A. INTRODUCTION

As described in Chapter 1, "Project Description," the New York Blood Center (the Applicant) is requesting a rezoning and other discretionary actions (the Proposed Actions) to facilitate the construction of the Proposed Project, an approximately 596,200 gross-square-foot (gsf) through-block building on the site of its existing New York Blood Center (NYBC) building at 310 East 67th Street, Block 1441 Lot 40 (the Development Site). Block 1441 is bounded by East 66th and East 67th Streets and First and Second Avenues and is part of a larger Rezoning Area which also includes Block 1441, Lots 1001–1202, and Block 1421, p/o Lot 21. The Proposed Project would be constructed in a single phase, anticipated to begin in 2022 and to be complete in 2026 over an approximately 51-month period, as compared to the 44-month period estimated for the 229,092-gsf new building under the No Action condition.

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

PRINCIPAL CONCLUSIONS

Construction associated with the Proposed Project would result in temporary disruptions in the surrounding area. As described below, the Proposed Project's construction activities would result in significant adverse noise impacts. For all other technical areas, construction activities associated with the Proposed Project would not result in significant adverse impacts. Findings specific to each of the key technical areas are summarized below.

TRANSPORTATION

The construction worker and truck trips associated with the Proposed Project during peak construction conditions would not exceed the 2020 *City Environmental Quality Review (CEQR) Technical Manual* analysis threshold of 50 or more peak hour vehicle-trips or 200 or more peak hour transit or pedestrian trips. Therefore, construction of the Proposed Project would not result in any significant adverse traffic, parking, transit, or pedestrian impacts. In addition, construction of the Proposed Project would not result in significant adverse parking impacts since the parking demand generated by construction workers is expected to be accommodated by available off-street spaces and parking facilities within a ¼-mile radius of the Development Site. Coordination with the New York City Department of Transportation (DOT)'s Office of Construction Mitigation and Coordination (OCMC) would be undertaken to ensure proper implementation of Maintenance and Protection of Traffic (MPT) plans and requirements.

AIR QUALITY

An emissions reduction program would be implemented for the Proposed Project to minimize the effects of construction activities on the surrounding community. Measures would include, to the extent practicable, dust suppression measures, use of ultra-low sulfur diesel (ULSD) fuel, idling restrictions, diesel equipment reduction, the utilization of newer equipment (i.e., equipment meeting the U.S. Environmental Protection Agency's [EPA] Tier 3 emission standard), and best available tailpipe reduction technologies. 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 *de minimis* thresholds or National Air Quality Ambient Standards (NAAQS), respectively. Therefore, construction of the Proposed Project would not result in significant adverse air quality impacts due to construction sources.

NOISE

Noise levels from construction of the Proposed Project are expected to be comparable to those from typical New York City construction involving a new building or buildings with concrete slab floors and foundation on piles. Similarly, potential disruptions to adjacent residences and other receptors from elevated noise levels generated by construction would be expected to be comparable to those that would occur immediately adjacent to a typical New York City construction site during the portions of construction when the loudest activities would occur.

The detailed analysis of construction noise concluded that construction pursuant to the Proposed Actions has the potential to result in construction noise levels that exceed *CEQR Technical Manual* construction noise screening threshold for an extended period of time or the additional construction noise impact criteria defined herein at receptors surrounding the proposed construction work areas, including the Memorial Sloan Kettering Cancer Center (MSKCC) facilities on East 66th Street and Second Avenue (including the Evelyn H. Lauder Breast Center and the Imaging Center), the Julia Richman Educational Complex (JREC), the 67th Street Library, residences immediately adjacent to the proposed development site at 301 and 321 East 66th Street, residences at 324 through 340 East 66th Street, residences at 332, 338, and 342 East 67th Street, and residences at 315 East 65th Street.

At these receptors, construction could produce noise level increases that would be noticeable and potentially intrusive during the most noise-intensive nearby construction activities, and would produce noticeable increases over the course of construction. The analysis evaluated the construction periods with the potential to result in the greatest levels of construction noise; however, the predicted maximum levels would not persist throughout construction, and the noise levels would fluctuate throughout the construction period.

VIBRATION

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 Development Site including the 67th Street Library (the "Library Building") as well as 301 and 321 East 66th Street. However, given their distances from anticipated locations of rock excavation, vibration levels at these buildings and structures would not be expected to exceed 0.50 in/sec PPV, including during rock excavation, which would be the most vibration intensive activity. The Applicant would prepare a Construction Protection Plan (CPP) that would include measures to protect the

S/NR-eligible Library Building from inadvertent construction-related damage including ground-borne vibration, falling debris, and accidental damage from heavy machinery during project construction. Additional receptors farther away from the Project Area would experience less vibration than those listed above, and similarly would not be expected to cause structural or architectural damage.

In terms of potential vibration levels that would be perceptible and annoying, the equipment that would have the most potential for producing levels that exceed the 65 VdB limit is the excavator with hydraulic break ram. It would have the potential to produce perceptible vibration levels (i.e., vibration levels exceeding 65 VdB) at receptor locations within a distance of approximately 550 feet depending on soil conditions. However, the operation would occur for limited periods of time at a given location and therefore would not result in any significant adverse impacts.

Consequently, there is no potential for significant adverse vibration impacts from construction under the Proposed Actions.

B. GOVERNMENTAL COORDINATION AND OVERSIGHT

Construction oversight involves several city, state, and federal agencies. **Table 16-1** lists the primary involved agencies and their areas of responsibility. For projects in New York City, primary construction oversight lies with the New York City Department of Buildings (DOB), which ensures that construction projects meet the requirements of the New York City Building Code and that buildings are structurally, electrically, and mechanically safe. In addition, DOB enforces safety regulations to protect workers and the general public during construction: the areas of oversight include installation and operation of equipment such as cranes, sidewalk sheds, and safety netting and scaffolding. The New York City Department of Environmental Protection (DEP) enforces the New York City Noise Code, reviews and approves any needed Remedial Action Work Plans (RAWPs) and Construction Health and Safety Plans (CHASP), and regulates water disposal into the sewer system as well as abatement of hazardous materials. 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 and the installation of tanks containing flammable materials. DOT’s 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 (CPPs) and any monitoring measures necessary to prevent damage to historic structures.

Table 16-1
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, hazardous materials abatement
City of New York Department of Sanitation	Storage, transport, and disposal of asbestos waste
Fire Department	Compliance with Fire Code, fuel tank installation
Department of Transportation	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 construction and operation of bulk petroleum and chemical storage tanks. At the federal level, the EPA has wide-ranging authority over environmental matters, including air emissions, noise, hazardous materials, and the use of poisons, although much of the responsibility is delegated to the state level. The Occupational Safety and Health Administration (OSHA) sets standards for work site safety and construction equipment.

C. CONSTRUCTION PHASING AND SCHEDULE

Table 16-2 presents the anticipated construction schedule for the Proposed Project. Construction of the Proposed Project is anticipated to begin in 2022 and be complete by 2026, over an approximately 51-month period. The overall construction duration for the No Action building is anticipated to be shorter than that for the Proposed Project by approximately seven months.

Table 16-2
Anticipated Construction Schedule—Proposed Project

Construction Task	Start Month	Finish Month	Approximate Duration (months)[1]
Demolition and Abatement	Month 1	Month 12	12
Excavation and Foundations	Month 13	Month 22	10
Superstructure and Exteriors	Month 23	Month 50	28 (overlapping with Interiors and Finishing activities for 22 months)
Interiors and Finishing	Month 29	Month 51	23 (overlapping with Superstructure and Exteriors activities for 22 months

Note: [1] Construction would proceed in several stages, some of which would overlap.
Source: Lend Lease, May 2020.

Construction of the Proposed Project would consist of the following stages: demolition and abatement (approximately 12 months); excavation and foundation (approximately 10 months); superstructure and exteriors (approximately 28 months); and interiors and finishing (approximately 23 months). The demolition, excavation and foundation, and superstructure and exteriors stages are scheduled to occur sequentially. However, the interiors and finishing stage would begin following the start of the superstructure and exteriors construction stage and would overlap, resulting in a total anticipated construction duration of approximately 51 months. These stages are described in greater detail below.

D. CONSTRUCTION DESCRIPTION

The following provides a description of the general construction practices and activities, which would occur during the construction of both the Proposed Project and the No Action condition.

GENERAL CONSTRUCTION PRACTICES

HOURS OF WORK

Construction would be carried out in accordance with New York City laws and regulations, which allow construction activities between 7 AM and 6 PM on weekdays. Construction work would typically begin at 7 AM on weekdays, with most workers arriving between 6 AM and 7 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 a concrete pour for a floor deck), the workday may occasionally be extended beyond normal work hours. Any extended workdays would generally last until approximately 6 PM and would not include all construction workers on-site, but only those involved in the specific task requiring additional work time.

While not expected to be frequent, weekend or night work may also be occasionally required for certain construction activities. Appropriate work permits from DOB would be obtained for any necessary work outside of normal construction hours and no work outside of normal construction hours would be performed until such permits are obtained. The numbers of workers and pieces of equipment in operation for night or weekend work would typically be limited to those needed to complete the particular authorized task. Therefore, the level of activity for any weekend or night work would be less than that of a normal workday.

DELIVERIES AND ACCESS

During construction, access to the construction area 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 area would be controlled and scheduled. Based on preliminary construction logistics for both the Proposed Project and the No Action condition, construction trucks such as dump trucks or concrete trucks are anticipated to access the Development Site along East 66th Street.

MPT plans would be developed for any required temporary sidewalk and lane narrowing and/or closures on East 66th and East 67th Streets to ensure the safety of the construction workers and the public passing through the area. Approval of these plans and implementation of the closures would be coordinated with DOT’s OCMC. Measures specified in the MPT plans that are anticipated to be implemented would include parking lane closures, safety signs, safety barriers, and construction fencing.

PUBLIC SAFETY

A variety of measures would be employed to ensure public safety during the construction, including sidewalk bridges to provide overhead protection; rooftop protections on adjacent building(s); safety signs to alert the public about active construction work; safety barriers to ensure the safety of the public passing by construction areas; flag persons to control trucks entering and exiting the construction areas and/or to provide guidance for pedestrians and bicyclists safety; and safety nettings as the superstructure work advances upward to prevent debris from falling to the ground. All DOB safety requirements would be followed to ensure the safety of the community and the construction workers themselves.

RODENT CONTROL

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

DESCRIPTION OF CONSTRUCTION ACTIVITIES

Prior to the commencement of construction, the work area would 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 then proceed with the demolition and abatement, excavation and foundations, superstructure and exteriors, and interiors and finishing stages, which are discussed below.

DEMOLITION AND ABATEMENT

The Development Site is currently occupied by a three-story, approximately 159,347 gsf, NYBC building. Before the commencement of demolition activities, this existing building would be surveyed for asbestos by a New York City-certified asbestos investigator and if present, those materials would be removed by a DOL-licensed asbestos abatement in accordance with local, state, and federal requirements. Abatement would occur simultaneously with any demolition activities necessary to make abatement possible. 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. Any activities with the potential to disturb lead-based paint (LBP) 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 building would be demolished using excavators with hoe ram attachments. Demolition activities would also involve the use of jackhammers, compressors, and generators. Demolition debris would be removed from the Development Site; this debris would typically be sorted prior to being disposed at landfills to maximize recycling opportunities.

EXCAVATION AND FOUNDATIONS

The Proposed Project would require excavation activities at the Development Site for the building cellar and foundation. 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 Development Site that needs fill. As the excavation becomes deeper, a temporary ramp may be built from the East 66th Street frontage to provide access for the dump trucks to the excavation area. No blasting is anticipated but an excavator with a hoe ram would be used to break down any rock encountered during excavation. Excavation would be followed by the construction of the foundation and below-grade elements of the proposed building. Piles would be installed with the use of drill rigs. This stage of construction may also involve the underpinning of adjacent buildings. Underpinning is a process in which structural support (often using piles) is added to support an existing foundation and permit project construction below. Excavation and foundations activities may also involve the use of a mobile crane, concrete trowels, welder, and rebar benders.

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 AND EXTERIORS

The superstructure work would include the framework for the proposed building, such as beams, slabs, and columns. Construction of the interior structure—or core—of the building would include elevator shafts; vertical risers for mechanical, electrical, and plumbing systems; electrical and mechanical equipment rooms; core stairs; and restroom areas. A tower crane would first be brought onto the Development Site during the superstructure task and would be used to lift structural components and other large materials. This stage would also include the installation of the exterior envelope systems of the proposed building. Superstructure and exteriors activities may also include the use of compressors, rebar benders, concrete vibrators, concrete trowels, 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.

INTERIORS AND FINISHING

Activities during the interiors and finishing stage would include the construction of interior partitions, installation of lighting fixtures and interior finishes (e.g., flooring, painting, etc.), and mechanical and electrical work, such as the installation of elevators and lobby finishes. Final cleanup and touchup of the building and final building system (e.g., electrical system, fire alarm, plumbing, etc.) testing and inspections would be part of this stage of construction. Equipment used during interiors and finishing would include a hoist, scissor lifts, forklifts, and a variety of small handheld tools.

Interiors and finishing 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 building with the façades substantially complete and the proposed building enclosed.

E. NUMBER OF CONSTRUCTION WORKERS AND MATERIAL DELIVERIES

Table 16-3 shows the estimated averaged daily numbers of workers and deliveries to the Development Site by calendar quarter for all construction activities. For the Proposed Project, the combined peak construction worker vehicle and truck trip generation would occur during the second quarter of Year 3 construction. The average number of workers throughout the construction period would be 175 per day. The peak number of workers would be 334 per day in the third quarter of Year 3 construction. For truck trips, the average number of trucks would be 20 per day, and the peak would occur in the second quarter of Year 3 construction, with 34 trucks per day.

Table 16-3
Average Number of Daily Workers and Trucks by Quarter
Proposed Project

Year	Year 1				Year 2				Year 3			
Quarter	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Workers	47	47	47	64	87	87	116	157	169	323	**334**	318
Trucks	7	7	7	13	22	22	24	26	22	33	**34**	31
Year	**Year 4**				**Year 5**							
Quarter	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**	**Peak**		**Average**	
Workers	280	280	285	283	217	175	-	-	334		175	
Trucks	23	23	24	24	17	14	-	-	34		20	
Source: Lend Lease Construction, July 2020												

F. ENVIRONMENTAL EFFECTS OF THE PROPOSED PROJECT'S CONSTRUCTION ACTIVITIES

Similar to other construction projects in New York City, construction of the Proposed Project would result in some temporary disruptions to the surrounding area. The following analysis describes the temporary effects on transportation, air quality, noise, and vibration. It also considers potential effects in other technical areas including land use and neighborhood character, socioeconomic conditions, community facilities, open space, historic and cultural resources, hazardous materials, and water and sewer infrastructure.

TRANSPORTATION

The construction transportation analysis assesses the potential for construction activities to result in significant adverse impacts to traffic, transit (i.e., subway and bus), pedestrian elements (i.e., sidewalks, corners, and crosswalks), and parking conditions. The analysis is based on the peak worker and truck trips during construction of the Proposed Project which, as described below, are developed based on several factors, including worker modal splits (how the workers access the site per mode of transportation: automobile, transit, or walking), vehicle occupancy and trip distribution, truck passenger car equivalents (PCEs), and arrival/departure patterns. As presented in **Table 16-3**, the combined peak construction worker vehicle and truck trip generation would occur during the third quarter of Year 3 construction for the Proposed Project.

TRAFFIC

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

Construction Trip Generation Projections

The quarterly average worker and truck trip projections shown in **Table 16-3** were further refined to account for worker modal splits and vehicle occupancy, arrival and departure distribution, and truck PCEs.

Daily Workforce and Truck Deliveries

For a reasonable worst-case analysis of potential traffic-related impacts during construction, the daily workforce and truck trip projections in the peak quarter were used to estimate peak hour construction trips. It is expected that construction of the Proposed Project would generate the highest amount of combined daily traffic in the third quarter of Year 3 construction, with an estimated average of 334 workers and 34 truck deliveries per day (see **Table 16-3**). These estimates of construction activities are discussed further below.

Construction Worker Modal Splits and Vehicle Occupancy

Based on the latest available U.S. Census data for workers in the construction and excavation industry (2000 Census), it is anticipated that 43 percent of construction workers would commute to the Development Site using private autos, with an average occupancy of approximately 1.17 persons per vehicle.

Peak Hour Construction Worker Vehicle and Truck Trips

Similar to other construction projects in New York City, most of the construction activities at the Development Site are expected to take place from 7 AM to 3:30 PM. While construction truck trips would occur throughout the day (with more trips during the morning), and most trucks would remain in the area for short durations, most construction workers would commute during the hours before and after the work shift. For analysis purposes, each truck delivery was assumed to result in two truck trips during the same hour (one "in" and one "out"), whereas each worker vehicle was assumed to arrive near the work shift start hour and depart near the work-shift end hour. Further, in accordance with the *CEQR Technical Manual*, it was assumed that each truck has a PCE of two.

The estimated daily vehicle trips were distributed throughout the workday based on projected work shift allocations and likely arrival/departure patterns for construction workers and trucks. For construction workers, the majority (approximately 80 percent) of the arrival and departure trips would take place during the hour before and after each work shift (6 to 7 AM for arrival and 3 to 4 PM for departure on a regular day shift). Construction truck deliveries into the construction site typically peak during the hour (6 to 7 AM) before each shift (25 percent), overlapping with construction worker arrival traffic; construction truck deliveries departing the construction site typically peak during the hour after the work shift has started (7 to 8 AM) since on-site activities do not commence until 7 AM.

Table 16-4 presents the hourly trip projections for the peak construction period that is anticipated to occur during third quarter of Year 3 construction for the Proposed Project. As shown in **Table 16-4**, the maximum construction-related traffic increments would be approximately 134 PCEs between 6 AM and 7 AM and 106 PCEs between 3 PM and 4 PM.

Table 16-4
Peak Construction Vehicle Trip Projections – Proposed Project

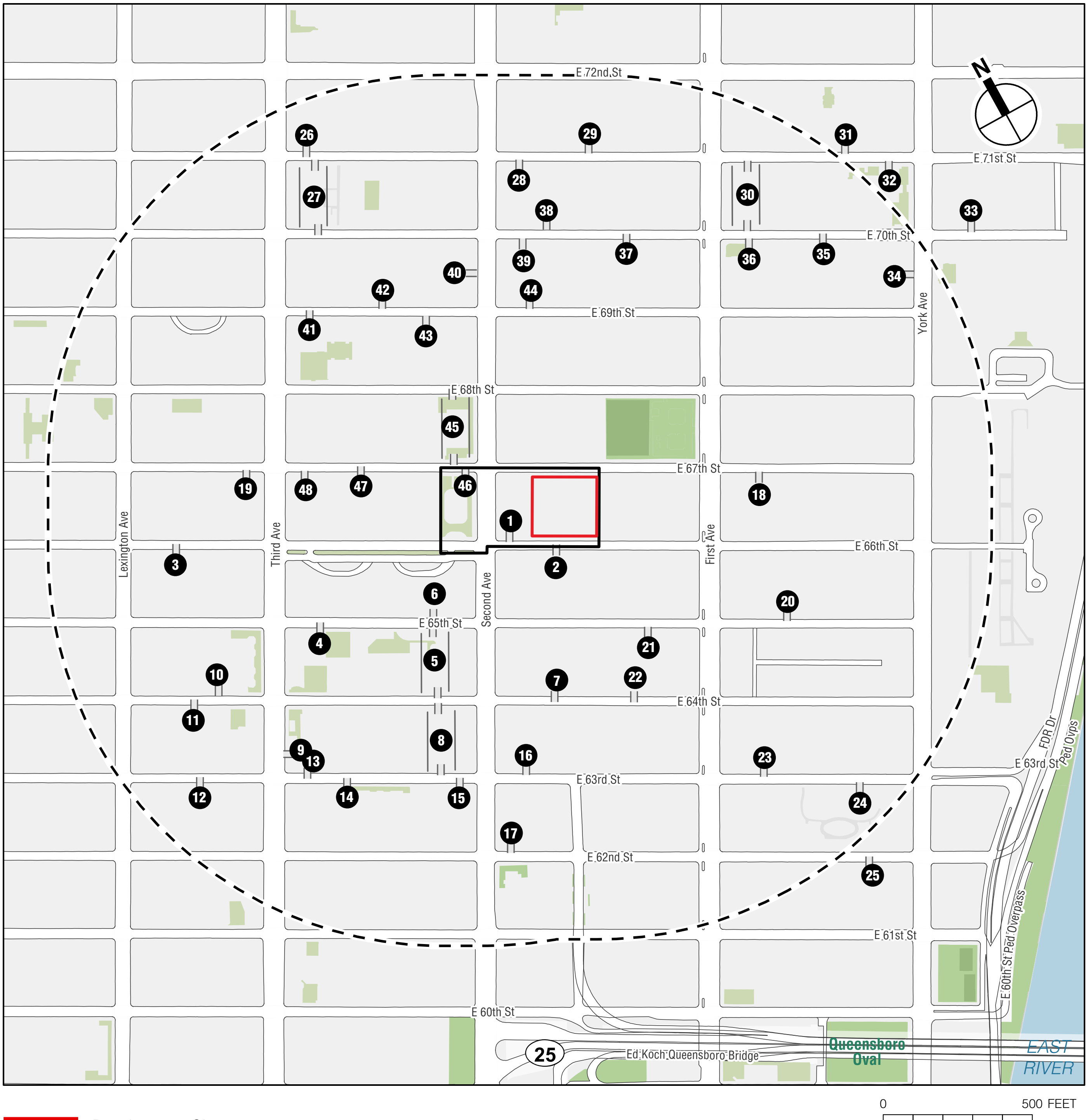
Hour	Auto Trips			Truck Trips			Total Vehicle Trips			Total PCE Trips		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Third Quarter of Year 3 Construction												
6 AM–7 AM	98	0	98	9	9	18	107	9	116	116	18	134
7 AM–8 AM	25	0	25	3	3	6	28	3	31	31	6	37
8 AM–9 AM	0	0	0	3	3	6	3	3	6	6	6	12
9 AM–10 AM	0	0	0	3	3	6	3	3	6	6	6	12
10 AM–11 AM	0	0	0	3	3	6	3	3	6	6	6	12
11 AM–12 PM	0	0	0	3	3	6	3	3	6	6	6	12
12 PM–1 PM	0	0	0	3	3	6	3	3	6	6	6	12
1 PM–2 PM	0	0	0	3	3	6	3	3	6	6	6	12
2 PM–3 PM	0	6	6	2	2	4	2	8	10	4	10	14
3 PM–4 PM	0	98	98	2	2	4	2	100	102	4	102	106
4 PM–5 PM	0	19	19	0	0	0	0	19	19	0	19	19
Daily Total	123	123	246	34	34	68	157	157	314	191	191	382

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).

LEVEL 2 SCREENING

Since the Proposed Project PCEs would exceed the *CEQR Technical Manual* analysis threshold of 50 vehicle-trips (a "Level 1" screening) during the 6 AM to 7 AM and 3 PM to 4 PM peak hours, a trip assignment ("Level 2") screening assessment was conducted for the Proposed Project. As part of the Level 2 screening assessment, the Proposed Project trips have been assigned to specific intersections near the Development Site. Further quantified analyses to assess the potential impacts of the construction of the Proposed Project on the transportation system would be warranted if the trip assignments were to identify key intersections incurring 50 or more peak hour vehicle-trips.

The Proposed Project's construction vehicle trips shown in **Table 16-4** have been assigned to area intersections based on the most likely travel routes to and from the project site, prevailing travel patterns, commuter origin-destination (O-D) summaries from the census data, locations of parking facilities, and nearby land use and population characteristics. **Table 16-5** and **Figure 16-1** shows the available study area off-street parking facilities and their utilization during the weekday AM, midday, and PM peak periods. Trucks would follow NYCDOT truck routes and would make deliveries on East 66th Street between First Avenue and Second Avenue.



Development Site

Rezoning Area

Study Area (1/4-mile perimeter)

Off-Street Parking Facility

Off-Street Parking Facilities

Figure 16-1

Table 16-5
Existing Off-Street Parking Utilization – ¼-Mile Study Area

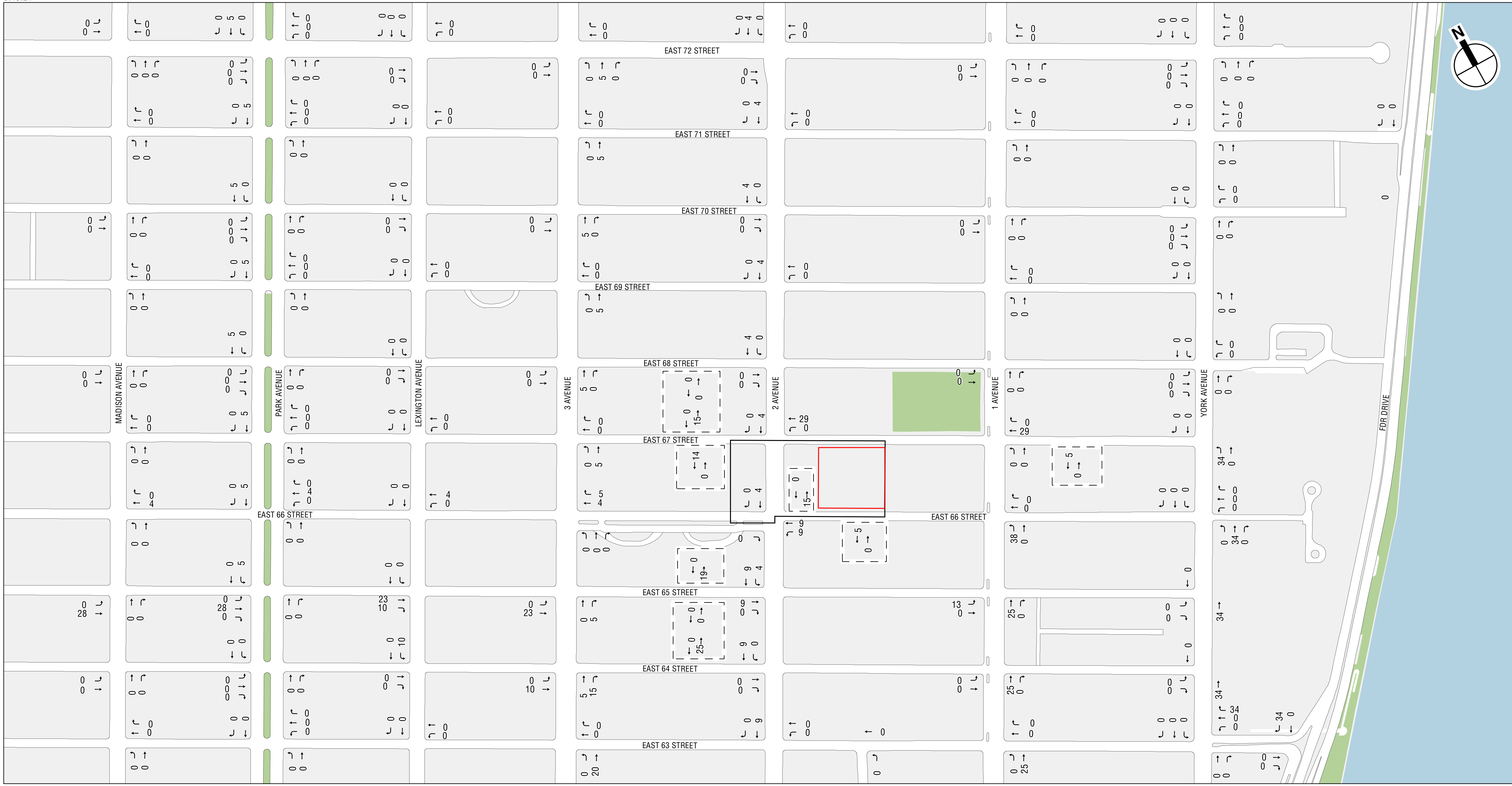
Map #	Name/Address	License Number	Licensed Capacity	Utilization Rate			Utilized Spaces			Available Spaces		
				AM	MD	PM	AM	MD	PM	AM	MD	PM
1	SP Plus Corporation / 301 E 66th Street	2021747	70	30%	45%	35%	21	32	25	49	38	45
2	315 E 65th Parking LLC / 322 E 66th Street	1251169	50	50%	70%	60%	25	35	30	25	15	20
3	Pronto Parking Corp. / 169 E 65th Street	1182377	70	70%	80%	70%	49	56	49	21	14	21
4	Bristol 65 Parking LLC / 200-210 E 65th Street	1406780	153	80%	80%	70%	122	122	107	31	31	46
5	SP Plus Corporation / 222 E 65th Street	2020005	300	70%	80%	65%	210	240	195	90	60	105
6	Eastside 65 Parking LLC / 200 E 66th Street	2054402	255	70%	80%	70%	179	204	179	76	51	76
7	301 Park Corp. / 301 E 64th Street	932155	84	75%	90%	50%	63	76	42	21	8	42
8	245 E Garage Corp. / E 63rd Street	1379214	225	80%	90%	90%	180	203	203	45	22	22
9	200 East Parking Corp. / 1081 Third Avenue	1181124	116	100%	75%	50%	116	87	58	0	29	58
10	160 East Parking Corp. / 189 E 64th Street	1036915	150	90%	90%	90%	135	135	135	15	15	15
11	188 East 64th Garage LLC / 188 E 64th Street	2083545	100	70%	80%	70%	70	80	70	30	20	30
12	Capital Parking LLC / 166 E 63rd Street	0469741	56	70%	80%	70%	39	45	39	17	11	17
13	Uptown Parking LLC / 201-207 E 63rd Street	1181493	100	70%	80%	70%	70	80	70	30	20	30
14	220 E 63rd Street Garage Corp. / 220 E 63rd Street	1181079	83	80%	100%	95%	66	83	79	17	0	4
15	250 E 63rd Garage Corp. / 250 E 63rd Street	1184299	39	70%	80%	70%	27	31	27	12	8	12
16	301-63 Garage LLC / 301 E 63rd Street	1470793	39	90%	95%	85%	35	37	33	4	2	6
17	Enterprise 62nd Parking LLC / 301 E 62nd Street	1396795	40	75%	80%	80%	30	32	32	10	8	8
18	Quik Park East 67th Street LLC / 400 East 67th Street	1329614	142	90%	90%	90%	128	128	128	14	14	14
19	Quik Park Third Ave LLC / 1142 Third Avenue	2017620	120	90%	90%	90%	108	108	108	12	12	12
20	Quik Park East 65th Street LLC / 403 East 65th Street	1228864	108	70%	80%	70%	76	86	76	32	22	32
21	East 65th Street Garage LLC / 1189 First Avenue	2086766	69	60%	60%	60%	41	41	41	28	28	28
22	337 Garage LLC / 337 East 64th Street	2047160	300	80%	80%	80%	240	240	240	60	60	60
23	SP+ Parking / 450 East 63rd Street	2056035	290	30%	80%	30%	87	232	87	203	58	203
24	Enterprise York Garage / 1175 York Avenue	1460721	94	80%	100%	100%	75	94	94	19	0	0
25	East 61st Street Garage LLC / 425 East 61st	2054405	225	80%	80%	30%	180	180	68	45	45	157
26	GMC 200 E. 2nd Street Garage Partners LLC / 203 E. 71st Street	141488	98	80%	90%	85%	78	88	83	20	10	15
27	71st St. Garden Garage Inc. / 211 E. 70th Street	735058	150	80%	95%	75%	120	143	113	30	7	37
28	Rainbow Parking / 300 E. 71st Street	367503	57	90%	100%	80%	51	57	46	6	0	11
29	355 E. 71st St. Garage LLC / 1325 First Avenue	2076388	268	50%	80%	90%	134	214	241	134	54	27
30	Quik Park York Ave LLC / 400 E. 71st Street	1192968	180	60%	90%	90%	108	162	162	72	18	18
31	Independent Parking LLC / 417 E. 71st Street	897040	77	25%	80%	60%	19	62	46	58	15	31
32	The NY Presbyterian Hospital Laurence G. Paysun House / 422-438 E. 71st Street	2072506	174	70%	80%	70%	122	139	122	52	35	52
33	LAZ Parking NY/NJ LLC / 5-7 E. 70th Street	2072507	175	65%	95%	85%	114	166	149	61	9	26
34	Cornell University Weill Greenburg Center / 1305 York Avenue	2060133	95	70%	80%	70%	67	76	67	28	19	28
35	Jacob S. Lasdon House Garage / 404-430 E. 70th Street	369751	190	75%	90%	90%	143	171	171	47	19	19
36	Park 70 LLC / 400 E. 70th Street	N/A	56	90%	90%	90%	50	50	50	6	6	6
37	May Parking Corp / 330 E. 70th Parking	1215447	25	50%	90%	80%	13	23	20	12	2	5
38	315 E. 70 Garage Corp. / 315 E. 70th Street	1266504	49	80%	90%	80%	39	44	39	10	5	10
39	Granite Parking LLC / 301-312 E. 70th Street	976027	44	75%	75%	80%	33	33	35	11	11	9
40	Gemat Parking Corp. / 233 E. 69th Street	2026148	53	90%	100%	60%	48	53	32	5	0	21
41	I.T. Palace Realty Corp. / 200 E. 69th Street	1460959	200	75%	85%	90%	150	170	180	50	30	20
42	222 E. 69th Garage Corp. / 222 E. 69th Street	367720	157	90%	80%	80%	141	126	126	16	31	31
43	69 Enterprise Parking LLC / 219 E. 69th Street	1306493	52	60%	90%	90%	31	47	47	21	5	5
44	Parking Systems Plus Inc. / 301 E. 69th Street	2070280	40	100%	100%	60%	40	40	24	0	0	16
45	67th and Second Ave Garage Inc. / 254 E. 68th Street	699352	150	70%	80%	70%	105	120	105	45	30	45
46	LAZ Parking NY/NJ LLC / 265 E. 66th Street	2028693	197	70%	80%	70%	138	158	138	59	39	59
47	SP Plus Corporation / 216-222 E. 67th Street	2055261	27	75%	75%	100%	20	20	27	7	7	0
48	20166 Parking LLC / 202 E. 67th Street	2084415	106	30%	65%	75%	32	69	80	74	37	26
1/4-Mile Area Totals			**5,898**	**71%**	**83%**	**73%**	**4,168**	**4,918**	**4,318**	**1,730**	**980**	**1,580**

Note: MD = Midday
Source: Survey conducted by AKRF Inc. October 2019

Table 16-6
Construction Traffic Level 2 Sensitivity Test Results – Selected Analysis Locations

Intersection	Construction Project Generated Vehicle Trips (Weekday)	
	AM	PM
Fifth Avenue and E 67th Street	4	25
Fifth Avenue and E 65th Street	28	1
Madison Avenue and E 66th Street	4	25
Madison Avenue and E 65th Street	28	1
Park Avenue and E 66th Street	9	30
Park Avenue and E 65th Street	33	30
Park Avenue and E 64th Street	0	29
Park Avenue and E 63rd Street	0	29
Lexington Avenue and E 65th Street	33	21
Lexington Avenue and E 63rd Street	0	49
Lexington Avenue and E 61st Street	0	25
Third Avenue and E 65th Street	28	2
Third Avenue and E 64th Street	30	1
Third Avenue and E 63rd Street	20	30
Third Avenue and E 62nd Street	20	1
Second Avenue and E 68th Street	4	30
Second Avenue and E 67th Street	33	1
Second Avenue and E 66th Street	22	25
Second Avenue and E 64th Street	9	46
Second Avenue and E 63rd Street	9	36
First Avenue and E 68th Street	0	34
First Avenue and E 67th Street	29	5
First Avenue and E 66th Street	38	4
First Avenue and E 65th Street	38	4
First Avenue and E 64th Street	25	11
First Avenue and E 63rd Street	25	1
First Avenue and E 62nd Street	25	1
First Avenue and E 61st Street	35	1
First Avenue and E 60th Street	25	1
First Avenue and E 59th Street	25	1
First Avenue and E 58th Street	25	1
York Avenue and E 68th Street	0	34
York Avenue and E 67th Street	34	34
York Avenue and E 66th Street	34	34
York Avenue and E 65th Street	34	34
York Avenue and E 64th Street	34	44
York Avenue and E 63rd Street	34	44
FDR Drive and E 63rd Street	34	44
FDR Drive and E 62nd Street	0	34

Figures 16-2 and 16-3 show the total Construction Vehicle trips in PCEs for the Proposed Project for the weekday AM and PM peak hours. As shown in **Table 16-6** and **Figures 16-2 and 16-3,** the project generated traffic assignments would not result in more than 50 PCE vehicle-trips at any intersection in the vicinity of the project site, which is the *CEQR Technical Manual*'s threshold for requiring a detailed traffic analysis for construction conditions. Therefore, a detailed traffic analysis is not warranted and the Proposed Project is not expected to result in any significant adverse construction traffic impacts.



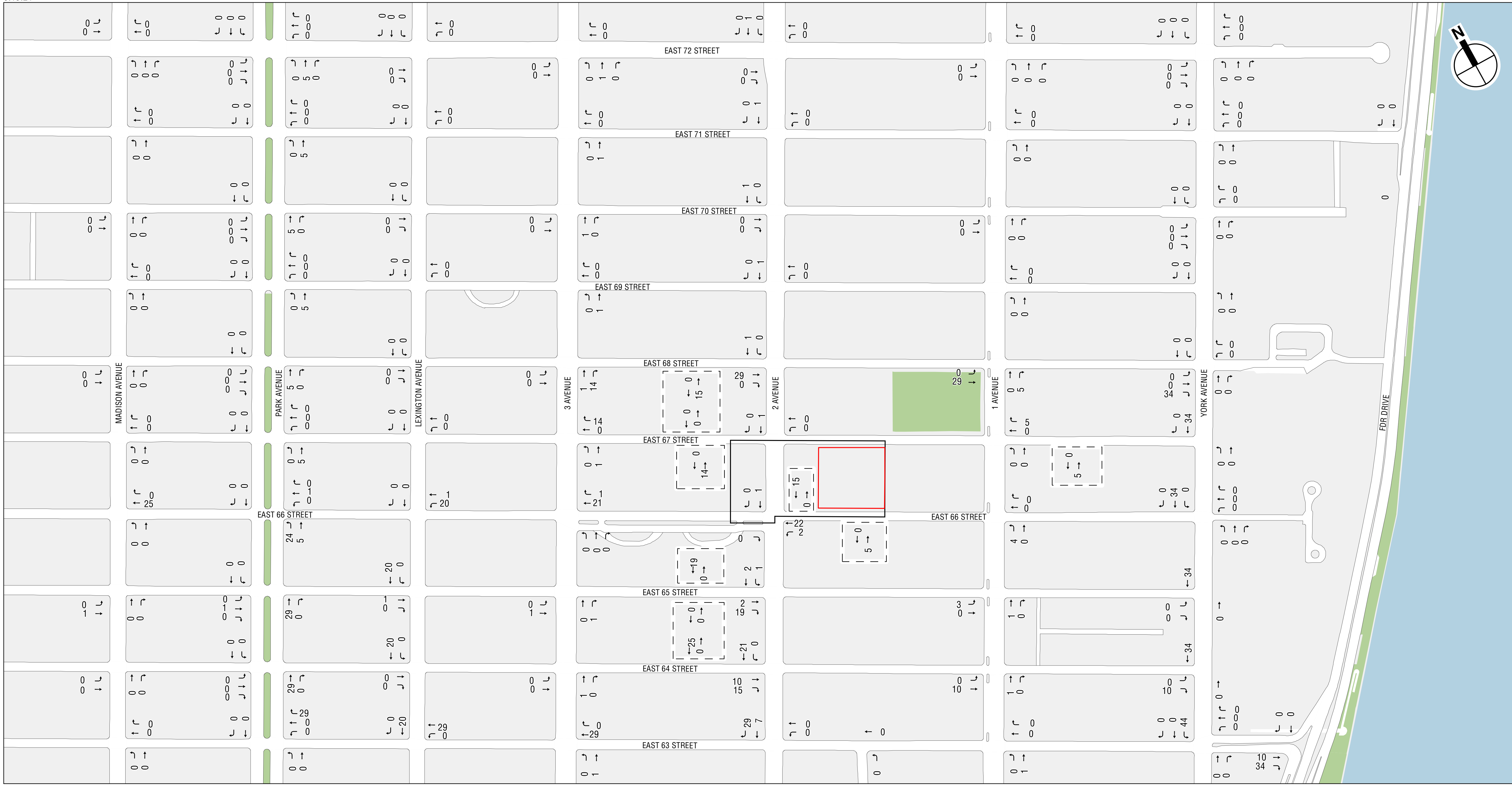
Development Site

Rezoning Area

Garage

Total Construction PCE Trips
Weekday AM Construction Peak Hour (6 AM - 7 AM)

3.15.21



Development Site

Rezoning Area

Garage

0 400 FEET

Total Construction PCE Trips

Weekday PM Construction Peak Hour (3 PM - 4 PM)

Figure 16-3

PARKING

As described above, the estimated number of workers would be 334 per day during peak construction. It is estimated that approximately 43 percent of construction workers would commute to the Development Site by private autos at an average occupancy of approximately 1.17 persons per vehicle. The anticipated construction activities are therefore projected to generate a maximum parking demand of 123 parking spaces during peak construction. This parking demand is expected to be accommodated by off-street spaces and parking facilities within a ¼-mile radius of the Development Site, where approximately 1,730 public parking spaces are currently available during the peak morning parking utilization period, according to surveys conducted in October 2019, as shown in **Table 16-5**. Therefore, the Proposed Project would not result in any significant adverse parking impacts during construction.

TRANSIT

Based on 2000 U.S. Census data on workers in the construction and excavation industry, it is estimated that approximately 56 percent of construction workers would commute to the Development Site via transit (bus and subway). The site is located in the vicinity of multiple transit options, including the F, N, Q, R, and No. 4, 5, and 6 trains and the M15, M31, M66, M98, M101, M102, and M103 bus routes. During the peak construction worker period (a maximum of 334 average daily construction workers in the 7 AM to 3:30 PM shift), an estimated 187 workers would travel by transit. With 80 percent of these workers arriving or departing during the construction peak hours, the estimated number of peak-hour transit trips would be 150, which would be well below the 200-transit-trip *CEQR Technical Manual* analysis threshold for detailed analysis. Therefore, the Proposed Project would not result in any significant adverse construction transit impacts.

PEDESTRIANS

As summarized above, up to 334 average daily construction workers are projected in the 7 AM to 3:30 PM shift during peak construction for the Proposed Project. With 80 percent of these workers arriving or departing during the construction peak hours (6 AM to 7 AM and 3 PM to 4 PM), the corresponding numbers of peak-hour pedestrian trips traversing the area's sidewalks, corners, and crosswalks would be approximately 267.

which exceeds the *CEQR Technical Manual* analysis threshold of 200 pedestrian-trips (a "Level 1" screening). Although the Level 1 screening would be exceeded, these pedestrian trips would be distributed among various pedestrian elements, i.e., sidewalks, crosswalks, and corner reservoirs, throughout the Project Area. Since the construction workers would enter and exit the site from either the East 66th Street or East 67th Street frontage, the pedestrian trips would not concentrate on any single pedestrian element, and the Level 2 trip assignment threshold would not be exceeded. Therefore, the Proposed Project would not result in any significant adverse construction pedestrian impacts.

AIR QUALITY

The 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 construction 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. Chapter 11, "Air Quality," contains a review of these air pollutants; applicable regulations, standards, and benchmarks; and general methodology for the air quality analyses. Additional details relevant only to the construction air quality analysis methodology are presented in this section.

EMISSIONS REDUCTION MEASURES

Construction activity in general, and large-scale construction in particular, has the potential to adversely affect air quality as a result of diesel emissions. Measures would be taken to reduce pollutant emissions during construction in accordance with all applicable laws, regulations, and building codes. In addition, contractors would be required under contract specifications to implement an emissions reduction program to minimize the air quality effects from construction of the Proposed Project, consisting of the following components:

- *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 Development 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 Development 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 includes, but may not be limited to, hoists and small equipment (such as welders).
- *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 PM, CO, NO_x, and hydrocarbons. To the extent practicable, all diesel-powered non-road construction equipment 50 horsepower (hp) or greater would meet at least the Tier 3[1] emissions standard.

[1] The first federal regulations for new non-road diesel engines were adopted in 1994, and adopted by EPA into regulation in a 1998 Final Rulemaking. The 1998 regulation introduces Tier 1 emissions standards for all equipment 50 hp and greater and phases in the increasingly stringent Tier 2 and Tier 3 standards for equipment manufactured in 2000 through 2008. In 2004, the EPA introduced Tier 4 emissions standards with a phased-in period of 2008 to 2015. The Tier 1 through 4 standards regulate the EPA criteria pollutants,

- *Best Available Tailpipe Reduction Technologies*. Non-road diesel engines with a power rating of 50 hp or greater and controlled truck fleets (i.e., truck fleets under long-term contract with the project) including but not limited to concrete mixing and pumping trucks would utilize the best available tailpipe (BAT) technology for reducing diesel particulate matter (DPM) emissions. Diesel particulate filters (DPFs) have been identified as being the tailpipe technology currently proven to have the highest reduction capability. Construction contracts would specify that all diesel non-road engines rated at 50 hp or greater would utilize DPFs, either installed by the original equipment manufacturer or retrofitted. Retrofitted DPFs must be verified by EPA or the California Air Resources Board. Active DPFs or other technologies proven to achieve an equivalent reduction may also be used. The use of DPFs for diesel engines meeting the Tier 3 emissions standard achieves similar emission reductions as the newer Tier 4 particulate matter emission 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, school) in the area, January 2023 and the 12-month period from November 2022 to October 2023 were identified as worst-case short-term and annual construction periods, respectively, since the highest project-wide emissions were predicted in these periods. During these times, excavation and foundation activities associated with the Proposed Project is anticipated to occur. In addition, the worst-case annual construction period also includes demolition activities.

Dispersion of the relevant air pollutants from the construction sites during these periods were 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 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

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including PM, hydrocarbons (HC), NO_x and carbon monoxide (CO). Prior to 1998, emissions from non-road diesel engines were unregulated. These engines are typically referred to as Tier 0.

Simulator (MOVES2014b) 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 MOVES2014b emission model. The emission factor calculations took into account any emissions reduction measures as described above, under “Emissions Reduction Measures,” that would be required for the Proposed Project.

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 the Proposed Project’s construction sources was 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 analyses.

Meteorological Data

The meteorological data set consists of five consecutive years of meteorological data: surface data collected at the LaGuardia Airport National Weather Service Station (2015 to 2019), 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 and were consistent with the background concentrations used for the operational stationary source air quality analysis (see Chapter 11, “Air Quality”).

Receptor Locations

Receptors were placed at locations that would be publicly accessible, at residential, school, and other sensitive uses at both ground level and elevated locations, at adjacent sidewalk locations, at publicly accessible open spaces, and at completed portions of the Proposed Project, where applicable.

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, MOVES2014b.[2] 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.[3]

On-Road Dust Emissions

$PM_{2.5}$ emission rates were determined with road dust to account for their impacts. However, road dust was not included in the annual average $PM_{2.5}$ microscale analyses, as per current *CEQR Technical Manual* guidance used for mobile source analysis. Road dust emission factors were calculated according to the latest procedure delineated by EPA.[4] An average weight of 20 tons and 2.5 tons was assumed for construction trucks and worker vehicles in the analyses, respectively.

CONSTRUCTION AIR QUALITY ANALYSIS RESULTS

Maximum predicted concentrations during the representative worst-case construction periods for the Proposed Project are presented in **Table 16-7**. To estimate the maximum total pollutant NO_2, CO, and PM_{10} concentrations, the modeled concentrations from the Proposed Project were added to a background value that accounts for existing pollutant concentrations from other nearby sources. As shown in **Table 16-7**, 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.[5] Emissions from the other less intensive construction periods would be less than the emissions during the modeled worst case periods; therefore, the resulting

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[2] EPA, Motor Vehicle Emission Simulator (MOVES), User Guide for MOVES2014a, November 2015.

[3] DEC, Redesignation Request and Maintenance Plan for the 1997 Annual and 2006 24-Hour $PM_{2.5}$ NAAQS Appendix D – New York State On-Road Motor Vehicle Emission Budget MOVES Technical Support Documentation, June 2013.

[4] 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.

[5] The *CEQR Technical Manual* 24-hour $PM_{2.5}$ *de minimis* criterion is equal to half the difference between the 24-hour background concentration (21.3 $\mu g/m^3$) and the 24-hour standard (35 $\mu g/m^3$).

concentrations from these non-peak periods are expected to be less than the concentrations presented in **Table 16-7**. Therefore, construction of the Proposed Project would not result in significant adverse air quality impacts due to construction sources.

Table 16-7
Maximum Pollutant Concentrations

Pollutant	Averaging Period	Units	Maximum Modeled Impact	Background Concentration(1)	Total Concentration	Criterion
NO_2	Annual	µg/m^3	5.9	37.9	43.8	100(2)
CO	1-hour	ppm	3.3	1.7	5.0	35(2)
	8-hour	ppm	0.9	1.1	2.0	9(2)
PM_{10}	24-hour	µg/m^3	11.4	39.3	50.7	150(2)
$PM_{2.5}$	24-hour	µg/m^3	1.7	N/A	N/A	8.4(3)
	Annual—Local	µg/m^3	0.26	N/A	N/A	0.30(4)
	Annual—Neighborhood	µg/m^3	0.003	N/A	N/A	0.10(4)

Notes:
N/A—Not Applicable
1 The background levels are based on the most representative concentrations monitored at DEC ambient air monitoring stations (see Table 11-3 in Chapter 11, "Air Quality").
2 NAAQS.
3 $PM_{2.5}$ *de minimis* criterion—24-hour average, not to exceed more than half the difference between the background concentration and the 24-hour standard of 35 µg/m^3.
4 $PM_{2.5}$ *de minimis* criterion—annual (local and neighborhood scale).

NOISE

INTRODUCTION

Potential impacts on community noise levels during construction could result from construction equipment operation and construction vehicles and delivery vehicles traveling to and from the proposed development site. Noise and vibration levels at a given location are dependent on the kind and number of pieces of construction equipment being operated, the acoustical utilization factor of the equipment (i.e., the percentage of time a piece of equipment is operating at full power), the distance from the construction site, and any shielding effects (from structures such as buildings, walls, or barriers). Noise levels caused by construction activities would vary widely, depending on the stage of construction and the location of the construction relative to receptor locations. The most significant construction noise sources are expected to be impact equipment such as excavators with hydraulic break rams, as well as the tower crane and movements of trucks.

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

SOUND LEVEL DESCRIPTORS

Chapter 11, "Noise," defines the sound level descriptors. The $L_{eq(1)}$ is the noise descriptor recommended for use in the *CEQR Technical Manual* for vehicular traffic and construction noise impact evaluation, and is used to provide an indication of highest expected sound levels. The 1-hour L_{10} is the noise descriptor used in the *CEQR Technical Manual* noise exposure guidelines. The maximum 1-hour equivalent sound level ($L_{eq(1)}$) and maximum 1-hour L_{10} were selected as the noise descriptors used in the construction noise impact evaluation.

CONSTRUCTION NOISE IMPACT CRITERIA

Chapter 22, Section 100, of the *CEQR Technical Manual* breaks construction duration into "short-term" and "long-term" and states that construction noise is not likely to require analysis unless it "affects a sensitive receptor over a long period of time." Consequently, the construction noise analysis considers both 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 produce noise ("receptors") in evaluating potential construction noise effects.

The noise impact criteria described in Chapter 19, Section 410, of the *CEQR Technical Manual* serve as a screening-level threshold for potential construction noise impacts. If construction of a proposed project would not result in any exceedances of these criteria at a given receptor, then that receptor would not have the potential to experience a construction noise impact. However, as is the case with the proposed project, if construction would result in exceedances of these noise impact criteria, then further consideration of the intensity and duration of construction noise is warranted at that receptor. The screening level noise impact criteria for mobile and on-site construction activities are as follows:

- If the No Action noise level is less than 60 dBA $L_{eq(1)}$, a 5 dBA $L_{eq(1)}$ or greater increase would require further consideration.
  - If the No Action noise level is between 60 dBA $L_{eq(1)}$ and 62 dBA $L_{eq(1)}$, a resultant $L_{eq(1)}$ of 65 dBA or greater would require further consideration.
- If the No Action noise level is equal to or greater than 62 dBA $L_{eq(1)}$, or if the analysis period is a nighttime period (defined in the CEQR criteria as being between 10 PM and 7 AM), the threshold requiring further consideration would be 3 dBA $L_{eq(1)}$.

In addition to the CEQR construction criteria above, determination of significant adverse construction noise impact would be considered based on the intensity and duration (i.e., noise level increment of 15 dBA or more for prolonged period of 12 months or more or noise level increment of 20 dBA or more for prolonged period of 3 months or more).

NOISE ANALYSIS FUNDAMENTALS

As stated above, construction activities for the proposed project would be expected to result in increased noise levels as a result of the operation of construction equipment on-site, and the movement of construction-related vehicles (i.e., worker trips, and material and equipment trips) on the roadways to and from the proposed development site. The effect of each of these noise sources was evaluated. The results presented below show the effects of construction activities (i.e., noise due to both on-site construction equipment and construction-related vehicle operation) on noise levels at nearby noise receptor locations.

Noise from the 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 site is a function of the following:

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

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 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) and transportation sources (e.g., roads, highways, railroad lines, busways, waterways, airports). The model takes into account the reference sound pressure levels of the noise sources at 50 feet, attenuation with distance, ground contours, reflections from barriers and structures, attenuation due to shielding, etc. The CadnaA model is based on the acoustic propagation standards promulgated in International Standard ISO 9613-2. 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*.

Geographic input data to be used with the CadnaA model includes CAD drawings defining planned site work areas, adjacent building footprints and heights, locations of streets, and locations of sensitive receptors. For each analysis period, the geographic location and operational characteristics of each piece of construction equipment were input to the model. Reflections and shielding by barriers and project elements erected on the construction site and shielding from adjacent buildings were also accounted for in the model. The model produces A-weighted Leq(1) noise levels at each receptor location for each analysis period, as well as the contribution from each noise source.

NOISE ANALYSIS METHODOLOGY

The construction noise methodology involved the following process:

1. **Select analysis hours for construction mobile source noise analysis.** The 6 AM to 7 AM hour was selected as the analysis hour because this would be the hour when the highest number of construction worker auto and construction truck trips to and from the construction site would simultaneously occur.
2. **Conduct construction mobile source noise analysis**. At each of the roadway segments analyzed for construction traffic, the construction worker vehicle and construction truck trips during the analysis hour was converted to Noise PCEs and compared to the existing level of Noise PCEs to determine whether there would be a potential doubling, which would result in an exceedance of CEQR construction noise screening thresholds (i.e., a 3 dBA increase in noise levels).
3. **Select analysis hours for cumulative on-site equipment and construction truck noise analysis.** The 7 AM to 8 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.
4. **Select receptor locations for cumulative on-site equipment and construction truck noise analysis.** Selected receptors represent open space, residential, 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 development site by construction trucks.
5. **Establish existing noise levels at selected receptors.** Measured noise levels from the approved 2001 MSKCC Rezoning Environmental Impact Statement (EIS) were used to establish existing noise levels in the operational noise analysis, and 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 validated based on the estimated noise levels from the 2001 MSKCC Rezoning EIS and used to calculate baseline noise levels at the other noise receptor locations included in the analysis.
6. **Establish 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 effect. The selected time periods, which represent the construction tasks with the greatest potential to result in noise impacts, are described below in the "Analysis Periods" section.
7. **Calculate construction noise levels for each analysis period at each receptor location**. Given the on-site equipment and construction truck trips expected during each of the analysis periods, and the location of the equipment according to construction logistics diagrams, a CadnaA model file for each analysis period was created. All model files include each of the construction noise sources during the analysis period and hour, calculation points representing multiple locations on various façades and floors of the associated receptors previously identified, as well as the noise control measures that would be used on the construction site.
8. **Determine 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.

9. **Compare 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, which are described below.
10. **Establish construction noise duration**. For each receptor, the noise level increments in each analysis period were evaluated to determine the duration during construction that the receptor would experience exceedances of impact criteria.
11. **Identify potential construction noise impacts**. At each existing receptor where exceedances of construction noise impact criteria are predicted, based on the intensity and duration of predicted noise level increases, a determination was made as to whether the Proposed Actions would have the potential to result in significant adverse construction noise impacts.

NOISE ANALYSIS PERIODS

The detailed construction noise analysis estimated construction noise levels based on projected activity and equipment usage as well as the level of construction traffic for various phases of construction on the Development Site. Seven time periods during construction were selected for detailed analysis. These selected to capture each major construction stage (e.g., demolition, excavation/foundation work, superstructure work, interior fit-out work) at the building to be constructed under the Proposed Actions. These are the time periods with the potential to result in the maximum incremental construction noise at nearby receptors (i.e., time periods when the building would be under construction using noisy equipment). Each analysis time period conservatively represents 3 to 12 months of time based on the duration of activities that would be underway during the time period.

The selected analysis periods are shown in **Table 16-8**.

Table 16-8
Summary of Construction Noise Analysis Period

Time (Year / Month)	Construction Activities
2022 / January	Demolition / Excavation
2022 / December	Foundation
2023 / October	Superstructure
2024 / March	Superstructure / Interiors
2024 / November	Interiors
2025 / September	Interiors / Sitework
2025 / December	Interiors

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. Additionally, construction under the Proposed Actions would incorporate some noise control measures that go beyond those required by Code. Specific noise control measures would be incorporated in noise mitigation plan(s) required under the *New York City Noise Control Code*. These measures could 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 would be implemented in accordance with the *New York City Noise Code*:

- Equipment that meets the sound level standards specified in Subchapter 5 of the *New York City Noise Control Code* would be utilized from the start of construction. **Table 16-9** shows the noise levels for typical construction equipment and the mandated noise levels for the equipment that would be used for construction of the proposed project.
- As early in the construction period as logistics would allow, diesel- or gas-powered equipment would be replaced with electrical-powered equipment such as welders, water pumps, bench saws, and table saws (i.e., early electrification) to the extent feasible and practicable. Where electrical equipment cannot be used, diesel or gas-powered generators and pumps would be located within buildings to the extent feasible and practicable.
- Where feasible and practicable, construction sites would be configured to minimize back-up alarm noise. In addition, all trucks would not be allowed to idle more than 3 minutes at the construction site based upon Title 24, Chapter 1, Subchapter 7, Section 24-163 of the New York City Administrative Code.
- Contractors and subcontractors would be required to properly maintain their equipment and mufflers.

Table 16-9
Typical Construction Equipment Noise Emission Levels (dBA)

Equipment List	L_{max} Noise Level at 50 feet[1]
Bar Bender	80
Circular Saw	70[2]
Compressor	80
Concrete Pump	82
Concrete Truck	85
Concrete Saw	90
Concrete Trowel	67
Concrete Vibrator	76
Cranes (Mobile)	85
Cranes (Tower)	85
Drill Rig Truck	84
Excavator	85
Forklift	64
Front End Loader / Backhoe	80
Generator	82
Hoist	75
Hydraulic Break Ram	90
Impact Wrench	76
Jack Hammer	85
Mounted Impact Hammer (Hoe Ram)	90
Rivet Buster / Chipping Gun	85
Roller	85
Rock Drill	85
Scissor Lift	70[2]
Table Saw	70[2]
Water Jet Deleading (Sprayer)	85
Welding Machine	73

Source:
[1] *Rules for Citywide Construction Noise Mitigation*, Chapter 28, DEP, 2007.
[2] Project-specific equipment noise level commitment

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

- Where logistics allow, noisy equipment, such as cranes, concrete pumps, concrete trucks, and delivery trucks, would be located away from and shielded from sensitive receptor locations;
- 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);
- Concrete trucks would be required to be located inside site-perimeter noise barriers while pouring or being washed out; and
- Path noise control measures (i.e., portable noise barriers, panels, enclosures, and acoustical tents) for certain dominant noise equipment to the extent feasible and practical based on the

results of the construction noise calculations. The details to construct portable noise barriers, enclosures, tents, etc. are shown in DEP's *Rules for Citywide Construction Noise Mitigation*.[6]

NOISE RECEPTOR SITES

Within the study area, 189 receptor locations close to the Development Site 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 were either 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 were selected at multiple elevations. At open space locations, receptors were selected at street level. The receptor sites selected for detailed analysis are representative locations where maximum project effects due to construction noise would be expected.

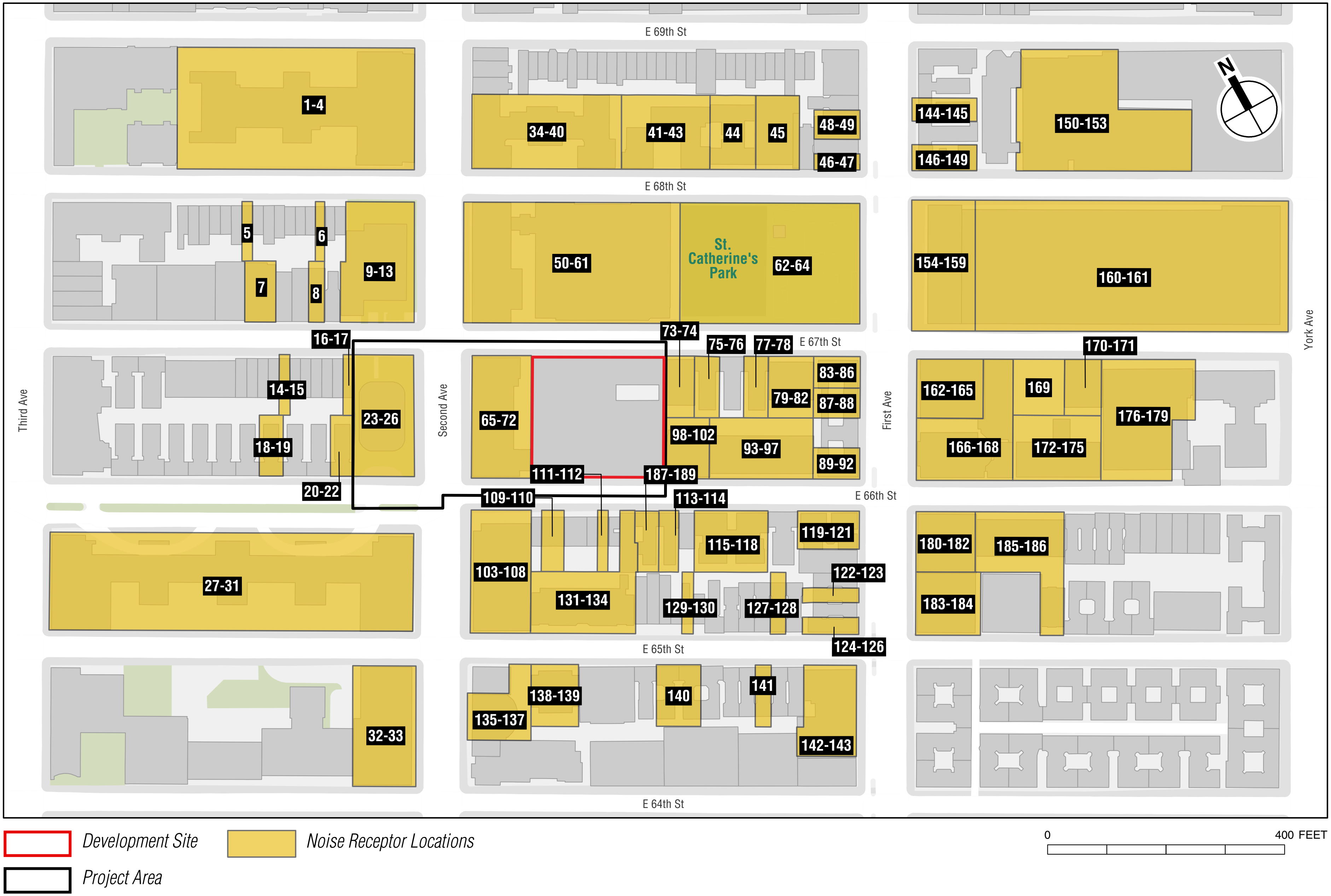
The measured at-grade noise levels at 6 locations adjacent to the proposed development site as presented in Chapter 13, "Noise," were also used to determine existing noise levels in the study area.

Figure 16-4 shows the locations of the 189 noise receptor sites, and **Table 16-10** lists the 6 noise measurement sites (i.e., sites M1 to M6) as well as the 189 noise receptor sites (i.e., sites 1 to 189) and the associated land use at these sites.

Table 16-10
Noise Receptors by Location and Land Use

Receptor	Location	Block / Lot	Associated Land Use
M1	East 69th Street between First and York Avenues	N/A	Noise Measurement Location
M2	East 68th Street between First and York Avenues	N/A	Noise Measurement Location
M3	East 67th Street between First and York Avenues	N/A	Noise Measurement Location
M4	East 66th Street between First and York Avenues	N/A	Noise Measurement Location
M5	First Avenue between East 67th Street and East 68th Street	N/A	Noise Measurement Location
M6	York Avenue between East 67th Street and East 68th Street	N/A	Noise Measurement Location
1-4	215 East 68th Street	Block 1423 / Lot 10	Mixed Residential and Commercial
5	234 East 68th Street	Block 1422 / Lot 36	Residential
6	248 East 68th Street	Block 1422 / Lot 31	Residential
7	219 East 67th Street	Block 1422 / Lot 7501	Mixed Residential and Commercial
8	227 East 67th Street	Block 1422 / Lot 18	Residential
9-13	1283 Second Avenue	Block 1422 / Lot 21	Mixed Residential and Commercial
14-15	228 East 67th Street	Block 1421 / Lot 21	Mixed Residential and Commercial
16-17	242 East 67th Street	Block 1421 / Lot 21	Mixed Residential and Commercial
18-19	221 East 66th Street	Block 1421 / Lot 5	Mixed Residential and Commercial
20-22	227 East 66th Street	Block 1421 / Lot 5	Mixed Residential and Commercial
23-26	265 East 65th Street	Block 1421 / Lot 21	Mixed Residential and Commercial
27-31	200 East 66th Street	Block 1420 / Lot 7501	Mixed Residential and Commercial

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



Construction Noise Receptor Locations

Figure 16-4

NEW YORK BLOOD CENTER—CENTER EAST

Table 16-10 (cont'd)
Noise Receptors by Location and Land Use

Receptor	Location	Block / Lot	Associated Land Use
32-33	248 East 65th Street	Block 1419 / Lot 7501	Mixed Residential and Commercial
34-40	1296 Second Avenue	Block 1443 / Lot 1	Residential
41-43	333 East 68th Street	Block 1443 / Lot 11	Residential
44	345 East 68th Street	Block 1443 / Lot 17	Hospital
45	353 East 68th Street	Block 1443 / Lot 20	Hospital
46-47	359 East 68th Street	Block 1443 / Lot 7501	Mixed Residential and Commercial
48-49	1269 First Avenue	Block 1443 / Lot 25	Residential
50-61	300 East 68th Street	Block 1442 / Lot 1	School
62-64	St. Catherine's Park	Block 1442 / Lot 15	Open Space
65-72	301 East 66th Street	Block 1441 / Lots 1001–1202	Mixed Residential and Commercial
73-74	328 East 67th Street	Block 1441 / Lot 38	Library
75-76	332 East 67th Street	Block 1141 / Lot 37	Residential
77-78	338 East 67th Street	Block 1441 / Lot 33	Residential
79-82	342 East 67th Street	Block 1441 / Lot 31	Residential
83-86	1237 First Avenue	Block 1441 / Lot 30	Mixed Residential and Commercial
87-88	1233 First Avenue	Block 1441 / Lot 27	Mixed Residential and Commercial
89-92	1225 First Avenue	Block 1441 / Lot 23	Mixed Residential and Commercial
93-97	333 East 66th Street	Block 1441 / Lot 17	Residential
98-102	321 East 66th Street	Block 1441 / Lot 14	Residential
103-108	1256 Second Avenue	Block 1440 / Lot 49	Hospital
109-110	310 East 66th Street	Block 1440 / Lot 47	Residential
111-112	318 East 66th Street	Block 1440 / Lot 44	Residential
113-114	328 East 66th Street	Block 1440 / Lot 39	Mixed Residential and Commercial
115-118	340 East 66th Street	Block 1440 / Lot 33	Mixed Residential and Commercial
119-121	1219 First Avenue	Block 1440 / Lot 30	Mixed Residential and Commercial
122-126	1205 First Avenue	Block 1440 / Lot 23	Mixed Residential and Commercial
127-128	345 East 65th Street	Block 1440 / Lot 21	Residential
129-130	331 East 65th Street	Block 1440 / Lot 15	Residential
131-134	315 East 65th Street	Block 1440 / Lot 5	Residential
135-137	304 East 65th Street	Block 1439 / Lot 7501	Mixed Residential and Commercial
138-139	310 East 65th Street	Block 1439 / Lot 46	Residential
140	330 East 65th Street	Block 1439 / Lot 7502	Mixed Residential and Commercial
141	346 East 65th Street	Block 1439 / Lot 33	Residential
142-143	1199 First Avenue	Block 1439 / Lot 30	Mixed Residential and Commercial
144-145	1274 First Avenue	Block 1463 / Lot 48	Mixed Residential and Commercial
146-149	1266 First Avenue	Block 1463 / Lot 1	Mixed Residential and Commercial
150-153	411 East 68th Street	Block 1463 / Lot 7501	Church
154-159	1250 First Avenue	Block 1462 / Lot 1	Hospital
160-161	1275 York Avenue	Block 1462 / Lot 5	Hospital
162-165	400 East 67th Street	Block 1461 / Lot 7501	Mixed Residential and Commercial
166-168	1224 First Avenue	Block 1461 / Lot 1	Church
169	418 East 67th Street Playground	Block 1461 / Lot 37	Open Space
170-171	418 East 67th Street	Block 1461 / Lot 37	School

Table 16-10 (cont'd)
Noise Receptors by Location and Land Use

Receptor	Location	Block / Lot	Associated Land Use
172-175	419 East 66th Street	Block 1461 / Lot 7	School
176-179	425 East 66th Street	Block 1461 / Lot 13	Hospital
180-182	400 East 66th Street	Block 1460 / Lot 47	Mixed Residential and Commercial
183-184	1206 First Avenue	Block 1460 / Lot 1	Residential
185-186	404 East 66th Street	Block 1460 / Lot 7501	Residential
187-189	326 East 66th Street	Block 1440 / Lot 41	Mixed Residential and Commercial

MSKCC REZONING EIS NOISE DATA

MSKCC Rezoning EIS

As part of the noise analysis for the MSKCC Rezoning EIS, noise measurements were conducted at six sites. At the receptor sites, 20-minute duration noise measurements were conducted during typical weekday AM (7:15 AM–9:15 AM), midday (12:00 PM–2:00 PM), and PM (4:00 PM–6:00 PM) peak periods. The noise levels measured during the AM time period were used to represent baseline noise levels for comparison with predicted construction noise levels.

The baseline noise levels at each of the noise survey locations are shown in **Table 16-11**. Full noise survey results are shown in **Appendix D**. At all noise measurement locations, the dominant existing noise source was vehicular traffic on the adjacent roadways.

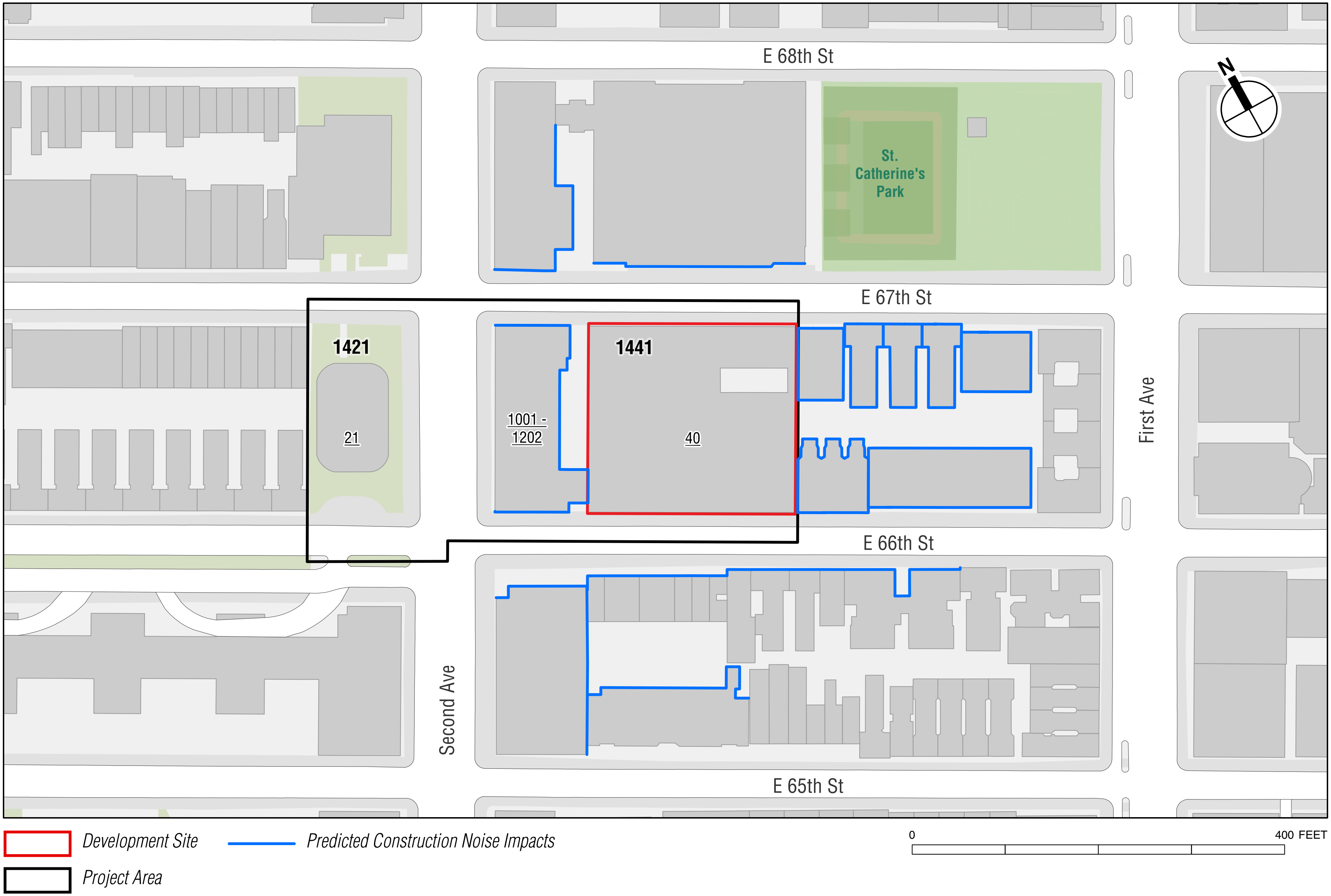
In terms of CEQR noise exposure guidelines (shown in Table 13-2 in Chapter 13, "Noise"), during the morning analysis hour, existing noise levels at sites M1 and M4 are in the "marginally acceptable" category, and existing noise levels at sites M2, M3, M5 and M6 are in the "marginally unacceptable" category.

Table 16-11
Noise Survey Results in dBA

Site	Measurement Location	L_{EQ}	L_{10}
M1	East 69th Street between First and York Avenues	67.5	69.0
M2	East 68th Street between First and York Avenues	68.9	71.0
M3	East 67th Street between First and York Avenues	70.0	71.0
M4	East 66th Street between First and York Avenues	69.1	69.5
M5	First Avenue between East 67th Street and East 68th Street	75.7	79.0
M6	York Avenue between East 67th Street and East 68th Street	71.4	74.5

CONSTRUCTION NOISE ANALYSIS RESULTS

Using the methodology described and considering the noise abatement measures specified above, cumulative noise analyses were performed to determine maximum 1-hour equivalent ($L_{eq(1)}$) noise levels that would be expected at each of the 189 noise receptor locations during each of the seven selected construction periods. This resulted in a predicted range of peak hourly construction noise levels throughout the construction period. The results of the detailed construction noise analysis are summarized in **Table 16-12** and **Figure 16-5**.



Predicted Construction Noise Impacts

Figure 16-5

Table 16-12
Construction Noise Analysis Results in dBA

Receptor	Address	Existing L_{10}	Max Total L_{10}	Max Change in L_{10}	Maximum Continuous Duration (months)	
					Exceedance of CEQR Screening Threshold	"Objectionable" Increase
1-4	215 East 68th Street	73.8	75.9	6.7	13	0
5	234 East 68th Street	67.7	68.6	0.0	0	0
6	248 East 68th Street	67.7	70.0	0.0	0	0
7	219 East 67th Street	68.0	73.0	5.2	8	0
8	227 East 67th Street	68.3	75.4	7.7	8	0
9-13	1283 Second Avenue	72.5	77.0	9.3	13	0
14-15	228 East 67th Street	69.6	70.0	0.0	0	0
16-17	242 East 67th Street	69.9	72.2	3.4	8	0
18-19	221 East 66th Street	69.9	70.7	2.7	0	0
20-22	227 East 66th Street	70.4	72.1	3.4	13	0
23-26	265 East 65th Street	72.4	78.1	8.1	13	0
27-31	200 East 66th Street	74.0	76.1	7.8	13	0
32-33	248 East 65th Street	74.0	74.3	5.3	8	0
34-40	1296 Second Avenue	73.0	75.7	7.9	13	0
41-43	333 East 68th Street	67.7	75.6	7.8	8	0
44	345 East 68th Street	67.7	74.4	6.7	13	0
45	353 East 68th Street	67.7	75.2	7.4	13	0
46-47	359 East 68th Street	75.0	75.9	5.8	13	0
48-49	1269 First Avenue	74.2	74.7	0.5	0	0
50-61	300 East 68th Street	72.9	83.9	16.2	52	12
62-64	1245 First Avenue	69.5	78.2	10.5	13	0
65-72	301 East 66th Street	73.1	87.2	19.5	52	13
73-74	328 East 67th Street	69.3	82.9	15.2	52	12
75-76	332 East 67th Street	70.4	80.5	12.8	52	0
77-78	338 East 67th Street	70.6	77.2	9.5	27	0
79-82	342 East 67th Street	69.3	77.9	10.2	27	0
83-86	1237 First Avenue	74.6	76.0	1.8	0	0
87-88	1233 First Avenue	74.5	77.0	9.3	13	0
89-92	1225 First Avenue	74.7	74.8	3.8	13	0
93-97	333 East 66th Street	70.9	81.4	13.7	52	0
98-102	321 East 66th Street	71.6	85.5	16.6	52	13
103-108	1256 Second Avenue	72.8	81.7	13.9	52	0
109-110	310 East 66th Street	69.9	85.5	15.8	52	13
111-112	318 East 66th Street	69.7	86.4	16.8	52	13
113-114	328 East 66th Street	70.5	84.9	16.1	52	13
115-118	340 East 66th Street	70.7	81.7	12.9	52	0
119-121	1219 First Avenue	74.7	76.0	6.3	13	0
122-126	1205 First Avenue	74.8	75.8	5.9	8	0
127-128	345 East 65th Street	70.7	74.6	6.9	8	0
129-130	331 East 65th Street	69.2	75.7	7.9	8	0
131-134	315 East 65th Street	69.4	80.0	12.2	52	0
135-137	304 East 65th Street	72.8	74.6	6.9	13	0
138-139	310 East 65th Street	70.6	74.9	7.2	8	0
140	330 East 65th Street	71.7	75.1	5.0	8	0
141	346 East 65th Street	71.3	74.4	4.0	3	0
142-143	1199 First Avenue	74.2	74.7	4.0	13	0
144-145	1274 First Avenue	73.6	74.9	1.9	0	0
146-149	1266 First Avenue	73.6	75.6	4.2	8	0
150-153	411 East 68th Street	68.2	71.1	3.4	5	0
154-159	1250 First Avenue	71.9	75.0	4.6	13	0
160-161	1275 York Avenue	68.3	72.8	4.8	8	0
162-165	400 East 67th Street	73.2	76.2	5.7	13	0
166-168	1224 First Avenue	73.7	75.6	4.2	8	0

Table 16-12 (cont'd)
Construction Noise Analysis Results in dBA

Receptor	Address	Existing L_{10}	Max Total L_{10}	Max Change in L_{10}	Maximum Continuous Duration (months)	
					Exceedance of CEQR Screening Threshold	"Objectionable" Increase
169	418 East 67th Street Playground	67.7	69.9	0.0	0	0
170-171	418 East 67th Street	69.2	70.8	1.6	0	0
172-175	419 East 66th Street	72.3	72.5	4.4	3	0
176-179	425 East 66th Street	69.6	69.7	0.0	0	0
180-182	400 East 66th Street	73.7	75.7	5.5	13	0
183-184	1206 First Avenue	73.7	75.9	3.5	3	0
185-186	404 East 66th Street	69.2	71.7	3.3	3	0
187-189	326 East 66th Street	70.5	86.4	17.5	52	13

The noise levels shown in **Table 16-12** are maximum 1-hour noise levels; however, noise levels resulting from construction typically fluctuate throughout the day and from day to day during each construction phase, and would not be sustained at these maximum values. Additionally, noise levels expected to result from the construction of the Proposed Project would be comparable to those from typical construction sites in New York City involving a new building with concrete slab floors and foundation. Similarly, potential disruptions to adjacent residences and other receptors from elevated noise levels generated by construction would be expected to be comparable to those that would occur immediately adjacent to a typical New York City construction site during the portions of the construction period when the loudest activities would occur.

The predicted construction noise levels would not result in increments that would be considered very objectionable (i.e., 20 dBA or greater) at any noise receptors. However, at some receptors, construction of the proposed project would result in increments that would exceed the CEQR construction noise screening thresholds and/or that would be considered objectionable (i.e., 15 dBA or greater). The potential for significant adverse impacts at these receptors was determined by evaluating the duration of these increments, as described below.

Maximum construction noise levels at the MSKCC facilities on East 66th Street and Second Avenue, the JREC, the 67th Street Library, residences immediately adjacent to the proposed development site at 301 and 321 East 66th Street, residences at 324 through 340 East 66th Street and residences at 332 East 67th Street would exceed an L_{10} of 80 dBA, and consequently be considered "clearly unacceptable" according to *CEQR Technical Manual* noise exposure guidance. The predicted "clearly unacceptable" noise levels at these receptors would occur at times during relatively short periods of peak noise generation, i.e., during times when multiple pieces of noise-intensive construction equipment would be operating simultaneously adjacent to the receptors. Construction noise levels would more generally be in the "marginally unacceptable" range throughout the construction period (i.e., times when L_{10} noise levels would be less than 80 dBA as shown in **Appendix E**).

JREC

Receptors 50 through 61 represent the JREC. Existing noise levels at these receptors are in the mid-60s dBA, which would be considered "marginally acceptable" according to *CEQR Technical Manual* noise exposure criteria.

At these receptors, construction is predicted to produce noise levels up to the mid-80s dBA, resulting in noise level increases up to 16 dBA during the most noise-intensive stages of construction (i.e., demolition), which would occur for up to approximately 12 months. Noise level increases greater than 15 dBA at these receptors, which would be considered objectionable, would occur for up to approximately 12 months. Noise level increases exceeding the *CEQR Technical Manual* construction noise screening thresholds would occur at these receptors for up to approximately 52 months. During this time, total noise levels at these receptors would be in the high-70s to mid-80s dBA. According to *CEQR Technical Manual* noise exposure criteria, maximum construction noise levels at these receptors would be in the "clearly unacceptable" category.

Based on the prediction of construction noise levels up to the mid-80s dBA resulting in construction noise level increments up to approximately 16 dBA and exceedances of the *CEQR Technical Manual* construction noise screening thresholds occurring over the course of up to 52 months, construction noise associated with the Proposed Project would result in a temporary significant adverse impact at receptors at the JREC. These receptors are discussed further in Chapter 17, "Mitigation."

Receptors at 301 and 321 East 66th Street

Receptors 65 through 72 and 98 through 102 represent the residential receptors immediately adjacent to the proposed development site at 301 and 321 East 66th Street. Existing noise levels at these receptors are in the mid-60s dBA, which would be considered "marginally acceptable" according to *CEQR Technical Manual* noise exposure criteria.

At these receptors, construction is predicted to produce noise levels up to the mid-80s dBA, resulting in noise level increases up to 19 dBA during the most noise-intensive stages of construction (i.e., demolition), which would occur for up to approximately 12 months. Noise level increases greater than 15 dBA at these receptors, which would be considered objectionable, would occur for up to approximately 13 months. Noise level increases exceeding the *CEQR Technical Manual* construction noise screening thresholds would occur at these receptors for up to approximately 52 months. During this time, total noise levels at these receptors would be in the high-70s to mid-80s dBA. According to *CEQR Technical Manual* noise exposure criteria, maximum construction noise levels at these receptors would be in the "clearly unacceptable" category.

Based on the prediction of construction noise levels up to the mid-80s dBA resulting in construction noise level increments up to approximately 19 dBA and exceedances of the *CEQR Technical Manual* construction noise screening thresholds occurring over the course of up to 52 months, construction noise associated with the Proposed Project would result in a temporary significant adverse impact at receptors at 301 and 321 East 66th Street. These receptors are discussed further in Chapter 17, "Mitigation."

Receptors at the 67th Street Library

Receptors 73 through 74 represent the receptors at the 67th Street Library. Existing noise levels at these receptors are in the mid-60s dBA, which would be considered "marginally acceptable" according to *CEQR Technical Manual* noise exposure criteria.

At these receptors, construction is predicted to produce noise levels up to the low-80s dBA, resulting in noise level increases up to 15 dBA during the most noise-intensive stages of construction (i.e., demolition), which would occur for up to approximately 12 months. Noise level increases greater than 15 dBA at these receptors, which would be considered objectionable, would occur for up to approximately 12 months. Noise level increases exceeding the *CEQR Technical Manual* construction noise screening thresholds would occur at these receptors for up to approximately 49 months. During this time, total noise levels at these receptors would be in the high-70s to low-80s dBA. According to *CEQR Technical Manual* noise exposure criteria, maximum construction noise levels at these receptors would be in the "clearly unacceptable" category.

Based on the prediction of construction noise levels up to the low-80s dBA resulting in construction noise level increments up to approximately 15 dBA and exceedances of the *CEQR Technical Manual* construction noise screening thresholds occurring over the course of up to 49 months, construction noise associated with the Proposed Project would result in a temporary significant adverse impact at receptors at the 67th Street Library. These receptors are discussed further in Chapter 17, "Mitigation."

Receptors at 332, 338, and 342 East 67th Street

Receptors 75 through 82 represent the residential receptors at 332, 338, and 342 East 67th Street. Existing noise levels at these receptors are in the mid-60s dBA, which would be considered "marginally acceptable" according to *CEQR Technical Manual* noise exposure criteria.

At these receptors, construction is predicted to produce noise levels up to the low-80s dBA, resulting in noise level increases up to 13 dBA during the most noise-intensive stages of construction (i.e., demolition), which would occur for up to approximately 12 months. Noise level increases exceeding the *CEQR Technical Manual* construction noise screening thresholds would occur at these receptors for up to approximately 49 months. During this time, total noise levels at these receptors would be in the high-70s to low-80s dBA. According to *CEQR Technical Manual* noise exposure criteria, maximum construction noise levels at these receptors would be in the "clearly unacceptable" category.

Based on the prediction of construction noise levels up to the low-80s dBA resulting in construction noise level increments up to approximately 13 dBA and exceedances of the *CEQR Technical Manual* construction noise screening thresholds occurring over the course of up to 49 months, construction noise associated with the Proposed Project would result in a temporary significant adverse impact at receptors at 332, 338, and 342 East 67th Street. These receptors are discussed further in Chapter 17, "Mitigation."

Receptors at 324 through 340 East 66th Street

Receptors 93 through 97, 113 through 118 and 187 through 189 represent the residential receptors at 324 through 340 East 66th Street. Existing noise levels at these receptors are in the mid-60s dBA, which would be considered "marginally acceptable" according to *CEQR Technical Manual* noise exposure criteria.

At these receptors, construction is predicted to produce noise levels up to the mid-80s dBA, resulting in noise level increases up to 18 dBA during the most noise-intensive stages of construction (i.e., demolition), which would occur for up to approximately 12 months. Noise level increases greater than 15 dBA at these receptors, which would be considered objectionable, would occur for up to approximately 13 months. Noise level increases exceeding the *CEQR Technical Manual* construction noise screening thresholds would occur at these receptors for up to approximately 52 months. During this time, total noise levels at these receptors would be in the mid-70s to mid-80s dBA. According to *CEQR Technical Manual* noise exposure criteria, maximum construction noise levels at these receptors would be in the “clearly unacceptable” category.

Based on the prediction of construction noise levels up to the mid-80s dBA resulting in construction noise level increments up to approximately 18 dBA and exceedances of the *CEQR Technical Manual* construction noise screening thresholds occurring over the course of up to 52 months, construction noise associated with the Proposed Project would result in a temporary significant adverse impact at receptors at 324 through 340 East 66th Street. These receptors are discussed further in Chapter 17, “Mitigation.”

Receptors at MSKCC Facilities

Receptors 103 through 112 represent the receptors at the MSKCC facilities on East 66th Street and Second Avenue. Existing noise levels at these receptors are in the mid-60s dBA, which would be considered “marginally acceptable” according to *CEQR Technical Manual* noise exposure criteria.

At these receptors, construction is predicted to produce noise levels up to the mid-80s dBA, resulting in noise level increases up to 17 dBA during the most noise-intensive stages of construction (i.e., demolition), which would occur for up to approximately 12 months. Noise level increases greater than 15 dBA at these receptors, which would be considered objectionable, would occur for up to approximately 13 months. Noise level increases exceeding the *CEQR Technical Manual* construction noise screening thresholds would occur at these receptors for up to approximately 52 months. During this time, total noise levels at these receptors would be in the mid-70s to mid-80s dBA. According to *CEQR Technical Manual* noise exposure criteria, maximum construction noise levels at these receptors would be in the “clearly unacceptable” category.

Based on the prediction of construction noise levels up to the mid-80s dBA resulting in construction noise level increments up to approximately 17 dBA and exceedances of the *CEQR Technical Manual* construction noise screening thresholds occurring over the course of up to 52 months, construction noise associated with the Proposed Project would result in a temporary significant adverse impact at receptors at the MSKCC facilities. These receptors are discussed further in Chapter 17, “Mitigation.”

Receptors at 315 East 65th Street

Receptors 131 through 134 represent the residential receptors at 315 East 65th Street. Existing noise levels at these receptors are in the mid-60s dBA, which would be considered “marginally acceptable” according to *CEQR Technical Manual* noise exposure criteria.

At these receptors, construction is predicted to produce noise levels up to the high-70s dBA, resulting in noise level increases up to 12 dBA during the most noise-intensive stages of construction (i.e., demolition), which would occur for up to approximately 12 months. Noise level increases exceeding the *CEQR Technical Manual* construction noise screening thresholds would occur at these receptors for up to approximately 49 months. During this time, total noise levels at these receptors would be in the high-70s dBA. According to *CEQR Technical Manual* noise exposure criteria, maximum construction noise levels at these receptors would be in the “marginally unacceptable” category.

Based on the prediction of construction noise levels up to the high-70s dBA resulting in construction noise level increments up to approximately 12 dBA and exceedances of the *CEQR Technical Manual* construction noise screening thresholds occurring over the course of up to 49 months, construction noise associated with the Proposed Project would result in a temporary significant adverse impact at receptors at 315 East 65th Street. These receptors are discussed further in Chapter 17, "Mitigation."

Other Nearby Receptors

At other receptors in the area, including 8, 9 through 13, 20 through 22, 23 through 26, 27 through 31, 34 through 40, 41 through 43, 45, 62 through 64 (representing St. Catherine's Park), 87 through 88, 89 through 92, 119 through 121, 135 through 137, 162 through 165 and 180 through 182, construction of the Proposed Project would, for some portion of the construction period, result in noise level increases that would exceed the *CEQR Technical Manual* construction noise screening thresholds. However, at these receptors, any exceedances of the *CEQR Technical Manual* construction noise screening thresholds would occur for less than 24 consecutive months, and increments would not reach the objectionable or very objectionable ranges. Consequently, while construction noise would be perceptible at these receptors, it would not rise to the level of a significant impact at these receptors according to the impact criteria described above.

CONCLUSIONS

Noise levels from construction of the Proposed Project are expected to be comparable to those from typical New York City construction involving a new building or buildings with concrete slab floors and foundation on piles. Similarly, potential disruptions to adjacent residences and other receptors from elevated noise levels generated by construction would be expected to be comparable to those that would occur immediately adjacent to a typical New York City construction site during the portions of construction when the loudest activities would occur.

The detailed analysis of construction noise concluded that construction pursuant to the proposed actions has the potential to result in construction noise levels that exceed *CEQR Technical Manual* construction noise screening threshold for an extended period of time or the additional construction noise impact criteria defined herein at receptors near the proposed development area, including the MSKCC facilities on East 66th Street and Second Avenue, the JREC, the 67th Street Library, residences immediately adjacent to the proposed development site at 301 and 321 East 66th Street, residences at 324 through 340 East 66th Street, residences at 332, 338, and 342 East 67th Street, and residences at 315 East 65th Street.

At these receptors, construction could produce noise level increases that would be noticeable and potentially intrusive during the most noise-intensive nearby construction activities, and would produce noticeable increases over the course of construction. While the greatest levels of construction noise would not persist throughout construction, and the noise levels would fluctuate resulting in noise increases that would be intermittent, these locations would experience construction noise levels whose magnitude and duration could constitute significant adverse impacts.

VIBRATION

INTRODUCTION

The vibration analysis considers the potential for construction to result in vibration levels that could result in structural or architectural damage, and/or annoyance or interference with vibration-sensitive activities. Vibratory levels at a receiver are a function of the source strength (which is dependent upon the construction equipment and methods utilized), the distance between the equipment and the receiver, the characteristics of the transmitting medium, and the receiver building construction. Construction equipment operation causes ground vibrations, which spread through the ground and decrease in strength with distance. Vehicular traffic, even in locations close to major roadways, typically does not result in perceptible vibration levels unless there are discontinuities in the roadway surface. With the exception of the case of fragile and possibly historically significant structures or buildings, 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 Development Site.

CONSTRUCTION VIBRATION CRITERIA

For purposes of assessing potential structural or architectural damage at historic buildings, the determination of a significant impact is typically based on the vibration impact criterion used by LPC of a peak particle velocity (PPV) of 0.50 inches/second as specified in the DOB TPPN #10/88. For non-fragile buildings, vibration levels below 0.60 inches/second would not be expected to result in any structural or architectural damage.

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

VIBRATION ANALYSIS

Potential structural or architectural damage is determined using the following formula:

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

where:

PPV_{equip} is the peak particle velocity in inches/second 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.

Potential annoyance or interference with vibration-sensitive activities is assessed using the following formula:

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

where:

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

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

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

Table 16-13 shows vibration source levels for typical construction equipment.

Table 16-13
Vibration Source Levels for Construction Equipment

Equipment		PPV_{ref} (in/sec)	Approximate L_v (ref) (VdB)
Hydromill (slurry wall)	In soil	0.008	66
	In rock	0.017	75
Hydraulic break ram		0.089	87
Large bulldozer		0.089	87
Caisson drilling		0.089	87
Loaded trucks		0.076	86
Jackhammer		0.035	79
Small bulldozer		0.003	58
Source: Transit Noise and Vibration Impact Assessment, FTA-VA-90-1003-06, May 2006.			

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 immediately adjacent to the construction site, including the 67th Street Library (the “Library Building”) as well as 301 and 321 East 66th Street. However, given their distances from the areas of rock excavation (at least 10 feet), vibration levels at these buildings and structures would not be expected to exceed 0.50 in/sec PPV, including during pile driving, which would be the most vibration-intensive activity associated with construction under the Proposed Actions. As discussed below under “Historic and Cultural Resources,” the Applicant would prepare a CPP that would include measures to protect the S/NR-eligible Library Building from inadvertent construction-related damage including ground-borne vibration, falling debris, and accidental damage from heavy machinery during project construction. Additional receptors farther away from the Development 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 to occupants of nearby buildings, equipment with the most potential for producing levels which exceed the 65 VdB limit would be impact pile drivers associated with foundation construction. These pieces of equipment would not produce perceptible vibration levels (i.e., vibration levels exceeding 65 VdB) at grade-level receptors that are at least approximately 150 feet away. While vibration resulting from demolition, excavation and foundation construction may be perceptible and potentially intrusive, it would be of limited duration as these pieces of equipment would not operate at the construction site for more than approximately 10 months, during which time they would operate intermittently. Furthermore, vibration levels would be lower at floors above the grade level (reducing by approximately 2 dB per floor). As such, the predicted levels of vibration would not be considered significant. In no case are significant adverse impacts from vibrations expected to occur.

OTHER TECHNICAL AREAS

LAND USE AND NEIGHBORHOOD CHARACTER

As is typical with construction projects, during periods of peak activity there would be some disruption to the nearby area. There would be construction trucks and construction workers coming to the area, as well as trucks and other vehicles backing up, loading, and unloading. These disruptions would be most pronounced in areas immediately adjacent to the Development Site but would have more limited effects on land uses in the larger study area, as most construction activities would take place within the Development Site or within portions of sidewalks and parking lanes along East 66th and East 67th Streets immediately adjacent to the Development Site. Overall, construction activities at the Development Site would be evident to the local community. However, throughout the construction period, measures would be implemented to control air quality, noise, and vibration within the Development Site, including the erection of construction barriers. The barriers would reduce potentially undesirable views of construction areas, buffer noise emitted from construction activities, and protect the safety of pedestrians and bicyclists. Therefore, the construction would not result in significant or long-term adverse impacts on local land use patterns or the character of the broader neighborhood.

SOCIOECONOMIC CONDITIONS

Construction of the Proposed Project would not block or restrict access to any facilities in the area, affect the operations of any nearby businesses, or obstruct major thoroughfares used by customers or businesses. Construction would create direct benefits resulting from expenditures on labor, materials, and services, and indirect benefits created by expenditures by material suppliers, construction workers, and other employees involved in the construction activity. Construction would also contribute to increased tax revenues for the city and state, including those from personal income taxes. Therefore, construction activities associated with the Proposed Project would not result in any significant adverse impacts on socioeconomic conditions.

COMMUNITY FACILITIES

The Proposed Project would replace the existing inefficient NYBC facility with a new building containing state-of-the-art, flexible, and efficient research and development facilities. Currently, the Blood Center is determining the best approach to phasing their operations during construction. The Blood Center is determining the division of operations during construction between existing assets, nearby partner labs, and new temporary space. No other community facilities (i.e., public or publicly funded schools, libraries, childcare centers, health care facilities, or fire and police stations) would be directly affected by construction activities. The construction area would be surrounded by construction barriers that would limit the effects of construction on nearby facilities. Measures outlined in the MPT plan to be implemented for the Proposed Project would ensure that lane closures and sidewalk closures are kept to a minimum and that adequate pedestrian access is maintained. Construction workers would not place any burden on public schools and would have minimal, if any, demands on libraries, childcare facilities, and health care facilities. New York City Police Department (NYPD) and FDNY emergency services and response times would not be materially affected by construction.

HISTORIC AND CULTURAL RESOURCES

Historic and cultural resources include both archaeological and architectural resources. A detailed assessment of potential impacts on archaeological and architectural resources is described in Chapter 6, “Historic and Cultural Resources.” In comments dated July 7, 2020, LPC determined that the Development Site has no archaeological significance, and, therefore, no further archaeological analysis is warranted.

Because the Proposed Project would be constructed immediately adjacent to the S/NR-eligible Library Building at 328 East 67th Street, in comments dated December 14, 2020, LPC requested the preparation of a CPP. As such, the Applicant would prepare a CPP that would include measures to protect the Library Building from inadvertent construction-related damage including ground-borne vibration, falling debris, and accidental damage from heavy machinery during project construction. The CPP would be prepared in consultation with LPC and implemented by a licensed professional engineer prior to the start of excavation and construction activities. With the preparation and implementation of a CPP for the Library Building, the Proposed Project would not be expected to result in any direct impacts to architectural resources in the study area.

HAZARDOUS MATERIALS

A detailed assessment of the potential risks related to the construction of the Proposed Project with respect to any hazardous materials is described in Chapter 8, "Hazardous Materials."

As with the No Action Development, the Proposed Project would entail demolition of certain existing buildings/foundations and excavation to construct the cellar and sub cellar levels. Demolition could disturb hazardous materials within the building and excavation could increase pathways for human exposure if performed without appropriate controls. However, the potential for adverse impacts associated with these activities would be minimized by adhering to the following regulatory requirements for both the No Action Development and the Proposed Project:

- Prior to demolition, a comprehensive asbestos survey of the existing building would be conducted including sampling of all suspect ACM. Based on its findings, all identified ACMs would be removed and disposed of in accordance with all Federal, State, and local requirements.
- Disposal of suspect mercury-containing or suspect PCB-containing equipment would be performed in accordance with applicable regulatory requirements. Any aboveground tanks, drums or containers of petroleum, chemicals, medical/biological, and radiological wastes would be properly disposed of in accordance with all federal, state and local regulations.
- Prior to demolition activities, all remaining chemical, biological, and radioactive materials would be removed and if not to be reused, disposed of in accordance with all applicable requirements. All areas where these materials were previously used or stored would then be carefully inspected and cleaned as necessary in accordance with applicable requirements. In particular, radioactive material regulations (including 6 NYCRR Part 380) require notification of DEC at least 30 days before vacating premises where radioactive materials were stored, and performance of a survey and any necessary decontamination to verify that there are no unacceptable residual levels.
- Demolition activities with the potential to disturb lead-based paint would be performed in accordance with the applicable Occupational Safety and Health Administration regulation (OSHA 29 CFR 1926.62 – Lead Exposure in Construction).
- Prior to any building renovation or demolition activities, all remaining chemical, biological and radioactive materials would be removed from those areas of the project site and disposed of in accordance with all applicable regulations.
- All on-site petroleum storage tanks would be properly closed and removed in accordance with DEC and/or FDNY requirements prior to redevelopment. Contaminated soil (and all other materials requiring off-site disposal), if any, would be disposed of in accordance with applicable federal, state and local requirements. During excavation any unforeseen USTs would be properly assessed, closed and removed in accordance with state, and local requirements (including those relating to spill reporting and tank registration). Soil intended for off-site disposal would be tested in accordance with the requirements of the receiving facility. Transportation of material leaving the site for off-site disposal would be in accordance

with federal, state and local requirements covering licensing of haulers and trucks, placarding, truck routes, manifesting, etc.

- Based on the depth of excavation, dewatering might be required. If it were, it would be performed in accordance with DEP requirements for discharge to sanitary/combined sewers. Pretreatment would be performed if necessary to meet the DEP requirements.

In addition to the measures above, the Proposed Project would also implement the following procedures:

- To investigate the potential concerns identified by the Phase I ESA, a Subsurface (Phase II) Investigation would be conducted, including the collection and analysis of soil, groundwater and soil gas samples. Prior to conducting this testing, a Sampling Protocol [incorporating a Health and Safety Plan (HASP)] would be submitted to DEP for review and approval.
- Based on the findings of the Subsurface Investigation, a Remedial Action Plan (RAP)/ Construction Health and Safety Plan (CHASP) would be developed in conjunction with DEP for implementation during soil disturbing activities. The RAP/CHASP would specify procedures for identifying and managing any anticipated or unanticipated contaminated soil and/or underground storage tanks (including procedures for stockpiling and off-site transportation and disposal), and appropriate health and safety procedures, including the need for dust control. The RAP would also include any necessary requirements for the new building's vapor controls and for the quality of any imported soil used in landscaped areas (if applicable).

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

WATER AND SEWER INFRASTRUCTURE

Infrastructure activities at the Development 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's infrastructure improvements would not cause any significant adverse impacts to nearby users of these services. ✷