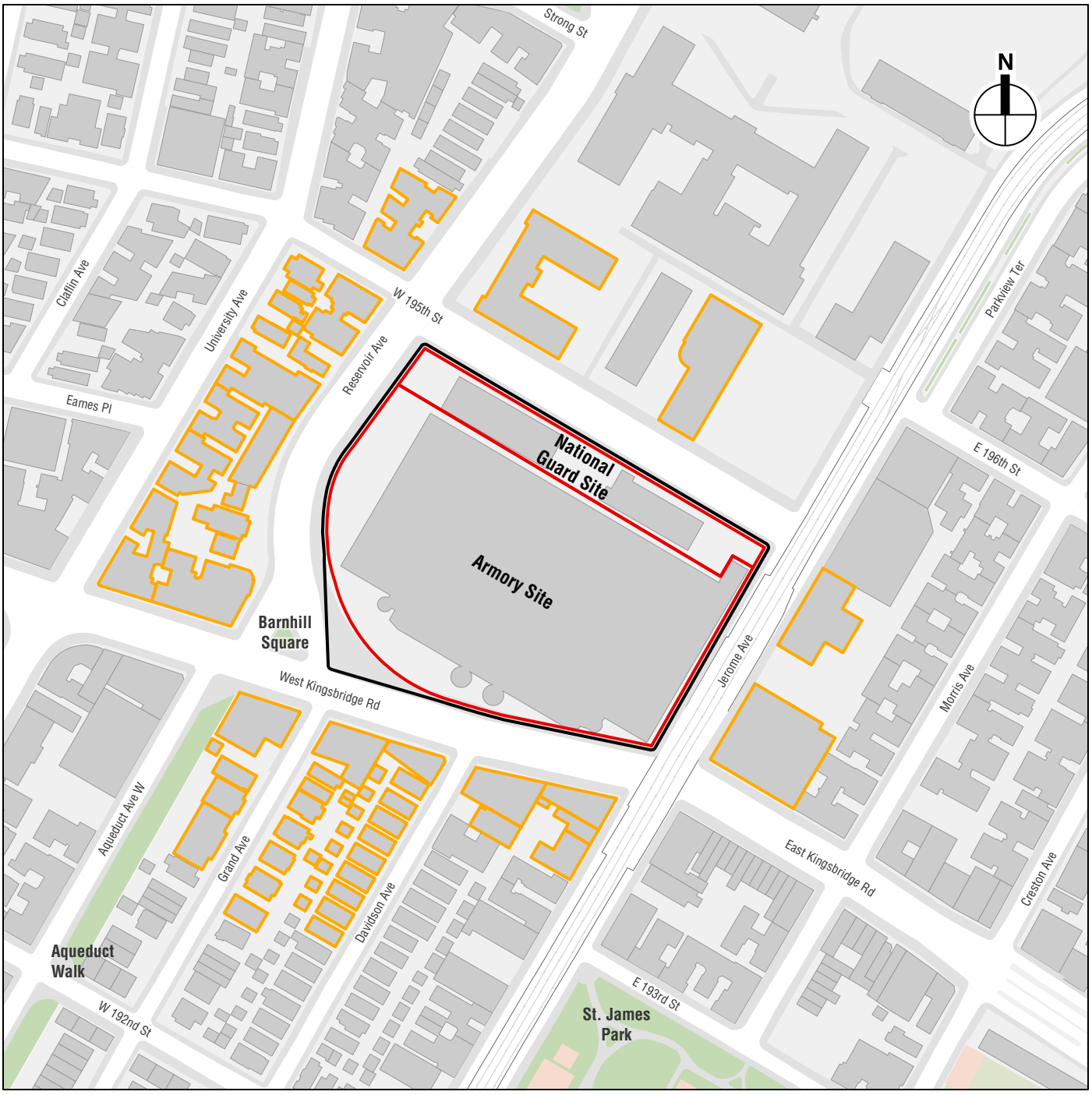
Receptor	Address	Existing L_{eq}	Min Change in L_{eq}	Max Change in L_{eq}	Max Total L_{10}[1]
1	2700 Jerome Avenue	75.0	0.9	9.3	87.3
2	25 West 195th Street	69.3	1.2	16.3	88.6
3	2756 Reservoir Avenue	69.3	1.2	16.3	88.6
4	2745 Reservoir Avenue	69.3	2.7	14.4	86.7
5	2720 Jerome Avenue	75.0	0.6	7.6	85.6
6	2780 Reservoir Avenue	69.3	0.2	1.7	74.0
7	2755 Reservoir Avenue	69.3	0.7	11.3	83.6
8	2748 Jerome Avenue	75.0	0.2	4.1	82.1
9	1 East Kingsbridge Road	75.0	0.2	10.0	88.0
10	2738 University Avenue	62.0	4.0	9.4	74.4
11	95 West 195th Street	69.3	0.3	4.4	76.7
12	50 West Kingsbridge Road	62.0	0.7	15.4	80.4
13	2 West Kingsbridge Road	69.7	0.2	12.7	85.4
14	2641 Jerome Avenue	69.7	0.1	6.7	79.4
15	2610 Grand Avenue	62.0	0.3	9.8	74.8

Note:
[1] L_{10} estimated as L_{eq} + 3 dBA.

The noise levels shown in **Table 19-12** are maximum 1-hour L_{10} noise levels; however, noise levels resulting from construction typically fluctuate throughout the day and from day to day during each construction phase and would not be sustained at these maximum values. Additionally, noise levels expected to result from the construction of the Proposed Project would be comparable to those from typical construction sites in New York City involving a new building with concrete slab floors and foundation. Similarly, potential disruptions to adjacent residences and other receptors from elevated noise levels generated by construction would be expected to be comparable to those that would occur immediately adjacent to a typical New York City construction site during the portions of the construction period when the loudest activities would occur.

At some receptors, construction of the Proposed Project would result in increments that would approach or exceed 10 dBA. The potential for significant adverse impacts at these receptors was determined by evaluating the duration of these increments, as described below.

Receptors at 25 West 195th Street and 2756 Reservoir Avenue—Receptors 2 and 3
Receptors 2 and 3 represent the public-school buildings immediately north of the Project Site at 25 West 195th Street and 2756 Reservoir Avenue. Existing noise levels at these



Construction Noise Impacts

receptors are in the high-60s dBA, which would be considered "marginally acceptable" according to *CEQR Technical Manual* noise exposure criteria.

Construction is predicted to result in noise levels up to the high-80s dBA, resulting in noise level increases up to approximately 16.3 dBA during the most noise-intensive stages of the second phase of construction (i.e., excavations, foundations, and superstructure). At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 25 consecutive months. This prediction of potentially disruptive noise level increments over an extended duration as well as noise levels means construction of the Proposed Project would result in a significant adverse noise impact along these façades.

Receptors along 2691 to 2755 Reservoir Avenue—Receptors 4 and 7
Receptors 4 and 7 represent the residential buildings immediately west of the Project Site at 2691 to 2755 Reservoir Avenue. Existing noise levels at these receptors are in the high-60s dBA, which would be considered "marginally acceptable" according to *CEQR Technical Manual* noise exposure criteria.

Construction is predicted to result in noise levels up to the mid-80s dBA, resulting in noise level increases up to approximately 14.4 dBA during the most noise-intensive stages of the second phase of construction (i.e., excavations, foundations, and superstructure). At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 25 consecutive months. This prediction of potentially disruptive noise level increments over an extended duration as well as noise levels means construction of the Proposed Project would result in a significant adverse noise impact along these façades.

Receptors along University Avenue between West 195th Street and West Kingsbridge Road—Receptor 10
Receptor 10 represents the residential buildings west of the Project Site at 2738 University Avenue. Existing noise levels at these receptors are in the low-60s dBA, which would be considered "marginally acceptable" according to *CEQR Technical Manual* noise exposure criteria.

Construction is predicted to result in noise levels up to the low-70s dBA, resulting in noise level increases up to approximately 9.4 dBA during the most noise-intensive stages of the second phase of construction (i.e., superstructure). At these façades, noise level increments approaching 10 dBA would occur for up to approximately 11 consecutive months. This prediction of potentially disruptive noise level increments over an extended duration as well as noise levels means construction of the Proposed Project would result in a significant adverse noise impact along these façades.

Receptor at 1 East Kingsbridge Road—Receptor 9
Receptor 9 represents the residential building immediately east of the Project Site at 1 East Kingsbridge Road. Existing noise levels at these receptors are in the mid-70s dBA, which would be considered "marginally unacceptable" according to *CEQR Technical Manual* noise exposure criteria.

Construction is predicted to result in noise levels up to the high-80s dBA, resulting in noise level increases up to approximately 10.0 dBA during the most noise-intensive stages of the first phase of construction (i.e., foundation and superstructure). At these façades, noise level increments approaching 10 dBA would occur for up to approximately 15 consecutive months. This prediction of potentially disruptive noise level increments

over an extended duration as well as noise levels means construction of the Proposed Project would result in a significant adverse noise impact along these façades.

Receptor at 2700 Jerome Avenue—Receptor 1

Receptor 1 represents the residential building immediately east of the Project Site at 2700 Jerome Avenue. Existing noise levels at these receptors are in the mid-70s dBA, which would be considered "marginally unacceptable" according to *CEQR Technical Manual* noise exposure criteria.

Construction is predicted to result in noise levels up to the high-80s dBA, resulting in noise level increases up to approximately 9.3 dBA during the most noise-intensive stages of the second phase of construction (i.e., foundations and superstructure). At these façades, noise level increments approaching 10 dBA would occur for up to approximately 17 consecutive months. This building was subject to a requirement for window/wall attenuation and alternate means of ventilation resulting from the 2700 Jerome Avenue EAS (16HPD151X), requiring 31 to 37 dBA attenuation in all areas that would have line of sight to construction associated with the Proposed Project. Even with this level of window/wall attenuation, construction of the Proposed Project would result in interior noise levels at this receptor exceeding the threshold considered acceptable for residential use. This prediction of potentially disruptive noise level increments over an extended duration as well as noise levels means construction of the Proposed Project would result in a significant adverse noise impact along these façades.

Receptors along Grand Avenue and Davidson Avenue—Receptors 12 and 15

Receptors 12 and 15 represent the residential buildings immediately south of the Project Site at 2610 to 2755 Grand Avenue and 2611 to 2650 Davidson Avenue. Existing noise levels at these receptors are in the low-60s dBA, which would be considered "acceptable" according to *CEQR Technical Manual* noise exposure criteria.

Construction is predicted to result in noise levels up to the low-80s dBA, resulting in noise level increases up to approximately 15.4 dBA during the most noise-intensive stages of the first phase of construction (i.e., foundations, and superstructure). At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 15 consecutive months. This prediction of potentially disruptive noise level increments over an extended duration as well as noise levels means construction of the Proposed Project would result in a significant adverse noise impact along these façades.

Receptors along 2 to 50 West Kingsbridge Road—Receptor 13

Receptor 13 represents the commercial and office buildings immediately south of the Project Site from 2 to 50 West Kingsbridge Road. Existing noise levels at these receptors are in the high-60s dBA, which would be considered "marginally acceptable" according to *CEQR Technical Manual* noise exposure criteria.

Construction is predicted to result in noise levels up to the mid-80s dBA, resulting in noise level increases up to approximately 12.7 dBA during the most noise-intensive stages of the first phase of construction (i.e., foundations, and superstructure). At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 15 consecutive months. This prediction of potentially disruptive noise level increments over an extended duration as well as noise levels means construction of the Proposed Project would result in a significant adverse noise impact along these façades.

Receptors Within Kingsbridge Armory

Renovation and adaptive re-use of the Armory would be complete prior to completion of construction at the National Guard Site; as such, noise from construction at the National Guard Site could potentially affect receptors within the Armory. These receptors include the proposed Music Museum and Cultural Center. The Music Museum is located within the Armory with no frontage along the building façade and no line of sight to construction on the National Guard Site (see **Figure 1-6**). The Cultural Center is located along the southern portion of the Armory away from the National Guard Site, also with no line of sight (see **Figure 1-11**). As such, noise from that construction would be attenuated at least 40 dBA at these receptors and not exceed 45 dBA, which is the threshold considered acceptable for a community facility use. Consequently, noise resulting from construction at the National Guard Site would not rise to the level of a significant adverse impact at the community facility receptors in the Armory during the period when the community facility operation and construction would occur simultaneously.

Other Nearby Receptors

At the remaining receptors, including 5, 6, 8, 11, and 14 construction of the Proposed Project is predicted to result in noise level increases that would be no greater than 9 dBA, but would exceed the *CEQR Technical Manual* construction noise screening thresholds for some portion of the construction period. While such increases in noise may be noticeable at times, predicted noise level increments would be moderate and would occur over a very limited duration. According to the *CEQR Technical Manual* noise exposure criteria, noise levels at these receptors would generally be in the "marginally acceptable" through "marginally unacceptable" categories throughout construction (as are existing noise levels). Consequently, construction noise for the Proposed Project would not rise to the level of a significant adverse impact at these receptors.

CONCLUSION

Construction of the Proposed Project is predicted to result in elevated noise levels at the analyzed receptors, which represent the noise-sensitive receptors (e.g. outdoor recreational spaces) that would experience the maximum cumulative construction noise levels. Specifically, at school buildings on West 195th Street between Jerome Avenue and Reservoir Avenue (receptors 2 and 3), residential buildings along Reservoir Avenue between West 195th Street and West Kingsbridge Road (receptor 4), residential building at 2755 Reservoir Avenue (receptor 7), residential buildings along Reservoir Avenue between West 195th Street and West Kingsbridge Road (receptor 10), 2700 Jerome Avenue (receptor 1), 1 East Kingsbridge Road (receptor 9), residential buildings at 2614 to 2755 Grand Avenue and 2611 to 2650 Davidson Avenue (receptors 12 and 15), and commercial office buildings at 2 to 50 West Kingsbridge Road (receptor 13), construction is predicted to result in potential temporary significant adverse construction noise impacts, i.e., noticeable and potentially intrusive noise level increases and total noise levels that would be considered "clearly unacceptable."

At other receptors, construction of the Proposed Project would, for some portion of the construction period, result in noise level increases that would be perceptible. However, at these receptors, maximum noise level increases would not be considered objectionable and would therefore not rise to the level of a significant impact according to the impact criteria described above. Further, construction would comply with *New York City Noise Control Code* regulations. Per *New York City Noise Control Code* regulations,

the Proposed Project would be required to prepare a Construction Noise Mitigation Plan, which may identify more control measures that would further reduce construction noise levels. Additional refinements to the construction noise analysis to be conducted between the Draft and Final EIS, including detailed modeling of additional analysis time periods and existing condition noise levels, may result in elimination of predicted significant adverse construction noise impacts at some receptors.

VIBRATION

INTRODUCTION

Construction activities in general have the potential to result in vibration levels that may cause structural or architectural damage, and/or annoyance or interference with vibration-sensitive activities. Vibratory levels at a given "receiver," are a function of the source strength (which 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 building construction of the receiver. 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. Except in the case of fragile and possibly historically significant structures or buildings, construction activities generally 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 quantify potential vibration impacts of construction activities on structures and residences near the Project 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 as specified in the *DOB TPPN #10/88*. For non-fragile buildings, vibration levels between 0.5 inches/second and 2.0 inches/second would typically 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 75 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:

$$PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$$

where: PPV_{equip} is the peak particle velocity in in/sec of the equipment at the receiver location;

PPV_{ref} 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:

$$L_v(D) = L_v(ref) – 30\log(D/25)$$

where: $L_v(D)$ 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.

Table 19-13 shows vibration source levels for typical construction equipment.

Table 19-13
Vibration Source Levels for Construction Equipment (dBA)

Equipment	PPV_{ref} (in/sec)	Approximate L_{vf} (ref) (VdB)
Caisson drill	0.089	87
Source: FTA Transit Noise and Vibration Impact Assessment (2018)		

CONSTRUCTION VIBRATION ANALYSIS RESULTS

The building of most concern regarding the potential for structural or architectural damage due to vibration is the existing Armory building. To avoid construction-related adverse physical effects on the Armory itself, a CPP would be developed and implemented in coordination with OPRHP/SHPO and LPC. Vibration levels when equipment is operating at least 8 feet from the building would be less than 0.50 in/sec, which is considered acceptable for a historic building or structure.

Vibration monitoring would be required for the Armory to ensure vibration does not exceed the acceptable limit as it is a historic structure within 90 feet of the work areas. If the monitoring indicates vibration levels greater than 0.5 in/sec, work would be discontinued and would be allowed to resume only when an investigation has determined that work can continue without potential damage as a result of altered means/methods or other protection measures. At all other locations, the distance between construction equipment and receiving buildings or structures is large enough to avoid vibratory levels that would approach the levels that would have the potential to result in architectural or structural damage.

The equipment that would have the most potential for producing potential vibration levels that would be perceptible and annoying (i.e., at levels that exceed the 75 VdB limit) is the hoe ram. It would have the potential to produce perceptible vibration levels exceeding 75 VdB at receptor locations within approximately 65 feet, depending on soil conditions. 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. Consequently, significant adverse vibration impacts would not result from construction of the Proposed Project.

OTHER TECHNICAL AREAS

LAND USE AND NEIGHBORHOOD CHARACTER

Construction activities would affect land use on the Project Site, but would not affect land use conditions and patterns outside of the Project Site. As is typical with construction projects, during periods of peak activity, there would be some disruption to nearby areas. There would be construction trucks and construction workers coming to the Project Site as well as trucks and other vehicles backing up, loading, and unloading. These disruptions would have limited effects on land uses in the larger study area, as most construction would take place within the Project Site. Overall, the temporary and localized nature of construction would not result in any significant adverse impacts on local land use patterns of the nearby area.

Construction would adhere to the provisions of the New York City Building Code and other applicable regulations. In addition, throughout the construction period, measures would be implemented to control air quality, noise, and vibration within the construction areas. For example, as discussed above, under “Air Quality,” a mandatory emissions reduction program would be implemented for the Proposed Project to minimize the air quality effects of construction on the surrounding community. Measures would include, to the extent practicable, dust suppression (e.g., a watering program), idling restrictions, use of ULSD fuel for construction vehicles, diesel equipment reduction, use of newer equipment, and best available technologies. As discussed under “Noise and Vibration,” a number of measures would be implemented during construction to reduce potential noise effects, including the erection of construction fencing, location of noisy equipment away from sensitive receptor locations where practicable, early electrification, idling restrictions, and proper maintenance of equipment.

During construction, the Project Site and the immediately surrounding area would be subject to additional traffic from construction trucks and worker vehicles and partial sidewalk and lane closures. In addition, staging activities, temporary sidewalks, construction fencing, and construction equipment and building superstructure would be visible to pedestrians in the immediate vicinity of the Project Site. However, the effects would be localized, confined largely to streets surrounding the Project Site, and no immediate area would experience the effects of the Proposed Project’s construction activities for the full project construction duration. MPT plans would be developed for any temporary sidewalk, lane, and/or street closures and traffic improvement measures as described in Chapter 22, “Mitigation,” would ameliorate traffic issues. Fencing would be erected to reduce potentially undesirable views of construction areas, to buffer noise emitted from construction activities, and to protect the safety of pedestrians during construction. Access to surrounding businesses would be maintained throughout the duration of the construction period. Therefore, although there is the potential for adverse effects during construction, these effects would be temporary and localized and would not result in significant impacts to neighborhood character.

SOCIOECONOMIC CONDITIONS

Construction activities could temporarily affect pedestrian and vehicular access to businesses near the Project Site. However, the temporary lane and/or sidewalk closures needed to accommodate construction of the Proposed Project are not expected to

obstruct entrances to any existing businesses, and businesses are not expected to be significantly affected by any temporary reductions in the amount of pedestrian foot traffic or vehicular delays that could occur as a result of construction activities. MPT plans would be developed and implemented to ensure that access to existing businesses near the Project Site (i.e., the local retail corridor along West and East Kingsbridge Road and Jerome Avenue) would be maintained throughout the construction period.

Construction would create direct benefits resulting from expenditures on labor, materials, and services, and indirect benefits near the Project Site created by expenditures by material suppliers, construction workers, and other employees involved in the construction activity. Construction also would contribute to increased tax revenues for the City and state, including those from personal income taxes. Therefore, construction activities associated with the Proposed Project would not result in any significant adverse impacts on socioeconomic conditions.

COMMUNITY FACILITIES

While construction of the Proposed Project would result in temporary increases in traffic during the construction period, access to and from any community facilities in the area, including P.S. 86, P.S. 340, and Walton High School, located immediately north of the Project Site across West 195th Street, would not be affected during the construction period. In addition, the Project Site would be surrounded by construction fencing and barriers that would limit the effects of construction on nearby facilities. At limited times, outdoor construction activities may be perceptible to the schools and their associated outdoor spaces and athletic fields located north of the Project Site. In addition, the majority of activities would occur either inside the Armory or the enclosed new building (for interior finishes and punch list work) at the National Gurad Site where the walls would provide shielding for construction noise. Construction workers would not place any burden on public schools and would have minimal, if any, demands on libraries, childcare facilities, and health care. In addition, construction of the Proposed Project would not materially affect emergency response times.

OPEN SPACE

There are no publicly accessible open spaces within the Project Site, and no open space resources would be used for staging or other construction activities. The nearest open space is the Barnhill Square, which is located across Reservoir Avenue, approximately 75 feet southwest of the Project Site. At limited times, outdoor construction activities may generate noise that could impair the enjoyment of any nearby open space users, but such noise effects would be temporary. Further, given the intervening traffic on Reservoir Avenue and the construction fences around the Project Site, the noise increases may not be perceptible to open space users at Barnhill Square. Construction of the Proposed Project would not limit access to open space resources in the vicinity of the Project Site. Therefore, construction of the Proposed Project would not result in significant adverse impacts on open space.

HISTORIC AND CULTURAL RESOURCES

A detailed assessment of potential impacts on historic and cultural resources is described in Chapter 7, “Historic and Cultural Resources.”

Archaeological Resources

As part of an earlier, separate environmental assessment of the Armory Site, in a letter dated August 21, 2008, LPC determined that the Armory Site has no archaeological significance (see **Appendix B**). In comments dated October 9, 2024, LPC determined that the Project Site (the Armory Site and the sNational Guard Site) has no archaeological significance (see **Appendix B**). Therefore, the Proposed Project would not result in significant adverse impacts on archaeological resources during construction.

Architectural Resources

The Proposed Project would not result in significant adverse direct impacts to historic and cultural resources with the preparation and implementation of a CPP to avoid inadvertent construction-related impacts (including ground-borne vibration, falling debris, and accidental damage) associated with the construction of the Proposed Project to the Armory itself. There are no other known architectural resources within 90 feet of the Project Site.

HAZARDOUS AND CONTAMINATED MATERIALS

A detailed assessment of the potential risks related to construction with respect to any hazardous materials is described in Chapter 9, "Hazardous Materials." The potential for significant adverse impacts would be avoided by following these requirements:

- Based on the contamination present (identified by prior investigations on the Project Site, references for which were provided in AKRF's Phase I ESA) an (E) Designation for hazardous materials (E-850) will be placed on the Project Site (Block 3247, Lots 2 and 10). With this (E) designation in place, construction would be conducted under the oversight from the Mayor's Office of Environmental Remediation (OER), which would ensure that remediation of any hazardous materials is conducted following OER-approved work plans, and that construction proceeds with a site-specific Construction Health and Safety Plan (CHASP).
- Additional ACM testing of materials to be disturbed by renovations, as warranted. Prior to demolition, an ACM survey within the National Guard and Armory buildings, and other previously untested structures would be conducted. Any identified ACM would be removed prior to the renovation or demolition activities at the Project Site.
- Performing any demolition activities with the potential to disturb lead-based paint (LBP) materials in accordance with the applicable regulatory requirements.
- Disposing of affected suspect mercury-containing or suspect PCB-containing equipment affected by the Proposed Project in accordance with applicable regulatory requirements. Additional PCB sampling may be necessary in the Armory and National Guard buildings for identification and delineation purposes.
- Removing and properly disposing of soil, debris, and/or dust containing elevated lead levels from the rifle and pistol ranges on the Armory Site in accordance with applicable regulations. Additional sampling/surveying may be warranted to quantify affected areas/materials.
- Removing and properly disposing of known petroleum tanks and 55-gallon drums in accordance with applicable regulations. This may require testing for handling and disposal purposes of any of the tank and drum contents. If any unforeseen

aboveground or underground storage tanks (ASTs/USTs) are encountered, removing the tanks and any associated contamination in accordance with NYSDEC regulations.

- Evaluating all deteriorating mechanical equipment in the Armory building and mechanical equipment on the National Guard Site slated for demolition/removal to determine if they contain any fluids, including petroleum and/or hazardous substances, and properly disposing of them.
- Transporting material leaving the Project Site for off-site disposal in accordance with all applicable requirements covering licensing of haulers and trucks, placarding, truck routes, manifesting, etc.
- If dewatering activities are required, conducting them in accordance with local requirements for discharge to sanitary/combined sewers. Pretreatment would be performed as necessary to meet DEP requirements.

With the implementation of these procedures, no significant adverse impacts related to hazardous materials would result from the Proposed Project.

WATER AND SEWER INFRASTRUCTURE

A detailed assessment of potential impacts on water and sewer infrastructure is described in Chapter 10, “Water and Sewer Infrastructure.”

Infrastructure activities at the Project Site would include utility connections to existing water, sewer, electric, gas, and telecommunications. These activities would be coordinated with DEP, Con Edison, or the appropriate private utility company to ensure that service to customers in nearby areas is not disrupted. All utility lines would be located either in the street bed or within the below-grade space. Residents and workers in nearby buildings are not expected to experience substantial disruptions to water supply or wastewater removal. Any disruption to service that may occur when new equipment (e.g., a transformer, or a sewer or water line) is put into operation is expected to be very short-term (i.e., hours). Therefore, the construction of the Proposed Project would not cause any significant adverse impacts to nearby users of these services. ✷