Chapter 17: Construction

A. INTRODUCTION

The co-Applicants, the New York City Educational Construction Fund (ECF) and 240 Nassau Street Holdings, LLC, are seeking zoning approvals, including zoning map and text amendments, a special permit, and other City and State approvals and potential future U.S. Department of Housing and Urban Development (HUD) actions (the "Proposed Actions"), to facilitate the construction of a proposed mixed-use development on Block 110, Lot 25 and Block 111, Lot 1 (the "Project Site") in Downtown Brooklyn, Community District (CD) 2. The proposed development would include four new buildings totaling approximately 1.7 million gross square feet (gsf), including public school facilities; residential, retail, and community facility space; cultural center space; and open space (the "Proposed Project").

The Proposed Actions include the transfer, reallocation, and lease of property among 240 Nassau Street Holdings, LLC, ECF, and the City of New York to allow for the Proposed Project and ECF financing and discretionary zoning approvals from the New York City Planning Commission (CPC) and New York City Council. A detailed description of the Proposed Project and the approvals needed to facilitate the Proposed Project is presented in Chapter 1, "Project Description."

Building 1, located midblock on the south side of Nassau Street, would be a 63-story, mixed-use building that would have a height of approximately 718 feet (738 feet at top of bulkhead). Building 2 would be an eight-story community facility and commercial building located on the corner of Nassau and Navy Streets. It would rise to a maximum height of approximately 150 feet, inclusive of the bulkhead. Building 3 would be a 73-story, mixed-use residential and commercial building located at the corner of Navy and Concord Streets. The building would rise to a height of approximately 820 feet (840 feet at top of bulkhead). Building 4 would be an 18-story, mixed-use residential and community facility building on Concord Street, located midblock and adjacent to Golconda Playground. It would have a height of approximately 235 feet (265 feet including bulkhead).

This chapter assesses the potential effects associated with construction activities. The city, state, and federal regulations that govern construction are described below and are followed by the anticipated construction schedule, description of activities likely to occur during construction, and the measures that would be implemented to minimize the effects of construction. Construction of the Proposed Project would begin in 2028 and would be complete in 2033, over a period of approximately six years.

PRINCIPAL CONCLUSIONS

Construction associated with the Proposed Project would result in temporary disruptions in the surrounding area. As described below, the Proposed Actions would result in significant

adverse impacts to construction transportation (traffic and pedestrians) and noise. Findings specific to each of the key technical areas are summarized below.

TRANSPORTATION

Potential transportation-related impacts were assessed for two separate construction sequences. The first construction sequence would occur during the construction of Buildings 1 and 2, and the second construction sequence would occur during the construction of Buildings 3 and 4. During the first construction sequence, construction worker and truck trips supporting the construction of Buildings 1 and 2 were compared against the No Action condition with the existing public and charter schools still operational, and with the construction of an as-of-right residential development at Building 1. No significant adverse impacts during the first construction sequence were identified for traffic, pedestrians, transit, or parking.

During the second construction sequence, construction worker and truck trips supporting the construction of Buildings 3 and 4 and the operational trips generated by Buildings 1 and 2 were compared against the No Action condition with the existing public and charter schools still operational and the as-of-right residential development at Building 1 also operational. No significant adverse impacts during the second construction sequence were identified for transit or parking. For traffic and pedestrians, the combination of the construction and operational trip increments during the construction peak hours would result in trip increments that would be fewer than those in the operational peak hours. Therefore, the anticipated traffic and pedestrian impacts would be within the envelope of those identified in Chapter 11, "Transportation," and the corresponding mitigation measures identified in Chapter 19, "Mitigation," to mitigate the projected traffic and pedestrian impacts to the extent practicable would be used to address temporary traffic and pedestrian impacts during the second construction sequence.

AIR QUALITY

Measures would be taken to reduce pollutant emissions during construction of the Proposed Project in accordance with all applicable laws, regulations, and building codes. These include the use of ultra-low sulfur diesel (ULSD) fuel, dust suppression measures, idling restrictions, and diesel equipment reduction. In addition, construction of the Proposed Project would use newer equipment (i.e., equipment meeting the U.S. Environmental Protection Agency's [EPA] Tier 4 emission standard) to further reduce air pollutant emissions. With the implementation of these emission reduction measures, the dispersion modeling analysis of construction-related air emissions for both non-road and on-road sources determined that particulate matter ($PM_{2.5}$ and PM_{10}), annual average nitrogen dioxide (NO_2), and carbon monoxide (CO) concentrations would be below their corresponding National Air Quality Ambient Standards (NAAQS) or *de minimis* thresholds, respectively. Therefore, construction of the Proposed Project would not result in significant adverse air quality impacts due to construction sources.

NOISE

Construction under the Proposed Actions is predicted to result in elevated noise levels at several analyzed receptors, which represent the noise-sensitive uses (e.g., residences, schools, outdoor recreational spaces, etc.) that would experience the maximum cumulative construction noise levels. Specifically, at **Table 17-15**, shown later in this chapter,

construction is predicted to result in a temporary significant adverse construction noise impact—noticeable and potentially intrusive noise level increases and total noise levels that would be considered between "marginally unacceptable" and "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 below. 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.

B. GOVERNMENTAL COORDINATION AND OVERSIGHT

Construction oversight involves several city, state, and federal agencies. **Table 17-1** 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, safety netting, and scaffolding. The New York City Department of Environmental Protection (DEP) enforces the New York City Noise Code, reviews and approves construction noise mitigation plans and any needed Remedial Action Plans (RAPs) and Construction Health and Safety Plans (CHASPs), 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)'s Office of Construction Mitigation and Coordination (OCMC) reviews and approves any traffic lane and sidewalk closures. 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 (CPP) and any monitoring measures necessary to prevent damage to historic structures.

Table 17-1
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, RAPs/CHASPs 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
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
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 the operation of bulk petroleum and chemical storage tanks.

At the federal level, 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 state governments. The Occupational Safety and Health Administration (OSHA) sets standards for work site safety and construction equipment.

C. ANTICIPATED CONSTRUCTION SCHEDULE

Table 17-2 presents the anticipated construction schedule for the Proposed Project. Construction of the Proposed Project would begin in 2028 and would be complete in 2033, over a period of approximately six years. Construction of the Proposed Project would begin with abatement and demolition activities at the Project Site, followed by the construction of Buildings 1 and 2. These activities are anticipated to take approximately 45 months to complete. Construction of Buildings 3 and 4 would commence around the time when the exterior work for Buildings 1 and 2 are completed and the activities for Buildings 3 and 4 are anticipated to take approximately 40 months to complete.

Table 17-2
Anticipated Construction Schedule

Construction Task[2]	Buildings 1 and 2			Buildings 3 and 4		
	Start Month	Finish Month	Duration (Months)	Start Month	Finish Month	Duration (Months)
Abatement and Demolition	Month 1	Month 6	6	N/A	N/A	N/A
Excavation/Foundation	Month 5	Month 15	11	Month 33	Month 42	10
Superstructure	Month 15	Month 27	23	Month 42	Month 54	13
Exterior	Month 20	Month 32	13	Month 47	Month 59	13
Fit-out (Rough-In and Interior Work)	Month 21	Month 45	35	Month 49	Month 72	24
Site Work	Month 40	Month 45	6	Month 67	Month 72	6
Total	**Month 1**	**Month 45**	**45**	**Month 33**	**Month 72**	**40**

Source:
[1] Alloy, January 2026.
Note:
[2] Some of the construction tasks are anticipated to overlap.

D. DESCRIPTION OF CONSTRUCTION ACTIVITIES

Prior to the commencement of construction, the work area would typically be prepared for construction, including the installation of public safety measures such as barriers, netting, and signs. The construction areas would be fenced off, worker and truck access points would be established, and existing street trees would be protected.

Construction would first begin with abatement and demolition at the Project Site, followed by construction of Buildings 1 and 2, and finally Buildings 3 and 4. Construction for each of the four proposed buildings would generally consist of the following primary construction stages, which may overlap at certain times: excavation and foundation; superstructure; exterior; fit-out; and site-work. These construction stages, along with abatement and demolition activities at the Project Site, are described in greater detail below.

ABATEMENT AND DEMOLITION

Before the commencement of demolition activities, the existing buildings would be surveyed for asbestos-containing materials (ACM) by a DEP-certified asbestos investigator and if present, those materials would be abated and removed by DOL-licensed contractors in accordance with local, state, and federal requirements. Asbestos abatement is strictly regulated by DEP, DOL, EPA, and OSHA to protect the health and safety of construction workers and nearby residents, workers, and visitors. The buildings would also be surveyed for lead-containing paint (LCP) or painted surfaces that would be assumed to contain lead. Any activities with the potential to disturb LCP would be performed in accordance with the applicable OSHA regulations (including federal OSHA regulation 29 CFR 1926.62—*Lead Exposure in Construction*). In addition, any suspected polychlorinated biphenyls (PCB)-containing equipment that would be disturbed (such as fluorescent light ballasts) would be evaluated prior to disturbance. Unless labeling or test data indicate the contrary, such

equipment would be assumed to contain PCBs, and would be removed and disposed of at properly licensed facilities in accordance with all applicable regulatory requirements.

Prior to demolition, any economically salvageable materials that could be reused would typically be removed. Then the buildings would be demolished using excavators with hoe ram attachments. Demolition activities would also involve the use of loaders, compressors, and generators. Demolition debris would typically be sorted prior to being disposed of at landfills to maximize recycling opportunities.

EXCAVATION AND FOUNDATION

The Proposed Project would require excavation activities for the proposed buildings' cellars and foundations. Excavation work would begin with the installation of walls to contain soil around the excavation area, and excavators would then be used to excavate soil. The soil 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 activities may also involve the use of loaders and generators.

Excavation would be followed by the construction of the foundation and below-grade elements of the proposed buildings. Foundation activities are anticipated to involve the use of drill rigs, compressors, generators, and concrete pumps.

DEWATERING

Water from rain and snow collected in the excavation area during construction would be removed using a dewatering pump. If groundwater dewatering is required, it would be performed in accordance with DEP sewer use requirements.

SUPERSTRUCTURE

The superstructure work would include the frameworks for the proposed buildings, such as beams, slabs, and columns. Construction of the interior structures—or cores—of the buildings would include elevator shafts; vertical risers for mechanical, electrical, and plumbing systems; electrical and mechanical equipment rooms; core stairs; and restroom areas. Tower or mobile cranes would first be brought onto the Project Site during the superstructure task and would be used to lift structural components and other large materials. Superstructure activities may also include the use of compressors, concrete pumps, boom lifts, and a variety of trucks. In addition, temporary construction elevators (hoists) would be used for the vertical movement of workers and materials during superstructure activities.

EXTERIOR

This stage would include the installation of the exterior envelope systems of the proposed buildings. The exterior units would either be transported via a hoist to the appropriate floors for installation or lift into place by a crane.

FIT-OUT

Activities during the fit-out stage would first include a rough-in period where mechanical, electrical, and plumbing lines are installed within a building's framework, followed by interior work that would include the construction of interior partitions, installation of lighting fixtures and interior finishes (e.g., flooring, painting, etc.), and the continuation of mechanical and

electrical work, such as the installation of elevators and lobby finishes. Final cleanup and touchup of the building and final building systems (e.g., electrical system, fire alarm, plumbing, etc.) testing and inspections would be part of this stage of construction. Equipment used during interiors would include a hoist and a variety of small handheld tools.

Interiors 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 buildings with the façades substantially complete and the proposed buildings enclosed.

SITE WORK

Site work activities would include landscaping and installation of pavement, curbing, and sidewalks. Equipment used for sitework activities typically includes a loader, grader, and asphalt paver.

E. GENERAL CONSTRUCTION PRACTICES

This section describes the construction practices that are likely to be employed during construction, which would be applicable for both the Proposed Project, including hours of work, access, deliveries, staging areas, public safety, and pest 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, night or weekend work may also be required to meet the project construction schedule due to weather delays or other circumstances. Appropriate work permits from DOB and DEP 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 WORK AREAS

During construction, access to the Project 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 on Nassau Street, Navy Street, and Concord Street may need to be narrowed or closed 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.

PUBLIC SAFETY

A variety of measures would be employed to protect public safety during 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 of construction workers.

PEST 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.

F. THE FUTURE WITHOUT THE PROPOSED PROJECT

In the future without the proposed project, the existing schools (P.S. 287, the Dr. Bailey K. Ashford school, and the Community Roots Charter School) on Block 111, Lot 1 would remain; and the Madison Square Boys and Girls Club on Block 110, Lot 25 would be closed. Block 110, Lot 25 will be developed with an as-of-right seven-story, 75-foot-tall market-rate building (110 feet including bulkhead) containing approximately 83,500 gsf of residential space (approximately 84 units) that complies with the current R6 zoning regulations.

G. ENVIRONMENTAL EFFECTS OF PROJECT CONSTRUCTION ACTIVITIES

Similar to many large development projects in New York City, construction can be disruptive to the surrounding area for periods of time. The following analyses describe potential construction impacts with respect to transportation, air quality, noise and vibration, land use and neighborhood character, socioeconomic conditions, community facilities, open space, historic and cultural resources, and hazardous materials.

Table 17-3 shows the estimated average daily number of construction workers and truck deliveries to the Project Site by calendar quarter for all construction activities under the With Action condition.

The peak construction worker vehicle trip generation would occur during the fourth quarter of 2029. The peak construction truck trip generation would occur during the second quarter of 2031. The average number of workers throughout the construction period would be 167 per day with a peak of 325 per day in the fourth quarter of 2029. For truck trips, the average number of trucks would be 15 per day with a peak of 25 per day in the second quarter of 2031.

Table 17-3
Average Number of Daily Workers and Trucks by Quarter – With Action Condition

Year	2028				2029				2030			
Quarter	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Workers	23	37	40	50	40	150	232	**325**	235	108	150	205
Trucks	3	16	15	15	20	15	19	**23**	23	8	12	19
Year	2031				2032				2033			
Quarter	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Workers	225	225	237	215	**308**	235	125	162	175	175	175	87
Trucks	19	25	20	18	**23**	23	8	8	4	4	5	5

Year / Quarter	Peak	Average
Workers	325	167
Trucks	25	15

Source: Alloy, January 2026.
Note: Bold text indicates the combined peak quarter for construction worker auto and truck trips for the first and second construction sequences of the With Action condition.

Table 17-4 shows the estimated average daily number of construction workers and truck deliveries to the Project Site by calendar quarter for all construction activities under the No Action condition. For the No Action condition, the combined peak construction worker vehicle and truck trip generation would occur during the fourth quarter of 2029. The average number of workers throughout the construction period would be 34 per day with a peak of 150 per day in the fourth quarter of 2029. For truck trips, the average number of trucks would be 5 per day with a peak of 8 per day in the fourth quarter of 2029.

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, and hazardous materials.

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 construction worker and truck delivery 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.

Table 17-4
Average Number of Daily Workers and Trucks by Quarter – No Action Condition

Year	2028				2029				2030			
Quarter	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Workers	20	37	40	25	92	90	98	**150**	137	102	33	0
Trucks	3	16	15	20	18	20	11	**8**	8	5	3	0
Year	2031				2032				2033			
Quarter	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Workers	0	0	0	0	0	0	0	0	0	0	0	0
Trucks	0	0	0	0	0	0	0	0	0	0	0	0

Year / Quarter	Peak	Average
Workers	150	34
Trucks	8	5

Source: Alloy, January 2026.
Note: Bold text indicates the combined peak quarter for construction worker auto and truck trips.

TRAFFIC

As detailed below, the most active construction activities of the Proposed Project are expected to occur during the fourth quarter of 2029 (which would constitute the first construction sequence), when Buildings 1 and 2 would be constructed, and during the first quarter of 2032 (which would constitute the second construction sequence), when Buildings 3 and 4 would be constructed while Buildings 1 and 2 are already operational.

During the first construction sequence, the With Action condition consists of the projected construction workers and trucks for the fourth quarter of 2029 as shown in **Table 17-3**, with the existing community center and primary/charter schools no longer operational**.** These trips would be compared against a No Action condition that consists of the primary/charter schools still operational and the construction of the as-of-right residential development on the site of the existing community center (Building 1).

During the second construction sequence, the With Action condition consists of the projected construction workers and trucks for the first quarter of 2032 as shown in **Table 17-3**, with the various land uses in Buildings 1 and 2 already operational. These trips would be compared against a No Action condition that consists of the primary/charter schools still operational and the as-of-right residential development on Building 1 already operational.

Construction Trip Generation

As discussed above, the Proposed Project would be developed from 2028 to 2033 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 latest available dataset for construction and excavation occupations, the modal split profile is as follows.

- Auto – 56 percent (1.21 vehicle occupancy);
- Taxi – 0 percent;
- Subway – 32 percent;
- Railroad – 4 percent;
- Bus – 6 percent; and
- Walk – 2 percent.

Daily Workforce and Truck Deliveries

As shown above in **Table 17-3**, the construction of the Proposed Project would generate the highest amount of combined daily activities in the fourth quarter of 2029 with estimated averages of 325 workers and 23 truck deliveries per day, which would occur during the first construction sequence; during the second construction sequence in the first quarter of 2032, there would be 308 workers and 23 truck deliveries per day.

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”). Furthermore, in accordance with the *CEQR Technical Manual*, each truck is assumed to equal 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 90 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 above arrival and departure temporal distributions are summarized in **Table 17-5**. Correspondingly, the peak construction hourly trip projections for both construction sequences are presented in **Table 17-6**.

Table 17-5
Construction Worker and Truck Trip Temporal Distributions

	Auto/Taxi In	Auto/Taxi Out	Truck In	Truck Out
6 AM – 7 AM	90%	0%	25%	25%
7 AM – 8 AM	10%	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%	90%	5%	5%
4 PM – 5 PM	0%	5%	0%	0%
Daily Total	**100%**	**100%**	**100%**	**100%**

Table 17-6
With Action Condition Construction Vehicle Trip Projections

	Auto Trips			Taxi Trips			Truck Trips			Total (in PCEs)		
Hour	**In**	**Out**	**Total**	**In**	**Out**	**Total**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
First Construction Sequence (2029 Q4)												
6 AM – 7 AM	135	0	135	0	0	0	6	6	12	147	12	159
7 AM – 8 AM	16	0	16	0	0	0	3	3	6	22	6	28
8 AM – 9 AM	0	0	0	0	0	0	2	2	4	4	4	8
9 AM – 10 AM	0	0	0	0	0	0	2	2	4	4	4	8
10 AM – 11 AM	0	0	0	0	0	0	2	2	4	4	4	8
11 AM – 12 PM	0	0	0	0	0	0	2	2	4	4	4	8
12 PM – 1 PM	0	0	0	0	0	0	2	2	4	4	4	8
1 PM – 2 PM	0	0	0	0	0	0	1	1	2	2	2	4
2 PM – 3 PM	0	8	8	0	0	0	2	2	4	4	12	16
3 PM – 4 PM	0	135	135	0	0	0	1	1	2	2	137	139
4 PM – 5 PM	0	8	8	0	0	0	0	0	0	0	8	8
Daily Total	151	151	302	0	0	0	23	23	46	197	197	394
Second Construction Sequence (2032 Q1)												
6 AM – 7 AM	128	0	128	0	0	0	6	6	12	140	12	152
7 AM – 8 AM	15	0	15	0	0	0	3	3	6	21	6	27
8 AM – 9 AM	0	0	0	0	0	0	2	2	4	4	4	8
9 AM – 10 AM	0	0	0	0	0	0	2	2	4	4	4	8
10 AM – 11 AM	0	0	0	0	0	0	2	2	4	4	4	8
11 AM – 12 PM	0	0	0	0	0	0	2	2	4	4	4	8
12 PM – 1 PM	0	0	0	0	0	0	2	2	4	4	4	8
1 PM – 2 PM	0	0	0	0	0	0	1	1	2	2	2	4
2 PM – 3 PM	0	8	8	0	0	0	2	2	4	4	12	16
3 PM – 4 PM	0	128	128	0	0	0	1	1	2	2	130	132
4 PM – 5 PM	0	7	7	0	0	0	0	0	0	0	7	7

Table 17-6
With Action Condition Construction Vehicle Trip Projections

Hour	Auto Trips			Taxi Trips			Truck Trips			Total (in PCEs)		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Daily Total	143	143	286	0	0	0	23	23	46	189	189	378

Note: 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 159 PCEs between 6:00 AM and 7:00 AM and 139 PCEs between 3:00 PM and 4:00 PM during the first construction sequence, and would result in 152 PCEs between 6:00 AM and 7:00 AM and 132 PCEs between 3:00 PM and 4:00 PM during the second construction sequence.

Table 17-7 shows the peak construction trip projections for the No Action condition. The differences in peak construction trips between the With Action and the No Action conditions for the first and second construction sequences are presented in **Table 17-8 and 17-9,** respectively.

Table 17-7
No Action Condition Construction Vehicle Trip Projections

Hour	Auto Trips			Taxi Trips			Truck Trips			Total (in PCEs)		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
6 AM – 7 AM	62	0	62	0	0	0	2	2	4	66	4	70
7 AM – 8 AM	8	0	8	0	0	0	1	1	2	10	2	12
8 AM – 9 AM	0	0	0	0	0	0	1	1	2	2	2	4
9 AM – 10 AM	0	0	0	0	0	0	1	1	2	2	2	4
10 AM – 11 AM	0	0	0	0	0	0	1	1	2	2	2	4
11 AM – 12 PM	0	0	0	0	0	0	1	1	2	2	2	4
12 PM – 1 PM	0	0	0	0	0	0	1	1	2	2	2	4
1 PM – 2 PM	0	0	0	0	0	0	0	0	0	0	0	0
2 PM – 3 PM	0	4	4	0	0	0	0	0	0	0	4	4
3 PM – 4 PM	0	62	62	0	0	0	0	0	0	0	62	62
4 PM – 5 PM	0	4	4	0	0	0	0	0	0	0	4	4
Daily Total	70	70	140	0	0	0	8	8	16	86	86	172

Note: 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).

According to **Table 17-8**, the combination of the projected construction trip increments and operational trip increments that overlap with the peak construction quarter in the first construction sequence (2029 Q4) would be 27 and 23 incremental vehicle trips per hour in the weekday AM construction peak hours, respectively. Since this is below the *CEQR Technical Manual* Level 1 traffic screening threshold of 50 incremental vehicle trips per hour (see Chapter 11, “Transportation”) in both the weekday AM and PM construction peak hours,

Level 2 traffic screening is not warranted, and no significant adverse traffic impacts are projected during the first construction sequence.

Table 17-8
No Action vs. With Action Construction Vehicle Trip Comparisons
First Construction Sequence (2029 Q4)

Scenario	Auto/Taxi Trips			Truck Trips			Total*		
	In	Out	Total	In	Out	Total	In	Out	Total
Peak Hour (6:00 AM to 7:00 AM)									
With Action Construction (WA)	135	0	135	6	6	12	141	6	147
No Action Construction (NA)	62	0	62	2	2	4	64	2	66
No Action – Other Land Uses (NA)	31	21	52	1	1	2	32	22	54
Trip Differences									
WA minus NA	42	-21	21	3	3	6	45	-18	27
Peak Hour (3:00 PM to 4:00 PM)									
With Action Construction (WA)	0	135	135	1	1	2	1	136	137
No Action Construction (NA)	0	62	62	0	0	0	0	62	62
No Action – Other Land Uses (NA)	21	31	52	0	0	0	21	31	52
Trip Differences									
WA minus NA	-21	43	22	1	1	2	-20	43	23

Note: *Non-PCE vehicle trips estimates used to be consistent with vehicle trip estimates of other land uses on Project Site

According to **Table 17-9**, the combination of projected construction trip increments and operational trip increments that overlap with the peak construction quarter in the second construction sequence (2032 Q1) would consist of 263 and 297 incremental vehicle trips in the weekday AM and PM construction peak hours, respectively. Although both peak hours exceed the *CEQR Technical Manual* Level 1 traffic screening threshold of 50 incremental vehicle trips per hour, the transportation analysis framework of this Draft Environmental Impact Statement (DEIS) compares peak construction traffic for the second construction sequence (projected to occur in 2032) to traffic that would be generated by the completed, occupied Proposed Project (the “operational” project in 2033). The incremental vehicle trips in the weekday AM and PM operational peak hours would be 319 and 359 incremental vehicle trips per hour, respectively. Since the incremental vehicle trips in the construction peak hours in 2032 would be fewer than the incremental vehicle trips in the operational peak hours in 2033, the anticipated traffic impacts during the second construction sequence would be within the envelope of traffic impacts identified for the Proposed Project (see Chapter 11, “Transportation”). Correspondingly, mitigation measures such as signal timing shifts (see Chapter 19, “Mitigation”) that would mitigate those traffic impacts to the extent practicable would also be used for addressing temporary traffic impacts during construction.

Table 17-9
No Action vs. With Action Construction Vehicle Trip Comparisons
Second Construction Sequence (2032 Q1)

Scenario	Auto/Taxi Trips			Truck Trips			Total*		
	In	Out	Total	In	Out	Total	In	Out	Total
Peak Hour (6:00 AM to 7:00 AM)									
With Action Construction (WA)	128	0	128	6	6	12	134	6	140
With Action School (WA)	84	67	151	1	1	2	85	68	153
With Action Buildings 1 and 2 Other Land Uses (WA)	9	15	24	1	1	2	10	16	26
No Action Construction (NA)	0	0	0	0	0	0	0	0	0
No Action School (NA)	31	21	52	1	1	2	32	22	54
No Action Other Land Uses (WA)	1	1	2	0	0	0	1	1	2
Trip Differences									
WA minus NA	188	60	245	7	7	14	196	67	263
Peak Hour (3:00 PM to 4:00 PM)									
With Action Construction (WA)	0	128	128	1	1	2	1	129	130
With Action School (WA)	67	84	151	0	0	0	67	84	151
With Action Buildings 1 and 2 Other Land Uses (WA)	41	33	74	0	0	0	41	33	74
No Action Construction (NA)	0	0	0	0	0	0	0	0	0
No Action School (NA)	21	31	52	0	0	0	21	31	52
No Action – Other Land Uses (NA)	3	3	6	0	0	0	3	3	6
Trip Differences									
WA minus NA	84	211	295	1	1	2	85	212	297

Note: *Non-PCE vehicle trips estimates used to be consistent with vehicle trip estimates of other land uses on Project Site

Construction of the Proposed Project would also consist of approximately 1,760 and 2,180 incremental pedestrian trips in the weekday AM and PM construction peak hours, respectively, in the second construction sequence (incremental pedestrian trips in the first construction sequence would be negative due to the relocation of the primary and charter schools during construction of Buildings 1 and 2). Although both peak hours for the second construction sequence exceed the *CEQR Technical Manual* Level 1 pedestrian screening threshold of 200 incremental pedestrian trips per hour (see Chapter 11, “Transportation”), the transportation analysis framework of this DEIS compares peak construction pedestrians

for the second construction sequence in 2032 to the pedestrians that would be generated by the completed, occupied Proposed Project in 2033. The incremental pedestrian trips in the weekday AM and PM operational peak hours would be approximately 3,130 and 3,720, respectively. Since the incremental pedestrian trips in the construction peak hours in 2032 would be fewer than the incremental pedestrian trips in the operational peak hours in 2033, the anticipated pedestrian impacts during the second construction sequence would be within the envelope of pedestrian impacts identified for the Proposed Project (see Chapter 11, "Transportation"). Correspondingly, mitigation measures such as signal timing shifts (see Chapter 19, "Mitigation") that would mitigate those pedestrian impacts to the extent practicable would also be used for addressing temporary pedestrian impacts during construction.

Construction of the Proposed Project would also consist of -103 and 16 incremental transit trips (consisting of mostly subway trips) in the weekday AM and PM construction peak hours, respectively, in the second construction sequence (incremental transit trips in the first construction sequence would be negative due to the relocation of the primary and charter schools during construction of Buildings 1 and 2). Since this is below the *CEQR Technical Manual* Level 1 transit screening threshold of 200 incremental subway/rail or bus trips per hour (see Chapter 11, "Transportation") in both the weekday AM and PM construction peak hours, Level 2 transit screening is not warranted, and no significant adverse transit impacts are projected during the first or second construction sequences.

Construction of the Proposed Project would generate a parking demand of 151 spaces in the first construction sequence (2029 Q4) and a parking demand of 143 spaces in the second construction sequence (2032 Q1). Construction workers are expected to seek off-site parking in the surrounding area. As shown in Chapter 11, "Transportation," parking utilization at public parking facilities within ¼ mile of the Project Site is highest during the weekday AM period, with fewer than 800 parking spaces available under existing conditions and with fewer than 600 parking spaces projected to be available under the 2033 No Action condition. However, the projected parking demand generated by the construction of the Proposed Project in both the first and second construction sequences would be accommodated by the available off-street parking spaces within ¼ mile of the Project Site, and construction of the Proposed Project would not result in any parking shortfalls.

AIR QUALITY

Construction of the Proposed Project would require the use of both non-road construction equipment and on-road vehicles. Non-road construction equipment includes equipment operating on-site, such as cranes, loaders, and excavators. On-road vehicles include worker vehicles and construction trucks arriving to and departing from the Project Site as well as operating on-site.

Emissions from non-road construction equipment and on-road vehicles have the potential to affect air quality. In addition, emissions from dust-generating construction activities (i.e., truck loading and unloading operations) also have the potential to affect air quality. A quantitative analysis of the overall combined impact of both non-road and on-road sources of construction-related air emissions, including dust emissions, was performed to determine the potential for significant adverse impacts from these sources of air emissions generated during construction of the Proposed Project.

EMISSION CONTROL MEASURES

During construction of the Proposed Project, all necessary measures would be implemented to ensure adherence to the New York City Air Pollution Control Code to minimize construction-related air and dust emissions. Measures would be taken to reduce air pollutant emissions during construction in accordance with all applicable laws, regulations, and building codes, including:

- Dust Control. To minimize dust emissions from construction activities, a dust control plan including a robust watering program would be required. For example, all trucks hauling loose material would be equipped with tight-fitting tailgates and their loads securely covered prior to leaving the Project Site; and water sprays would be used for all demolition, excavation, and transfer of soils so that materials would be dampened as necessary to avoid the suspension of dust into the air. Stockpiled soils or debris would be watered, stabilized with a chemical suppressing agent, or covered. All measures required by DEP's Construction Dust Rules regulating construction-related dust emissions would be implemented.
- Idling Restriction. In addition to adhering to the local law restricting unnecessary idling on roadways, on-site vehicle idle time would be restricted to three minutes for all equipment and vehicles that are not 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.
- Clean Fuel. ULSD fuel would be used exclusively for all diesel engines throughout the Project Site.
- Diesel Equipment Reduction. In accordance with the New York City Noise Control Code as discussed below, under "Noise," electrically powered equipment would be preferred over diesel-powered and gasoline-powered versions of that equipment to the extent practicable. Equipment that would use grid power in lieu of diesel engines include, but may not be limited to, hoists and small equipment (such as welders).

In addition, the following measure would be implemented to further reduce air pollutant emissions during construction at the Project Site:

- Utilization of Newer Equipment. EPA's Tier 1 through 4 standards for non-road diesel engines regulate the emission of criteria pollutants from new engines, including particulate matter (PM), CO, nitrogen oxides (NOx), and hydrocarbons ("HC"). All diesel-powered non-road construction equipment 50 horsepower ("hp") or greater would meet EPA's Tier 4 emissions standard.

Overall, this emissions reduction program is expected to substantially reduce diesel emissions.

ON-SITE CONSTRUCTION ACTIVITY ASSESSMENT

Analysis Periods

To determine which construction periods constitute the worst-case periods for the pollutants of concern (PM, CO, NO_2), construction-related emissions were calculated for each calendar year throughout the duration of construction on a rolling annual and peak day basis for $PM_{2.5}$. $PM_{2.5}$ was selected for determining the worst-case periods for all pollutants analyzed, because the ratio of predicted $PM_{2.5}$ incremental concentrations to impact criteria is

anticipated to be higher than for other pollutants. Therefore, initial estimates of $PM_{2.5}$ emissions throughout the construction years were used for determining the worst-case periods for analysis of all pollutants. Generally, emission patterns of PM_{10} and NO_2 would follow $PM_{2.5}$ emissions, since they are related to diesel engines by horsepower. CO emissions may have a somewhat different pattern but would also be anticipated to be highest during periods when the most activity would occur.

Based on the resulting multi-year profiles of annual average and peak day average emissions of $PM_{2.5}$ and the proximity of the construction activities to sensitive uses (i.e., residences, public parks) in the area, Month 5 (May 2028) and the 12-month period from Month 4 to Month 15 (April 2028 to March 2029) were identified as worst-case short-term and annual periods of construction, respectively, since the highest project-wide emissions were predicted in these periods. During the worst-case short-term period, abatement and demolition and excavation and foundation activities for Buildings 1 and 2 are anticipated to occur simultaneously. During the worst-case annual period, abatement and demolition, excavation and foundation, and superstructure activities for Buildings 1 and 2 are anticipated to occur simultaneously.

Dispersion of the relevant air pollutants from the construction sites during these periods was analyzed. Broader conclusions regarding potential concentrations during non-peak periods are discussed qualitatively, based on the reasonable worst-case analysis period results.

Engine Emissions

The sizes, types, and number of units of construction equipment was estimated based on the construction activity schedule developed for activities for the Proposed Project. Emission rates for NO_x, CO, PM_{10}, and $PM_{2.5}$ from truck engines was developed using the EPA Motor Vehicle Emission Simulator (MOVES5) emission model. Emission factors for NO_x, CO, PM_{10}, and $PM_{2.5}$ from on-site construction engines were developed using the NONROAD emission module included in the MOVES emission model. The emission factor calculations took into account any emissions reduction measures as described above, under “Emissions Reduction Measures.”

On-Site Dust Emissions

In addition to engine emissions, dust emissions from operations (e.g., excavation and transferring of excavated materials into dump trucks) was calculated based on EPA procedures delineated in AP-42 Table 13.2.3-1. Since construction is required to follow DEP’s *Construction Dust Rules* regarding construction-related dust emissions, a 50 percent reduction in particulate emissions from fugitive dust was conservatively assumed in the calculation (dust control methods, such as wet suppression, would often provide at least a 50 percent reduction in particulate emissions).

Dispersion Modeling

Potential impacts from construction sources were evaluated using a refined dispersion model, the EPA/AMS AERMOD dispersion model. AERMOD is a state-of-the-art dispersion model, applicable to rural and urban areas, flat and complex terrain, surface and elevated releases, and multiple sources (including point, area, and volume sources). AERMOD is a steady-state plume model that incorporates current concepts about flow and dispersion in complex terrain and includes updated treatments of the boundary layer theory, understanding of turbulence and dispersion, and handling of terrain interactions.

Source Simulation

For short-term model scenarios (predicting concentration averages for periods of 24 hours or less), all stationary sources—such as compressors and generators, which are expected to operate in a single location—were simulated as point sources. Other engines, such as excavators and loaders, which would move around the site on any given day, were simulated as area sources. All sources would move around the site throughout the year and were therefore simulated as area sources in the annual analysis.

Meteorological Data

The meteorological data set consists of five consecutive years of meteorological data: surface data collected at LaGuardia Airport National Weather Service Station (2017 to 2021), and concurrent upper air data collected at Brookhaven, New York. The meteorological data provide hour-by-hour wind speeds and directions, stability states, and temperature inversion elevation over the five-year period. These data were processed using the EPA AERMET program to develop data in a format which can be readily processed by the AERMOD model. The land uses around the site where meteorological surface data were available was classified using categories defined in digital United States Geological Survey (USGS) maps.

Background Concentrations

To estimate the maximum expected total pollutant concentrations, the calculated impacts from the emission sources must be added to a background value that accounts for existing pollutant concentrations from other sources. The background levels were based on concentrations monitored at the nearest DEC ambient air monitoring stations.

Receptor Locations

Receptors were placed at locations that would be publicly accessible, at residential, open spaces, and other sensitive uses at both ground level and elevated locations, and at adjacent sidewalk locations.

On-Road Sources

Since emissions from on-site construction equipment and on-road construction-related vehicles may contribute to concentration increments concurrently, on-road emissions adjacent to the construction sites was included with on-site emissions in the dispersion analysis (in addition to on-site truck and non-road engine activity) to address all local project-related emissions cumulatively.

On-Road Vehicle Emissions

Vehicular engine emission factors were computed using the EPA mobile source emissions model, MOVES5. This emissions model is capable of calculating engine emission factors for various vehicle types, based on the fuel type (gasoline, diesel, or natural gas), meteorological conditions, vehicle speeds, vehicle age, roadway type and grade, number of starts per day, engine soak time, inspection and maintenance programs and various other factors that influence emissions. The inputs and use of MOVES incorporate the most current resource available from DEC.

On-Road Dust Emissions

$PM_{2.5}$ emission rates were determined with road dust to account for their impacts. Road dust emission factors were calculated according to the latest procedure delineated by EPA.[1]

CONSTRUCTION AIR QUALITY ANALYSIS RESULTS

Maximum predicted concentrations during the representative worst-case construction periods for the Proposed Project are presented in **Table 17-10**. To estimate the maximum total pollutant NO_2, CO, and PM_{10} concentrations, the modeled concentrations were added to a background value that accounts for existing pollutant concentrations from other nearby sources. As shown in **Table 17-10**, the maximum predicted total concentrations of NO_2, CO, and PM_{10} are below the applicable NAAQS. In addition, the maximum predicted $PM_{2.5}$ concentrations would not exceed the applicable *CEQR Technical Manual de minimis* thresholds in the 24-hour and annual averaging periods.[2] Emissions from the other less intensive construction periods would be less than the emissions during the modeled worst-case periods; therefore, the resulting concentrations from these non-peak periods are expected to be less than the concentrations presented in **Table 17-10**. Therefore, construction of the Proposed Project would not result in significant adverse air quality impacts from construction sources.

Table 17-10
Maximum Pollutant Concentrations

Pollutant	Averaging Period	Units	Maximum Modeled Impact	Background Concentration(1)	Total Concentration	*De minimis*	NAAQS
NO_2	Annual	$\mu g/m^3$	3.9	13.7	17.6	-	100
CO	1-hour	ppm	0.08	1.9	2.0	-	35
	8-hour	ppm	0.02	1.6	1.6	-	9
PM_{10}	24-hour	$\mu g/m^3$	25.8	47.7	73.5	-	150
$PM_{2.5}$	24-hour	$\mu g/m^3$	3.2	20.1	23.3	7.5	35
	Annual—Local	$\mu g/m^3$	0.28	8.0	8.3	0.3	9
	Annual—Neighborhood	$\mu g/m^3$	0.005	-	-	0.1	9

[1] The background levels are based on the most representative concentrations monitored at DEC ambient air monitoring stations (2021 to 2023).

NOISE

Construction under the Proposed Actions has the potential to result in noise impacts generated by the operation of construction equipment on construction sites and construction-related vehicles traveling to and from the Project Site on adjacent roadways. The potential for noise impacts due to the construction under the Proposed Actions is discussed below.

SOUND LEVEL DESCRIPTORS

Chapter 14, "Noise," defines the sound level descriptors. The 1-hour equivalent sound level, or 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

[1] EPA, Compilations of Air Pollutant Emission Factors AP-42, Fifth Edition, Volume I: Stationary Point and Area Sources, Ch. 13.2.1, NC, http://www.epa.gov/ttn/chief/ap42, January 2011.

[2] The *CEQR Technical Manual* 24-hour $PM_{2.5}$ *de minimis* criterion is equal to half the difference between the 24-hour background concentration (20.1 $\mu g/m^3$) and the 24-hour standard (35 $\mu g/m^3$).

of the highest expected sound levels. The 1-hour L_{10}, or the $L_{10(1)}$, is the noise descriptor used in the *CEQR Technical Manual* noise exposure guidelines. The maximum $L_{eq(1)}$ and maximum $L_{10(1)}$ were selected as the noise descriptors used in the construction noise impact evaluation.

CONSTRUCTION NOISE 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 is equivalent to 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 ANALYSIS METHODOLOGY

A detailed modeling analysis was conducted to quantify potential construction noise effects at existing noise receptors (e.g., residences, schools, etc.) near the Project Site as well as at completed and occupied proposed buildings. The construction noise methodology is as follows:

1. *Selected analysis hours for cumulative on-site equipment and construction truck noise analysis.* The 7:00 AM to 8:00 AM hour was selected as the analysis hour because this would be the hour when the highest number of truck trips to and from the construction site would overlap with on-site equipment operation.
2. *Selected receptor locations for cumulative on-site equipment and construction truck noise analysis.* Selected receptors represent open space, residential, commercial office, or other noise-sensitive uses potentially affected by the construction associated with the Proposed Actions during operation of on-site construction equipment and/or along routes taken to and from the Project Site by construction

trucks. Project elements (e.g., buildings, open spaces) that would be completed and occupied while construction under the Proposed Actions is still ongoing were also included in the analysis as receptors.

3. *Established existing noise levels at selected receptors.* Existing noise levels from the operational noise analysis were relied upon for the construction noise analysis as well. A CadnaA model representing the existing conditions (including existing building geometry and existing condition traffic levels) was calibrated based on the measured existing noise levels and used to calculate baseline noise levels at the other noise receptor locations included in the analysis.
4. *Established worst-case noise analysis periods under the anticipated construction schedule.* The worst-case noise analysis periods are the periods during the construction schedule that are expected to have the greatest potential to result in construction noise effects. The selected time periods are described below in the "Analysis Periods" section.
5. *Calculated construction noise levels for each analysis period at each receptor location.* Given the on-site equipment and construction trips expected during each of the analysis periods, and the location of the equipment, which is based on construction logistics diagrams and construction truck and worker vehicle trip assignments, a CadnaA model file including each analysis period was created. All models include each of the construction noise sources during the analysis period and hour, calculation points representing multiple locations on various facades and floors of the associated receptors previously identified, as well as the noise control measures that would be used on the construction site.
6. *Determined total noise levels and noise level increments during construction.* For each analysis period and each noise receptor, the calculated level of construction noise was logarithmically added to the existing noise level to determine the cumulative total noise level. The existing noise level at each receptor was then arithmetically subtracted from the cumulative noise level in each analysis period to determine the noise level increments.
7. *Compared construction noise increments to impact criteria.* For each analysis period and each noise receptor, the predicted noise increments due to construction were compared to CEQR noise impact thresholds and additional incremental noise impact criteria as described below.
8. *Estimated interior noise levels.* At receptors representing interior locations where total exterior noise levels exceed construction noise impact criteria, window/wall attenuation was estimated. Maximum predicted construction noise levels and estimated window/wall attenuation were used to estimate interior noise levels.
9. *Established construction noise duration.* For each receptor, the noise level increments and estimated interior noise levels in each analysis period were evaluated to generate the noise profile over the construction period from the modeled construction noise levels.
10. *Identified potential construction noise impacts.* At each receptor where exceedances of construction noise impact criteria are predicted, a determination was made as to whether the Proposed Actions would have the potential to result in significant adverse construction noise impacts.

NOISE RECEPTOR SITES

A noise-sensitive receptor is defined in Chapter 14, "Noise," Section 114 of the 2025 *City Environmental Quality Review (CEQR) Technical Manual* and includes indoor receptors such as residences, hotels, health care facilities, nursing homes, schools, houses of worship, court houses, public meeting facilities, museums, libraries, theaters, and commercial offices. Outdoor sensitive receptors include parks, outdoor theaters, golf courses, zoos, campgrounds, and beaches.

Within the study area, multiple receptor locations close to the construction areas were selected for the construction noise analysis to represent buildings or noise-sensitive open space locations that have the potential to experience elevated noise as a result of construction. These receptors are located adjacent to planned areas of activity or streets where construction trucks would pass. At some buildings, multiple façades were analyzed as receptors. At high-rise buildings, noise receptors at multiple elevations were analyzed. The receptor sites selected for detailed analysis represent locations where maximum project effects due to construction noise would be expected.

Within the study area, 93 receptor locations were selected for the construction noise analysis. **Table 17-11** lists the noise receptor sites (i.e., sites 1 to 93) and the associated land use at these sites. The noise receptor locations are shown in **Figure 17-1.**

CONSTRUCTION NOISE MODELING

Noise effects from construction activities were evaluated using the CadnaA model, a computerized model developed by DataKustik for noise prediction and assessment. The model can be used for the analysis of a wide variety of noise sources, including stationary sources (e.g., construction equipment, industrial equipment, power generation equipment), transportation sources (e.g., roads, highways, railroad lines, busways, airports), and other specialized sources (e.g., sporting facilities). The model takes into account the reference sound pressure levels of the noise sources at 50 feet, attenuation with distance, ground contours, reflections from structures, attenuation due to shielding, etc. The CadnaA model is based on the acoustic propagation standards promulgated in International Standard ISO 9613-2. This standard is currently under review for adoption by the American National Standards Institute (ANSI) as an American Standard. The CadnaA model is a state-of-the-art tool for noise analysis and is approved for construction noise level prediction by the *CEQR Technical Manual*.

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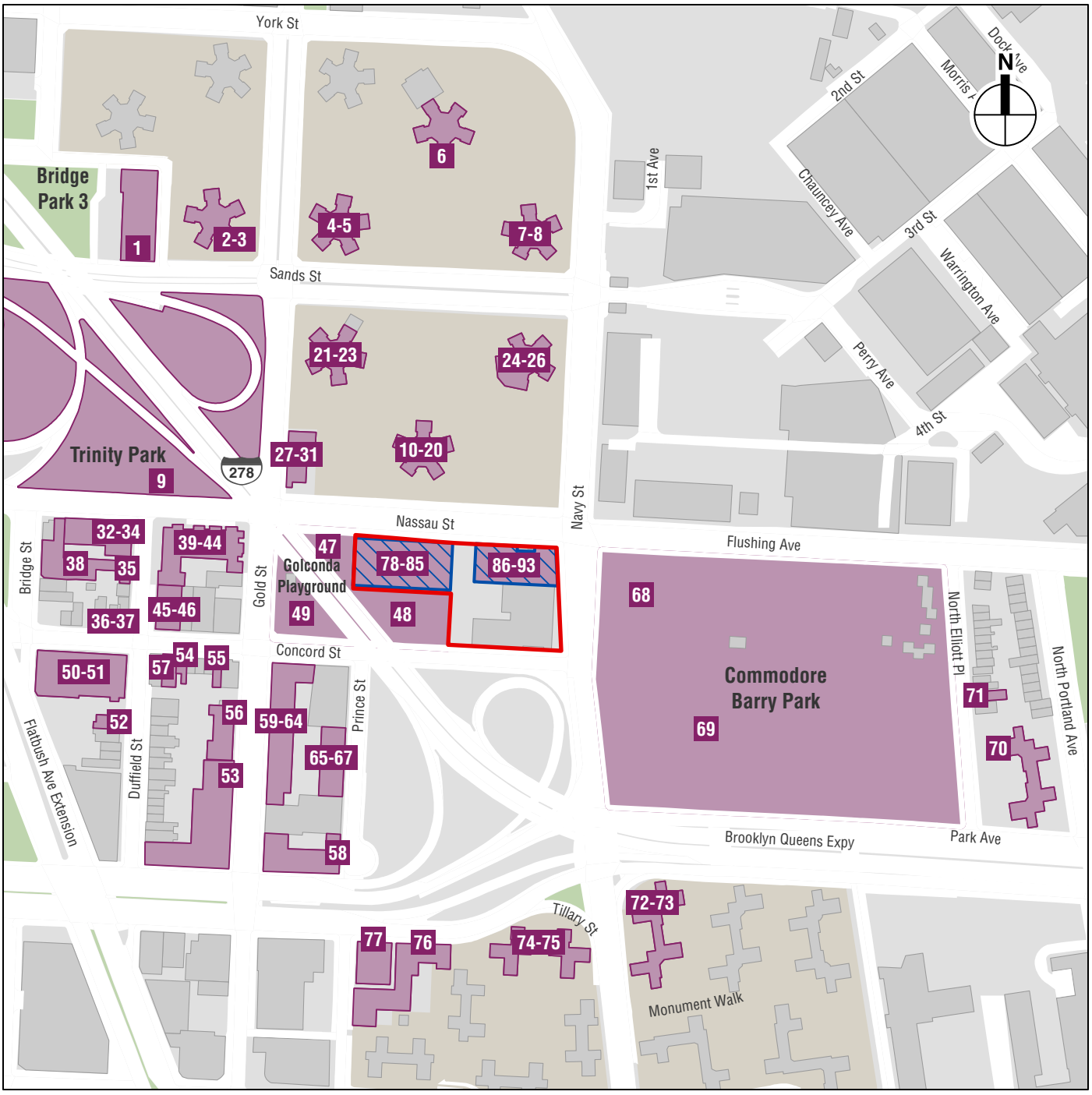

Project Site

1 *Noise Receptor Location*

Future Buildings 1 and 2

NYC Educational Construction Fund

240 NASSAU STREET

Construction Noise Receptors

Figure 17-1

Table 17-11
Noise Receptors by Location and Land Use

Receptor	Address	Block / Lot	Land Use
1	Farragut Houses Building 7 - 177 Sands Street	Block 68 / Lot 1	Residential
2, 3	165 Sands Street	Block 68 / Lot 107	Residential
4, 5	Farragut Houses Building 5 - 191 Sands Street	Block 71 / Lot 1	Residential
6	Farragut Houses Building 6 - 224 Sands Street	Block 71 / Lot 1	Residential
7, 8	Farragut Houses Building 4 - 233 Sands Street	Block 71 / Lot 1	Residential
9	Trinity Park	Block 89 / Lot 1	Open Space & Recreation
10-20	Farragut Houses Building 1 - 237 Nassau Street	Block 90 / Lot 1	Residential
21-23	Farragut Houses Building 3 - 192 Sands Street	Block 90 / Lot 1	Residential
24-26	Farragut Houses Building 2 - 234 Nassau Street	Block 90 / Lot 1	Residential
27-31	Church of the Open Door - 201 Gold Street	Block 90 / Lot 50	Place of Worship (Church)
32-34	180 Nassau Street	Block 108 / Lot 12	Residential
35	14 Duffield Street	Block 108 / Lot 19	Residential
36, 37	175 Concord Street	Block 108 / Lot 22	Residential
38	189 Bridge Street	Block 108 / Lot 7501	Mixed Residential & Commercial
39-44	200 Nassau Street	Block 109 / Lot 1	Residential
45, 46	177 Concord Street	Block 109 / Lot 25	Residential
47-49	Golconda Playground - 233 Gold Street	Block 110 / Lot 1	Open Space & Recreation
50, 51	Science Skills Center High School - 49 Flatbush Avenue Ext	Block 120 / Lot 20	School
52	42 Duffield Street	Block 120 / Lot 7502	Residential
53	260 Gold Street	Block 121 / Lot 3	Residential
54	184 Concord Street	Block 121 / Lot 23	Residential
55	192 Concord Street	Block 121 / Lot 27	Residential
56	236 Gold Street	Block 121 / Lot 33	Residential
57	178-182 Concord Street	Block 121 / Lot 7501	Residential
58	Bklyn Gold - 277 Gold Street	Block 122 / Lot 5	Mixed Residential & Commercial
59-67	Bklyn Gold - 257 Gold Street	Block 122 / Lot 13	Mixed Residential & Commercial
68, 69	Commodore Barry Park	Block 2025 / Lot 1	Open Space & Recreation
70	Navy Yard Housing Cooperative - 45-55 Elliott Place	Block 2027 / Lot 1	Residential
71	31 North Elliott Place	Block 2027 / Lot 7503	Residential
72, 73	Ingersoll Houses Building 23 - 8 Monument Walk	Block 2034 / Lot 1	Residential
74, 75	Ingersoll Houses Building 35 - 5 Fleet Walk	Block 2050 / Lot 1	Residential
76	71 Prince Street	Block 2050 / Lot 100	Mixed Residential & Commercial
77	Tillary Street Women's Shelter - 200 Tillary Street	Block 2050 / Lot 104	Public Institute (Women's Shelter)
78-85	Proposed Building 1	Block 110 / Lot 25	Mixed Residential & Commercial
86-93	Proposed Building 2	Block 111 / Lot 1	Mixed Residential & Commercial

Geographic input data used with the CadnaA model included site work areas, adjacent building footprints and heights, locations of streets, and locations of sensitive receptors. For each analysis period, the approximate geographic location and operational characteristics—including equipment usage rates (percentage of time operating at full power) for each piece

of construction equipment operating at the proposed development site, as well as noise control measures—were input to the model.

Construction equipment source strength was determined by the L_{max} levels presented in Table 22-1 of the *CEQR Technical Manual*. For construction equipment not included in this table, other reference sources, manufacturer specifications, or field measured noise levels were used.

In addition, shielding by barriers erected on the construction site and reflections and shielding from adjacent buildings will be accounted for in the model. Construction-related vehicles were assigned to the adjacent roadways. The model produces A-weighted $L_{eq(1)}$ noise levels at each receptor location for each analysis period, as well as the contribution from each noise source.

The $L_{10(1)}$ noise levels were conservatively estimated by adding 3 dBA to the $L_{eq(1)}$ noise levels, as is standard practice.[3]

DETERMINATION OF NON-CONSTRUCTION NOISE LEVELS

Noise generated by construction activities (calculated using the CadnaA model as described above) were added to baseline (i.e., non-construction) noise levels, including noise generated by non-construction traffic on adjacent roadways, to determine the total noise levels at each receptor location. Baseline noise levels were calculated using the CadnaA model based on existing condition traffic information. The existing condition CadnaA model includes receptors representing the noise measurement locations from the operational noise analysis to be used for the purpose of validating or calibrating the existing condition results. The existing condition CadnaA model included the noise measurement locations described in Chapter 14, "Noise," for the purpose of calibrating the calculated existing condition noise level modeling. As a result of calculated levels at each measurement location in the existing condition CadnaA model differing from measured existing levels by more than 3 dBA, an adjustment factor was added to analysis receptors. This method of establishing non-construction noise levels is conservative, as it does not take into account the additional baseline noise contributed by noise sources other than vehicular road traffic; the lower estimated baseline noise levels tend to result in larger predicted noise level increments and therefore a greater likelihood of identifying significant adverse construction noise impacts.

ANALYSIS TIME PERIOD SELECTION

The construction noise analysis estimated construction noise levels based on projected activity and equipment usage as well as the level of construction traffic for various stages of construction under the Proposed Actions.

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 selected captured each major construction stage (e.g., demolition work, excavation work, foundation work, superstructure work, interior fit-out work) at the buildings and structures to be constructed under the Proposed Actions, including major

[3] Federal Highway Administration Roadway Construction Noise Model User's Guide, Page 15. http://www.fhwa.dot.gov/environment/noise/construction_noise/rcnm/rcnm.pdf

overlaps of construction stages between individual sites. These were the time periods with the potential to result in the maximum incremental construction noise at nearby receptors (i.e., time periods when multiple buildings would be under construction using noisy equipment) as well as resulting in the maximum levels of construction noise at the proposed buildings that would be completed and occupied during subsequent construction associated with the Proposed Actions. Each analysis time period is expected to conservatively represent 3 to 8 months of time based on the duration of activities that would be underway during the time period. The worst-case time periods selected for the detailed construction noise analysis are shown in **Table 17-12**.

Table 17-12
Construction Noise Analysis Periods

Analysis Periods	Construction Activities
Month 1 – Month 4	All Buildings: Abatement and Demolition
Month 5 – Month 7	Buildings 1 and 2: Excavation and Start of Foundations
Month 8 – Month 15	Buildings 1 and 2: Excavation, Foundations, and Concrete Operations
Month 16 – Month 21	Buildings 1 and 2: Start of Superstructure
Month 22 – Month 28	Buildings 1 and 2: End of Superstructure
Month 29 – Month 32	Buildings 1 and 2: Exteriors
Month 33 – Month 35	Buildings 1 and 2: Interiors Buildings 3 and 4: Excavation and Start of Foundations
Month 36 – Month 42	Buildings 1 and 2: Interiors and Sitework Buildings 3 and 4: Excavation, Foundations, and Concrete Operations
Month 43 – Month 45	Buildings 1 and 2: Interiors and Sitework Buildings 3 and 4: Start of Superstructure
Month 46 – Month 48	Buildings 3 and 4: Start of Superstructure
Month 49 – Month 55	Buildings 3 and 4: End of Superstructure
Month 56 – Month 60	Buildings 3 and 4: Exteriors
Month 61 – Month 66	Buildings 3 and 4: Interiors
Month 67 – Month 72	Buildings 3 and 4: Interiors and Sitework

CONSTRUCTION NOISE IMPACT CRITERIA

Chapter 22 of the *CEQR Technical Manual* breaks construction duration into “short-term” and “long-term” (i.e., less than two years and two years or longer, respectively) 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 operational 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 resulting from the Proposed Actions 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.

At the noise-sensitive receptors that experience exceedances of these thresholds during the analysis periods identified above, the duration of exceedance of each impact threshold was determined. The significance of exceedances was then assessed based on the predicted magnitude and duration of the construction noise at these locations. Based on the incremental noise level increase, overall exterior noise levels for each analysis period were also determined.

NOISE REDUCTION MEASURES

Construction under the Proposed Actions would be required to follow 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) for construction noise control measures. Specific noise control measures would be incorporated in noise mitigation plan(s) required under the *New York City Noise Control Code.* These measures would include a variety of source and path controls.

In terms of source controls (i.e., reducing noise levels at the source or during the most sensitive time periods), the following measures, included under 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 17-13** shows the noise levels for typical construction equipment that would be used for construction under the Proposed Actions.
- As early in the construction period as logistics allow, diesel- or gas-powered equipment would be replaced with electrical-powered equipment such as welding machines, 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 three 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) would be used for certain equipment as necessary to the extent feasible

and practicable to remain consistent with Table 17-13. The details to construct portable noise barriers, enclosures, tents, etc. are shown in DEP's *Rules for Citywide Construction Noise Mitigation*.[4]

Additionally, the following measures, which go beyond the requirements New York City regulations, would be implemented:

- During construction of proposed Buildings 1 and 2, site-perimeter noise barriers would be at least 12 feet tall, including a cantilever towards the work area to provide additional shielding for elevated receptors (e.g., upper floors of nearby residential buildings).

Table 17-13
Construction Equipment Noise Emissions in dBA

Equipment List	Typical L_{max} Noise Level at 50 feet[1]
Auger Drill Rig	85
Compressor (air greater than 350 cfm)	80
Concrete Mixer Truck	85
Concrete Pump Truck	82
Crane	85
Excavator	85
Front End Loader	80
Generator	82
Generator (<25KVA)	70
Grader	85
Hoist	75[2]
Jackhammer	85
Man Lift	85
Mounted Impact Hammer (Hoe Ram)	90

Notes:
[1] Rules for Citywide Construction Noise Mitigation, Chapter 28, DEP, 2007, except where noted.
[2] "Noise Control for Construction Equipment…" Report for Hydro Quebec, 1985

CONSTRUCTION NOISE ANALYSIS RESULTS

Cumulative On-Site and Mobile Construction Noise Sources

Using the methodology described and considering the noise abatement measures specified above, a cumulative noise analysis was performed to determine maximum 1-hour equivalent ($L_{eq(1)}$) noise levels that would be expected at each of the noise receptor locations during the construction period.

Noise levels resulting from construction of the Proposed Project were predicted to exceed the *CEQR Technical Manual* construction noise screening thresholds for some portion of the construction period at several of the analyzed receptors. The potential for significant adverse impacts at these receptors was determined by evaluating the duration and magnitude of these increments. At most receptors, maximum predicted construction noise level increments

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

would be less than 10 dBA throughout construction. While such increases in noise may be noticeable at times, predicted noise level increments would be moderate and would occur over a limited duration. Noise levels generated by construction at these receptors would generally be in the "acceptable" to "marginally unacceptable" categories according to the *CEQR Technical Manual* noise exposure criteria throughout construction. Consequently, construction noise associated with the Proposed Project would not rise to the level of a significant adverse impact at the receptors that would not result in an increment of more than 10 dBA throughout construction.

For receptors where noise level increments would exceed 10 dBA, the construction noise level predictions are summarized in **Table 17-14** and discussed further below. The full results of the detailed construction noise analysis are shown in **Appendix G**.

Table 17-14
Select Construction Noise Analysis Results in dBA

Receptor	Address	Existing L_{10}		Total L_{10}		Noise Level Increment	
		Min	Max	Min	Max	Min	Max
13	Farragut Houses Building 1 - 237 Nassau Street	65.1	69.1	65.2	79.1	0.0	10.7
14	Farragut Houses Building 1 - 237 Nassau Street	65.1	69.1	65.1	78.8	0.0	10.4
15	Farragut Houses Building 1 - 237 Nassau Street	65.1	69.6	65.1	78.8	0.0	11.6
16	Farragut Houses Building 1 - 237 Nassau Street	65.1	68.0	65.2	78.9	0.0	12.3
18	Farragut Houses Building 1 - 237 Nassau Street	65.1	65.1	65.1	75.7	0.0	10.6
79	Future Building 1	65.1	65.1	65.1	75.3	0.0	10.2
80	Future Building 1	65.1	65.1	65.1	78.2	0.0	13.1
81	Future Building 1	65.1	65.1	65.1	79.8	0.0	14.6
82	Future Building 1	65.1	65.1	65.1	77.3	0.0	12.2
83	Future Building 1	65.1	65.1	65.1	75.9	0.0	10.8
86	Future Building 2	65.1	65.1	65.1	80.0	0.0	14.9
87	Future Building 2	65.1	65.1	65.1	79.0	0.0	13.9
88	Future Building 2	65.1	65.1	65.1	79.6	0.0	14.4
89	Future Building 2	65.1	65.1	65.1	76.6	0.0	11.5
92	Future Building 2	65.1	65.1	65.1	76.3	0.0	11.2
93	Future Building 2	65.1	65.1	65.1	78.8	0.0	13.7

The noise levels shown in **Table 17-14** 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 under the Proposed Actions would be comparable to or less than those from typical construction sites in New York City involving a new building with concrete slab floors and foundation. Similarly, potential disruptions to adjacent 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.

Residential Receptors at Farragut Houses Building 1 – Receptors 10 through 20
Receptors 10 through 20 represent the Farragut Houses Building 1 residential tower at 237 Nassau Street, which is located directly north of the Project Site across Nassau Street. Existing noise levels at these receptors are estimated in the mid- to high 60s dBA, which would be considered "acceptable" according to *CEQR Technical Manual* noise exposure criteria.

At receptors 10 through 12, 14, 17, 19, and 20, representing façades not directly facing construction, construction is predicted to produce noise levels increases less than 10 dBA for all of construction. At receptor 18, which also represents a façade not directly facing construction, construction is predicted to produce noise levels up to the high 70s dBA, in the "marginally unacceptable" range according to the *CEQR Technical Manual* noise exposure criteria, and would result in noise level increases up to approximately 11 dBA during the most noise-intensive stages of construction and less than 10 dBA for all but eight consecutive months during the construction period. Given the limited duration and magnitude of predicted construction noise effects, construction noise would not rise to the level of a significant impact at these receptors.

At floors 1 through 4 and 6 through 13 of receptors 13, 15, and 16, which are the floors that are either low enough to be shielded by the site-perimeter noise barriers or high enough to benefit from increased distance from at-grade construction activity, construction is predicted to produce noise levels up to the high 70s dBA, in the "marginally unacceptable" range according to the *CEQR Technical Manual* noise exposure criteria, and would result in noise level increases up to approximately 12 dBA during the most noise-intensive stages of construction and less than 10 dBA for all but 11 consecutive months during the construction period. Given the limited duration and magnitude of predicted construction noise effects, construction noise would not rise to the level of a significant impact at these receptors.

At the fifth floor of receptors 13, 15, and 16, which has a direct line of sight to construction over the site-perimeter noise barrier, construction is predicted to produce noise levels up to the high 70s dBA, in the "marginally unacceptable" range according to the *CEQR Technical Manual* noise exposure criteria, and would result in noise level increments up to approximately 12 dBA. At these receptors, noise level increments exceeding 10 dBA would occur for up to approximately 21 consecutive months.

The façade at Farragut Houses Building 1 would be expected to provide approximately 25 dBA of window/wall attenuation at units that have monolithic glass windows and through-window air conditioning or 20 dBA of window/wall attenuation at units that have monolithic glass windows and no alternate means of ventilation. Consequently, maximum interior L_{10} noise levels during construction would be up to approximately 54 dBA at noise-sensitive spaces with air conditioning and approximately 59 dBA at noise-sensitive spaces without alternate means of ventilation, approximately 9 dBA and 14 dBA greater than the interior noise level threshold of 45 dBA considered acceptable for residential or community facility use by CEQR noise exposure guidance, respectively.

Based on the prediction of noise level increases exceeding 10 dBA and lasting up to approximately 21 consecutive months, as well as interior noise levels exceeding the acceptable limits, construction noise would result in a temporary significant adverse impact at the fifth floor of the façades with direct line of sight to construction at Farragut Houses Building 1 represented by receptors 13, 15, and 16. These receptors are discussed further in Chapter 19, "Mitigation."

Future Residential Receptors at Buildings 1 and 2 – Receptors 78 through 93

Receptors 78 through 93 represent future residential receptors at Buildings 1 and 2, located on the northern half of the Project Site. Existing noise levels at these receptors are predicted to be in the mid-60s dBA, which would be considered "acceptable" according to *CEQR Technical Manual* noise exposure criteria.

At receptors 78, 79, 82 through 85, and 90 through 92, which represent façades facing away from construction, construction is predicted to produce noise levels up to the high 70s dBA, in the "marginally unacceptable" range according to the *CEQR Technical Manual* noise exposure criteria, and would result in noise level increases up to approximately 12 dBA during the most noise-intensive stages of construction and less than 10 dBA for all but 10 consecutive months during the construction period. Given the limited duration and magnitude of predicted construction noise effects, construction noise would not rise to the level of a significant impact at these receptors.

At receptors 80, 81, 86 through 89, and 93, which represent façades with direct line of sight to construction, construction is predicted to produce noise levels up to the low 80s dBA, in the "clearly unacceptable" range, and would result in noise level increments up to approximately 15 dBA. At these receptors, noise level increments exceeding 10 dBA would occur for up to approximately 15 consecutive months. As described in Chapter 14, residential development at these receptors would be expected to provide between 25 and 31 dBA of window/wall attenuation and an alternative means of ventilation. Consequently, interior noise levels during the most noise-intensive construction activities associated with the Proposed Project would be no greater than the approximately 55 dBA at noise-sensitive spaces, approximately 10 dBA greater than the interior noise level threshold of 45 dBA considered acceptable for residential or community facility use by CEQR noise exposure guidance.

Based on the prediction of noise level increases exceeding 10 dBA and lasting up to approximately 15 consecutive months, as well as interior noise levels exceeding the acceptable limits, construction noise would result in a temporary significant adverse impact at the façades with direct line of sight to construction, represented by receptors 80, 81, 86 through 89, and 93. These receptors are discussed further in Chapter 19, "Mitigation."

Construction Mobile Sources

Construction worker vehicles and trucks traveling on roadways prior to the start of the construction workday would have the potential to generate noise at receptors along the routes used to access the Project Site. Using the methodology described above, construction worker vehicles and trucks traveling to and from the Project Site between 6:00 AM and 7:00 AM were estimated. Noise resulting from vehicular activity associated with construction of the Proposed Project would not result in a doubling of Noise PCEs, which would be necessary to produce a 3 dBA noise level increase on any roadways and would therefore not rise to the level of a significant adverse impact. Consequently, while noise due to construction traffic at these receptors may be perceptible at times, it would not rise to the level of a significant impact according to the impact criteria described above.

Conclusions

Construction under the Proposed Actions would have the potential to result in significant adverse impacts related to noise. At some receptors, construction under the Proposed Actions would result in noise level increments that would be noticeable and potentially

intrusive over an extended duration with interior noise levels exceeding the acceptable threshold, which would be considered significant adverse impacts. Significant adverse impacts related to construction noise would occur at locations as indicated in **Figure 17-2** and **Table 17-15**. However, building construction would typically occur during weekday daytime hours and would therefore not produce noise during nighttime hours when residents would be most sensitive to noise. Further, construction would comply with *New York City Noise Control Code* regulations. Per *New York City Noise Control Code* regulations, construction under the Proposed Actions would be required to occur in accordance with a Construction Noise Mitigation Plan, which may identify more control measures that would further reduce construction noise levels. This is discussed further in Chapter 19, "Mitigation."

Table 17-15
Significant Adverse Construction Noise Impact Locations

Receptors	Address	Land Use	Façade(s)
13, 15, 16 (floor 5 only)	Farragut Houses Building 1 – 237 Nassau Street	Residential	South (construction-facing)
80, 81	Future Building 1	Residential, Community Facility, and Cultural	South, southern half of West
86-89 and 93	Future Building 2	School	South, southern half of East and West

VIBRATION

Construction activities have the potential to result in vibration that could cause structural or architectural damage, and/or annoyance or interference with vibration-sensitive activities. Vibration levels at a receiver are a function of the source strength (which depends on the construction equipment and methods used), the distance between the equipment and the receiver, the characteristics of the transmitting medium (i.e., soil, rock, etc.), and the receiver building construction materials. Construction equipment can cause ground vibrations that dissipate with distance. Vehicular traffic typically does not result in perceptible vibration levels, even at receivers close to major roadways, unless there are discontinuities in the roadway surface. Excepting 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 the LPC of a Peak Particle Velocity (PPV) of 0.50 inches/second as specified in the DOB's *Technical Policy and Procedure Notice (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.

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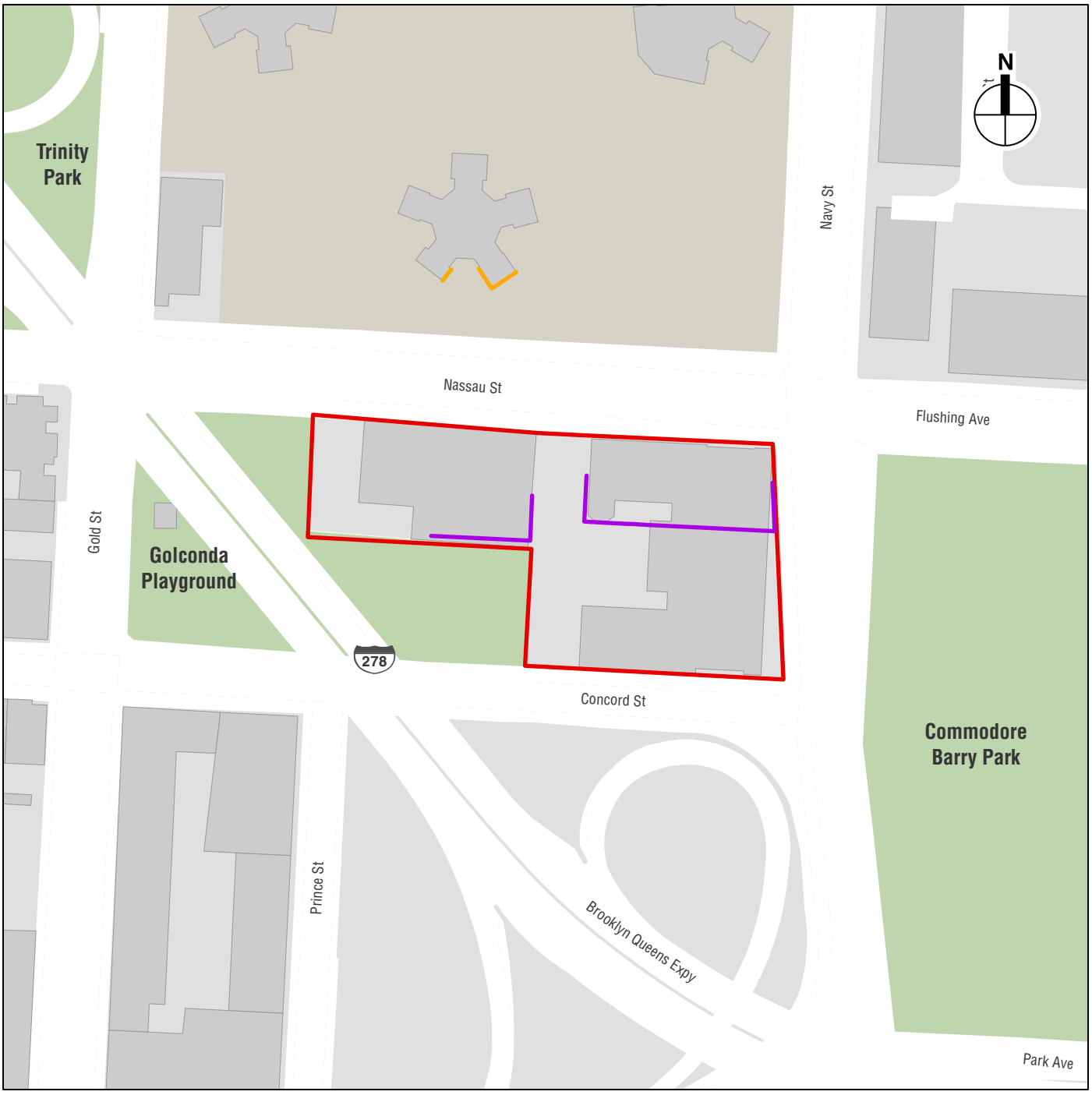

Project Site

Significant Adverse Impacts at Existing Buildings

Significant Adverse Impacts at Future Buildings

NYC Educational Construction Fund

240 NASSAU STREET

Adverse Construction Noise Impacts

Figure 17-2

For purposes of evaluating potential annoyance or interference with vibration-sensitive activities, vibration levels greater than 72 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 17-16 shows vibration source levels for typical construction equipment.

Table 17-16
Vibration Source Levels for Construction Equipment

Equipment	PPV_{ref} (in/sec)	Approximate L_v (ref) (VdB)
Hoe Ram	0.089	87
Caisson Drilling	0.089	87
Jackhammer	0.035	79
Source: FTA Transit Noise and Vibration Impact Assessment Manual (September 2018).		

The source vibration levels shown in **Table 17-16** were projected to nearby receptors to estimate the levels of construction vibration that would occur near the Project Site.

CONSTRUCTION VIBRATION ANALYSIS RESULTS

The buildings of most concern with regard to the potential for structural or architectural damage due to vibration are the existing buildings and structures immediately adjacent to the Project Site. Vibration levels within 8 feet may result in PPV levels between 0.50 and 2.0 in/sec, which is generally considered acceptable for a non-historic building or structure, including during caisson drilling and use of the hoe ram, which would be the most vibration-intensive activities associated with the Proposed Actions. Additional receptors farther away from the Project Site would experience less vibration than those listed above, which would not be expected to cause structural or architectural damage.

In terms of potential vibration levels that would be perceptible and annoying, the activities that would have the most potential for producing levels that exceed the 72 VdB limit are also the caisson drilling and hoe ram usage. They would have the potential to produce perceptible vibration levels (i.e., vibration levels exceeding 72 VdB) at receptor locations within approximately 80 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 associated with the Proposed Actions.

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 and the parking lane(s) immediately adjacent to the Project Site. Overall, the temporary and localized nature of construction would not result in a significant adverse impact on local land use patterns in the 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,” an 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, locating 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, construction equipment, and building superstructure would be visible to pedestrians in the immediate vicinity of the Project Site. However, the effects on the pedestrian experience would be localized, confined largely to streets surrounding the Project Site, and no immediate area would experience the effects of construction activities for the full project construction duration. MPT plans would be developed for any temporary sidewalk, lane, and/or street closures. Fencing would be erected to reduce potentially undesirable views of construction areas, buffer noise emitted from construction activities, and 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 a significant impact to neighborhood character.

SOCIOECONOMIC CONDITIONS

Construction activities could temporarily affect pedestrian and vehicular access to businesses near the Project Site. However, the temporary parking lane 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 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 construction. 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 impact on socioeconomic conditions.

COMMUNITY FACILITIES

As described in Chapter 4, “Community Facilities,” the Proposed Project would replace the existing schools on the Project Site—P.S. 287 and Community Roots Charter School—with a new facility within the proposed development. It is anticipated that the existing public school would relocate to another nearby location within Community School District (CSD) 13, Subdistrict 2 at the commencement of construction. The replacement public school is anticipated to be an improvement over existing conditions. The proposed public school would also improve capacity within CSD 13, Subdistrict 2. As a result, a direct effects analysis for public schools is not warranted.

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 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. 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. Therefore, construction activities associated with the Proposed Actions would not result in a significant adverse impact on community facilities.

OPEN SPACE

There are no publicly accessible open spaces currently existing within the Project Site, and no open space resources would be used for staging or other construction activities. The nearest publicly accessible open space resource is the Golconda Playground located directly west 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 existing traffic on adjacent roadways and the construction fences around the Project Site, the noise increases may not be perceptible to

nearby open space users. Construction of the Proposed Project would not limit access to any open space resources in the vicinity of the Project Site. Therefore, construction of the Proposed Project would not result in a significant adverse impact 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

In a comment letter dated December 17, 2025, LPC determined that the Project Site has no archaeological or architectural significance (see **Appendix C**). As there are no archaeological or architectural resources on the Project Site, the Proposed Actions would not result in any adverse impacts to any such resources on the Project Site.

Architectural Resources

In the study area, no architectural resources would be demolished or altered. Because the Proposed Project would be constructed within 90 feet of portions of the Brooklyn-Queens Expressway (BQE), the co-Applicants would prepare and implement a Construction Protection Plan (CPP) in coordination with DOT prior to the start of construction activities at the Project Site. With the preparation and implementation of a CPP for this historic architectural resource, the Proposed Actions would not be expected to result in any direct impacts to architectural resources in the study area.

HAZARDOUS MATERIALS

A detailed assessment of potential impacts on hazardous materials is described in Chapter 9, "Hazardous Materials."

Redevelopment would involve site-wide excavation of subsurface materials at the Project Site to allow for construction of the new buildings. Although these activities could temporarily increase pathways for human exposure to any contaminated materials present in the existing structure or the subsurface by on-site workers, exposure to them and the surrounding community would be mitigated by incorporating the following into the Proposed Project:

- To avoid any potential for hazardous materials exposure on the Project Site, an (E) Designation (E-921) for hazardous materials would be placed on Block 110, Lot 25 and Block 111, Lot 1 to ensure that remediation is completed in accordance with the requirements of the New York City Mayor's Office of Environmental Remediation (OER). A hazardous materials (E) Designation is an institutional control that can be placed on a property as a result of CEQR review of a zoning action. It is a mechanism to ensure that testing for, and remediation of, hazardous materials are completed as part of the future development of a site, thereby minimizing the potential for a hazardous materials impact and ensuring the protection of human health and the environment. Redevelopment of a site with an (E) Designation for hazardous materials will require review from OER and documentation of hazardous materials exposure mitigation prior to the issuance of DOB permits.

With these measures included as part of the Proposed Project, no significant adverse impact related to hazardous materials would occur during construction at the Project Site.

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 result in a significant adverse impact to nearby users of these services. ✷